



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: 112011-010

Project Number: 2011-07-076

Installation Number: 183-0143

Parent Company: Alpla, Inc.

Parent Company Address: 289 Highway 155 South, McDonough, GA 30253

Installation Name: Alpla, Inc.

Installation Address: 9 Cermak Blvd, St. Peters, MO 63376

Location Information: St. Charles County, S25, T16N, R6E

Application for Authority to Construct was made for:

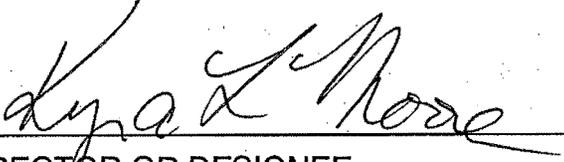
Four existing high-density polyethylene (HDPE) blow molding lines and the installation of one natural gas burn off oven. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

NOV 23 2011

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 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."

Alpla, Inc.
St. Charles County, S25, T16N, R6E

1. Operational Requirements for the Burn Off Oven (EP-3)
 - A. Alpla, Inc. shall use burn off oven (EP-3) exclusively to remove excess high-density polyethylene (HDPE) from metal molds.
 - B. Natural gas shall be the only fuel burned in this oven.
 - C. Alpla, Inc. shall use a direct flame afterburner to control emissions from the cleaning oven. The afterburner shall be operated at a temperature of at least 1,300 degrees Fahrenheit with more than a one-half (1/2) second residence time to ensure a minimum combustion efficiency of 99.9 percent.
 - D. The oven shall be equipped with an electric controller, with digital readout, which is able to monitor and display the temperature in the second combustion chamber to an accuracy of plus or minus two percent (2%).
 - E. The cleaning oven shall have opacity of less than twenty percent (20%) at all times.
 - 1.) Alpla, Inc. shall conduct opacity readings on EP-3 using the procedures contained in U.S. EPA Test Method 22. At a minimum, the observer should be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind and the presence of uncombined water. Readings are only required when the emission unit is operating and when the weather conditions allow. If no visible or other significant emissions are observed using these procedures, then no further observations would be required.
 - 2.) If visible emissions are perceived or believed to exceed the applicable opacity standard from EP-3, Alpla, Inc. would then conduct a Method 9 observation.

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SPECIAL CONDITIONS:

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

2. **Control Device Requirement – Mesh Filter Sock**
 - A. Alpla, Inc. shall control emissions from each grinder (EP-1B, EP-2B, EP-3B, and EP-4B) from the four blow molding lines using a mesh filter sock as specified in the permit application.
 - B. The mesh filter socks shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Replacement mesh filter socks shall be kept on hand at all times. The mesh filter socks shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Alpla, Inc. shall maintain an operating and maintenance log for the mesh filter socks 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.
3. **Record Keeping and Reporting Requirements**
 - A. Alpla, 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 Material Safety Data Sheets (MSDS) for all materials used
 - B. Alpla, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

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

Project Number: 2011-07-076
Installation ID Number: 183-0143
Permit Number:

Alpla, Inc.
9 Cermak Blvd
St. Peters, MO 63376

Complete: July 28, 2011

Parent Company:
Alpla, Inc.
289 Highway 155 South
McDonough, GA 30253

St. Charles County, S25, T16N, R6E

REVIEW SUMMARY

- Alpla, Inc. has applied for authority to operate four existing high-density polyethylene (HDPE) blow molding lines and install one natural gas burn off oven, rated at 0.0265 Million British thermal units per hour (MMBtu/hr).
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed burn off oven in negligible amounts.
- None of the New Source Performance Standards (NSPS) apply to the installation. NSPS Subpart E, *Standards of Performance for Incinerators*, does not apply to this unit because this unit has a charging rate of less than 50 tons per day. NSPS 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 to this unit because this unit is defined as a part reclamation unit per 40 CFR Part 60 Section 60.2265 and is therefore exempted from Subpart CCCC per 40 CFR Part 60 Section 60.2020(k).
- None of the National Emission Standards for Hazardous Air Pollutants (commonly known as NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (commonly known as MACT) regulations apply to the proposed equipment.
- Mesh sock filters are being used to control the particulate matter (PM), particulate matter less than ten microns in aerodynamic diameter (PM₁₀), and particulate matter less than 2.5 microns in aerodynamic diameter (PM_{2.5}) emissions from each grinder (EP-1B, EP-2B, EP-3B, and EP-4B) from each blow molding line.

- 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.
- This installation is located in St. Charles County, a nonattainment area for the eight-hour ozone standard and the 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.
- 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

This installation consists of four HDPE blow molding lines, which produce plastic bottles for household cleaners of various sizes. Each blow molding line includes a mixing/dosing unit, a blow molding unit and a grinder. Each mixing/dosing unit is joined to a blow molding unit, and therefore, these two units are considered one emission point (EP-1A, EP-2A, EP-3A, and EP-4A). The grinder operates independently of the other two units, and therefore, is considered a separate emission point (EP-1B, EP-2B, EP-3B, and EP-4B). All four HDPE blow molding lines are located inside one building.

Alpla, Inc. purchases HDPE pellets that are stored in two silos (EP-4 and EP-5), which are located outside of the building and are loaded pneumatically by trucks. Each blow molding line pneumatically receives HDPE pellets from these silos and the pellets are mixed and melted into a pliable mixture in each mixing/dosing unit. From the mixing/dosing unit, the pliable mixture is transferred to the blow molding unit via an enclosed auger conveyor. Each blow molding unit use metal molding casts of various sizes to mold the pliable plastic into various sizes of bottles. The formed bottles are trimmed and cut to a desired shape. The excess plastic is fed into a grinder via a conveyor and the ground plastic is pneumatically transferred into a storage tank and then pneumatically transferred to a mixing/dosing unit to be re-used in a future batch. The particulate emissions from each grinder are controlled by a mesh filter sock (CD-01, CD-02, CD-03, and CD-04). The final bottles are transferred by conveyors to be packaged and shipped. All of the equipment at this site is powered by electricity from the power grid. Molding release agents are not used at this installation.

No permits have been issued to Alpla, Inc. from the Air Pollution Control Program. This installation was formally owned by Alvey, Inc., who operated a powder painting operation. All of the equipment Alvey, Inc. used has been dismantled and removed from this installation.

PROJECT DESCRIPTION

This project includes the installation of a burn off oven and the existing HDPE blow molding lines.

Alpla, Inc. has submitted an Application for Authority to Construct to install a burn off oven, which is rated at 0.0265 MMBtu/hr, to remove melted plastic that remains on the metal molding casts, called heads, after the blow molding process. This melted plastic is currently removed by hand. Because the emissions from the existing HDPE blow molding lines have not been evaluated by the Air Pollution Control Program, these emissions have been included in this project also. The burn off oven and the existing HDPE blow molding lines are the only emission sources at this installation. The maximum blow molding throughput for all lines is three tons of HDPE per hour. The maximum grinder throughput is 1.57 tons of HDPE per hour.

Since the plastic from the heads are burned off, this oven is classified as an incinerator. Therefore, a construction permit is required for this oven according to 10 CSR 10-6.060(1)(B).

EMISSIONS/CONTROLS EVALUATION

The uncontrolled emission factors used in the analysis of the burn off oven's potential emissions were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition Section 1.4, "Natural Gas Combustion," July 2008. The burn off oven is equipped with an afterburner, which acts as a control device.

The blow molding lines do not have control devices. The blow molding emission factors were cited from a 1996 Air and Waste Management Association trade article, *Development of Emission Factors for Polyethylene Processing*. HAPs and volatile organic compounds (VOCs) are emitted in very small amounts, but no pollutant approaches its respective Screening Model Action Level or de minimis value.

Each grinder is controlled by a mesh sock filter. The grinder's uncontrolled emission factors was cited from WebFIRE, EPA's online air emissions database. The emission factor for PM₁₀ is from Source Classification Code (SCC) 3-01-018-07 for general high-density polyethylene plastic production. It was assumed that the PM_{2.5} emissions were equal to or less than the PM₁₀ emissions, therefore, the emission factor used for PM₁₀ was also used for PM_{2.5}. The emission factor for PM is from SCC 3-01-018-99 for non-specified plastic production. The mesh sock filters were assigned a 53 percent control efficiency for PM and PM₁₀ based upon documentation presented by the applicant. The mesh sock filters were assigned a 50 percent control efficiency for PM_{2.5} based on engineering judgment.

Because of a lack of emission factors for the loading of HDPE pellets into silos, the emission factor for the silo loading of HDPE pellets for this installation was cited from Permit # 112010-005 where Gilmour Manufacturing conducted stack testing on their silos. The emission factor of one pound of dust per ton of HDPE pellets was used. A control efficiency of 99 percent for PM and PM₁₀ was used per Permit # 112010-005 and a control efficiency of 95 percent was assumed for PM_{2.5} based on engineering judgment. It was assumed that the PM_{2.5} emissions were equal to or less than the PM₁₀ emissions, therefore, the emission factor used for PM₁₀ was also used for PM_{2.5}.

Potential emissions of the application represent the potential of the burn off oven and all four HDPE blow molding lines, assuming continuous operation (8,760 hours per year). The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/A	N/A	3.35	N/A
PM ₁₀	15.0	N/A	N/A	3.35	N/A
PM _{2.5}	10.0	N/A	N/A	6.29	N/A
SO _x	40.0	N/A	N/A	0.0001	N/A
NO _x	40.0	N/A	N/A	0.01	N/A
VOC	40.0	N/A	N/A	0.56	N/A
CO	100.0	N/A	N/A	0.005	N/A
HAPs	10.0/25.0	N/A	N/A	0.01	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 all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Alpla, 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 Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

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.

Daronn A. Williams
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated July 25, 2011, received July 28, 2011, designating Alpha, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- St. Louis Regional Office Site Survey, dated August 3, 2011.
- Air and Waste Management Association article, *Development of Emission Factors for Polyethylene Processing*, published 1996
- WebFIRE, last updated on October 25, 2011, <http://cfpub.epa.gov/webfire/index.cfm?action=fire.main>

Mr. Jim Duckett
Maintenance Manager
Alpla, Inc.
9 Cermak Blvd
St. Peters, MO 63376

RE: New Source Review Permit - Project Number: 2011-07-076

Dear Mr. Duckett:

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 and your new source review permit application. 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 Daronn A. Williams, at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale, P.E.
New Source Review Unit Chief

KBH:dwk

Enclosures

c: St. Louis Regional Office
PAMS File: 2011-07-076

Permit Number: