

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: **022018-005**

Project Number: 2017-04-032
Installation Number: 009-0074

Parent Company: WinTech

Parent Company Address: P.O. Box 480, Monett, MO 65708

Installation Name: WinTech - Cassville

Installation Address: 387 Sale Barn Road, Cassville, MO 65625

Location Information: Barry County, S32, T23N, R27W

Application for Authority to Construct was made for:

The installation of a spray booth coating operation and a paint drying oven, and a material cutting and sealing operation for producing commercial door and window products. 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.


Prepared by

Hans Robinson
New Source Review Unit


Director or Designee
Department of Natural Resources

FEB 20 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."

WinTech - Cassville
Barry County, S32, T23N, R27W

1. VOC and HAPs Emission Limitations
 - A. WinTech shall emit less than 40.0 tons of VOCs in any consecutive 12-month period from the entire installation. The VOC sources include EP-01, EP-02, and EP-04 (see Table 1 for details).
 - B. WinTech shall emit less than the SMAL given in Appendix A for each individual HAP and 25.0 tons of combined HAPs in any consecutive 12-month period from the entire installation. The HAP sources include EP-01, EP-02, and EP-04 (see Table 1 for details).
 - C. Attachment A, Attachment B, Attachment C, and Appendix B 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 and 1.B.
2. PM_{2.5} Emission Limitation
 - A. WinTech shall emit less than 10.0 tons of PM_{2.5} in any consecutive 12-month period from the entire installation. The PM_{2.5} sources include EP-01, EP-02, EP-03, and EP-05 (see Table 1 for details).
 - B. Attachment D or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A.
3. Capture Device Requirement – Spray Booth (EU-01)
 - A. WinTech shall capture emissions from the spray applied surface coating operation with a booth and exhaust fan(s).
 - B. WinTech shall operate the surface coating booth's exhaust fan(s) at all times when surface coating is applied.
 - C. WinTech shall maintain an operating and maintenance log for the spray booth and exhaust system 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.

SPECIAL CONDITIONS:

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

4. Control Device Requirement – Fabric Filters
 - A. The spray booth (EP-01) shall be equipped with a fabric filter.
 - B. The spray booth fabric 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. 24-hour 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.
 - C. The fabric filters shall be operated and maintained in accordance with the manufacturer's specifications.
 - D. Replacement fabric filters shall be kept on hand at all times. The replacement filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance). The replacement filter material type and weight shall meet or exceed the specifications of the existing filter. The air to cloth ratio or air to filter ratio shall not be increased when filter replacement is performed.
 - E. WinTech shall maintain a copy of the fabric filter manufacturer's performance warranty on site.
 - F. WinTech shall maintain an operating and maintenance log for the fabric filters 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) Dates of all above schedules, incidents, activities, and actions.
5. Control Device Requirement –Dust Collectors
 - A. WinTec shall control emissions from wood cutting, metal cutting, vinyl sawing, and vinyl milling using negative pressure (suction) dust collector(s). The dust collectors shall be switched on while materials are being cut, milled, or sawed. The maximum distance between the hood inlet and the emissions source shall not exceed 1.5 times the diameter of the dust collector inlet exhaust duct.
 - B. Once every 24-hours, personnel shall record whether or not sawdust and metal fragments were visually entering the dust collector bag filter as well

SPECIAL CONDITIONS:

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

as the time and date of the observation. 24-hour periods when the dust collector is non-operational shall be recorded.

- C. The dust collectors shall be operated and maintained in accordance with the manufacturer's specifications.
 - D. Replacement dust collector filters shall be kept on hand at all times. The replacement filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance). The replacement filter material type and weight shall meet or exceed the specifications of the existing filter. The air to cloth ratio or air to filter ratio shall not be increased when filter replacement is performed.
 - E. WinTech shall maintain a copy of the dust collector manufacturer's performance warranty on site.
 - F. WinTech shall maintain an operating and maintenance log for the dust collectors 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) Dates of all above schedules, incidents, activities, and actions.
6. Operational Requirement – Solvents/cleaning solutions
- A. WinTech shall keep all solvents, paints, and cleaning solutions in sealed containers whenever the materials are not in use. WinTech shall provide and maintain suitable, easily read, permanent markings on all solvent, paint, and cleaning solution containers used with this equipment.
7. Paved Haul Roads
- A. WinTech shall maintain and/or repair the portion of paved road used for hauling finished products. Maintenance of the surfaces will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
8. Use of Alternative Coatings in Spray Booth (EU-01)
- A. WinTech shall maintain a list of new alternative materials used in the paint that were not previously included in the permit application.
 - B. When considering using an alternative material in the new paint booth that is different than a material listed in the Application for Authority to Construct, WinTech shall use the material's SDS sheet to determine the VOC, HAPs, and particulate concentrations within the material using the

SPECIAL CONDITIONS:

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

highest concentrations listed. Compounds within the material listed on the SDS shall be compared to those compounds listed in Appendix A in order to identify potential HAPs. WinTech shall then use the highest VOC, HAP, and particulate concentrations listed on the material's SDS sheet to calculate and track emissions from using the new material in accordance with Special Condition 1 and Special Condition 2.

9. Record Keeping and Reporting Requirements

- A. WinTech 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. WinTech 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: 2017-04-032

Installation ID Number: 009-0074

Permit Number: 022018-005

Installation Address:

WinTech - Cassville
387 Sale Barn Road
Cassville, MO 65625

Parent Company:

WinTech
PO Box 480
Monett, MO 65708

Barry County, S32, T23N, R27W

REVIEW SUMMARY

- WinTech - Cassville has applied for authority to construct a spray booth powder coating operation, a paint drying oven, and material cutting and sealing operations for producing commercial door and window products.
- The application was deemed complete on 4/20/2017.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are generated from the spraying powder coats, the application of sealants, and the use of solvents. (*See Project Description for full list of HAPs*)
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. The MACT standard, 40 CFR Part 63, HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing* does not apply to EP-01 powder coating.
- A spray booth and spray booth filter system is being used to control the PM, PM₁₀, PM_{2.5} emissions from powder coating. Suction dust collectors are being used to control particulate from metal, wood, and PVC sawing/cutting.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC, HAPs, and PM_{2.5} are conditioned below de minimis levels.
- This installation is located in Barry 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 conditioned below de minimis levels. All other pollutants are indirectly limited.
- 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.
- No Operating Permit is required for this installation because conditioned potential emissions of all pollutants are less than de minimis.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

WinTech, located in Cassville, Missouri manufactures commercial doors and windows. With the issuance of this permit, the installation will be conditioned as a de minimis source.

No permits have been previously issued to WinTech - Cassville from the Air Pollution Control Program.

PROJECT DESCRIPTION

WinTech has applied to install a powder coat spray booth for coating metal parts in the manufacturing of doors and windows. The booth was manufactured by Standard Tools and Equipment, Model SDD-1000. The booth has two 24" tube axial fans with a CFM of 15,600. The spray booth will be equipped with a fabric filter. The facility will also be installing a single natural gas fired paint drying oven. The oven is rated at 1.5 MMBtu/hr of natural gas. WinTech will perform metal, wood, vinyl (PVC), and annealed glass cutting and fabrication in order to assemble and package door and window products. Cutting and fabrication will be controlled by negative pressure (suction) dust collectors with filters. Sealants will be applied to all doors and windows and some sealants will emit VOC and HAPs. All materials will enter and leave the facility on a paved driveway approximately 165 feet long. VOC, HAP, and PM_{2.5} emissions are conditioned below de minimis installation wide. HAPs are additionally conditioned below the individual SMAL installation wide for each pollutant. MACT XXXXXX does not apply to the facility because the facility's SIC, 3442, is not listed within the MACT. MACT HHHHHH does not apply to the facility because the facility will only be performing powder coating.

While HAPs contained within powder coats exist in low concentrations, the ones identified were brown pigments with chromium (III) (SMAL 5.0 tpy) and antimony compounds (SMAL 5.0 tpy). The two cleaning solutions provided with the application are S-0138 Solvent Blend which contains Acetone (exempt from being considered as a VOC), and DIBASIC ESTER which is 100% VOC with no HAPs (density of 9.12 lb/gallon). Door and window products are constructed from metal, vinyl, and glass which

uses Pecora 896-FC silicone type sealant which contains xylene (SMAL 10.0 tpy) and Toluene (SMAL 10.0 tpy). Certain brown powder coats contain Chromium-Antimony Titanate Buff Rutile pigments. Of the pigment, the concentrations of chromium (III) and antimony are 8% and 15%, respectively. There may be other HAPs present in the coatings, cleaning solutions, and sealants provided with the application or new HAPs contained in materials used in the future. If HAPs exceed the individual SMAL, 10 tpy limit, or 0.5 lbs/hour emission rate, seek approval from the Air Pollution Control Program New Source Review Unit before using this material. The company may use alternative coatings as long as coating usage complies with Special Condition 8.

When door and window products are finished and ready for shipping, they are loaded on pallets and hauled within semi-trucks over a 165 foot paved drive way. In order to prepare pallets for shipping door and window products, wood supports for packaging are cut and fabricated using a table saw. Emissions are collected using a suction dust collector. The wood supports are then interwoven between finished products as they are palletized. Doors and windows produced at the facility are constructed from metal, vinyl, and glass. Metal pieces are cut with a saw and then fabricated with punched holes or drilled before assembly. The process of sawing and perforating the metal will be controlled with suction dust collectors.

Among window products, WinTech produces thermal windows using Elastocast 70215T and Elastocast 70230R resin (both produced by BASF, combined to create a diisocyanate sealant). The Elastocast material is applied to glass which is thermally insulating. Elastocast 70215T contains Diphenylmethane-4,4'-diisocyanate (MDI, HAP with SMAL of 0.1 tpy, 50% concentration). Elastocast 70230R was not identified to contain HAPs. Among door products, Wintech produces insulated doors using AutoFroth 9300A Isocyanate and AutoFroth 92-B-0705 Resin (both produced by BASF, combined to create a diisocyanate sealant). AutoFroth 9300A Isocyanate also contains 50% MDI. Essentially the Elastocast components and AutoFroth components behave similarly: an 'A' side compound containing MDI is combined with a 'B' side resin compound which react and form a solid sealant.

MDI emissions will be small since MDI is a solid compound and will be applied by a handheld extruder directly to the window and/or door (i.e. MDI compounds won't be sprayed or atomized). MDI emissions were calculated using the spreadsheet "MDI / PMDI Calculator" provided by the Center for the Polyurethanes Industry – American Chemistry Council. The emission rate for doors, similar in magnitude to window production, was 0.000494 lbs/year (based upon a mixing temperature of 85 °F, MDI content of 70% weight, average 2.5 ft³ of foam used in each door, 50 doors per day). Taking 0.000494 lbs/year and dividing by 18250 windows and/or doors per year (equivalent to 50 doors per day multiplied by 365), the emission factor for MDI was developed (2.71E-8 lbs MDI per door or window). While all Elastocast and AutoFroth products contain some VOC (between 13%-22% of total weight), it was assumed that, the quick reaction times of 'A' side and 'B' side compounds and the nature of polyurethane (reaction product of MDI and polyol; hardened internally porous product), trackable quantities of VOC emissions will not be able to escape the window and door products while they reside on WinTech's property. Essentially the resins may contain

VOC components including propylene carbonate, tris(2-chloro-1-methylethyl)phosphate, cyclohexyldimethylamine, and N, N'N"-tris(dimethylamino-propyl)-hexahydrotriazine, diethylene glycol, and triethylenediamine which are a part of the product and act as flame retardants, surfactants, catalysts, pigments, or blowing agents for creating a porous internal structure in the hardened polyurethane. Essentially any remaining VOC is captured in the 'bubbles' within the material though some off gassing may be possible over time. The VOC content of Elastocast 70215T, Elastocast 70230R, AutoFroth 9300A, and AutoFroth 92-B-0705 are 13%, 17%, 13%, and 22%, respectively (polyol was not counted as VOC since it will completely react with MDI). For a full list of emission units at the facility see Table 1 and 2 below.

Table 1: Installation Emission Units

Emission Units	Emissions Point Description	Potential Criteria Pollutants	Control Device	Permit Status ¹
EU-01	Powder Coating	PM/PM ₁₀ /PM _{2.5} , VOC, HAPs	Spray Booth and Fabric Filter	New
EU-02	Paint Oven - Natural Gas Fueled	PM/PM ₁₀ /PM _{2.5} , SOx, NOx VOC, CO, HAPs	N/C	New
EU-03	Wood/Metal/Plastic/Glass Cutting & Milling: <i>Metal and vinyl drill presses (12 total)</i> <i>Metal and vinyl mills (16 total)</i> <i>Bridgeport tooling mill/drill (1 total)</i> <i>Metal and glass sanders (5 total)</i> <i>Metal, vinyl, and wood saws (25 total)</i> <i>Metal Grinders (4 total)</i> <i>Metal Lathe/Drills (1 total)</i>	PM/PM ₁₀ /PM _{2.5}	Suction Dust Collectors	New
EU-04	Sealant usage and Cleaning Solvents	MDI, VOC, HAPs	N/C	New
EU-05	Haul Roads	PM/PM ₁₀ /PM _{2.5}	Paved Surface	New

N/C = No Control Device is Associated with the Emission Unit

¹All installation wide emission points were considered as a part of this project for permitting and potential to emit purposes

EMISSIONS/CONTROLS EVALUATION

The emission factors used for roads and natural gas combustion were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 *Natural Gas Combustion* (July, 1998) and Section 13.2.1 *Paved Roads* (January, 2011). All spray gun emissions will arise from a single spray booth. Since the spray booth will be enclosed on four sides with a roof and have an airflow/exhaust system, a default 100% capture efficiency was assumed. WinTech will use an electrostatic spray gun for all surface coating. According to the EPA document entitled, *Sources and Control of Volatile Organic Air Pollutants*, APTI Course 482, Third Edition (November 2002) airless spray coating of large flat surfaces can achieve 75% transfer

efficiency. The spray booth is equipped with filters and was therefore assigned a default 95% PM/PM₁₀/PM_{2.5} control efficiency. Multiplying the 25% overspray emissions by the remaining 5% filter emissions yields a 1.25 % of total weight sprayed emission rate (i.e. for every 100 lbs of solid coat sprayed, 1.25 lbs of PM/PM₁₀/PM_{2.5} will be emitted). These efficiencies have been added to the particulate tracking sheet in Attachment D.

The products produced by the facility, commercial doors and windows, will be hauled from the facility by semi-trucks. When door and window products are finished they are palletized and placed on semi-trucks trailers which weigh roughly 24.5 tons unloaded. An average pallet will weigh around 500 lbs. Typically less than a dozen pallets are loaded into a truck at a time, though for calculations, the area of a full sized semi-truck trailer can accommodate around 24 pallets. Currently, in order to haul away all products produced over an 8-hour shift, WinTech only requires 6 trucks to haul away all products. Scaled to operating nonstop for 24 hours and combined with a 10% safety factor, a maximum of 20 semi-trucks can be expected to pick-up products in a single day. This yields a daily haul rate of 120 tons per day of palletized doors and windows. Assuming roughly 120 tons of material must also enter the facility each day, the hourly haul rate delivering raw materials and removing finished products are 5 tph for receiving and shipping (10 tph total). The semi-trucks will haul over an existing paved driveway no longer than 165 feet. PM_{2.5} haul road emissions were calculated and found to be about 0.061 tpy. Since emissions are relatively small compared to the 10 tpy PM_{2.5} limit, maximum monthly haul road emissions were hard coded into Attachment D as a constant monthly value.

Windows will also be fitted with metal and extruded polyvinyl chloride (PVC) pieces. wood cutting, metal cutting, and metal drilling/perforating, vinyl milling, and vinyl sawing will each be controlled by separate suction dust collectors. Essentially the suction dust collector uses an electric motor to run a fan which pulls air into the dust collector unit. Air that travels into the unit will then cross over a filter where particulate is captured. Generally the air intake will be right next to the cutting operation, though some suction dust collectors will have tubing or a hose attached which allows the intake to stretch closer to the particulate source. Currently WinTech uses several Grizzly Dust Collector units for collecting cutting, sawing, and milling particulate emissions, though they are not required to specifically use Grizzly units. They may use any manufacturer so long as the unit behaves similarly (i.e. uses negative pressure suction force to pull air borne particulate through a filter.) The facility may also control multiple operations with the same dust collector or they may use a single dust collector for sawing, cutting, milling, etc. (See Special Condition 4.B)

Suction dust collector capture efficiency was given a default 70% based upon compliance with special condition 5 (suction force will capture particulate, but since cutting/fabricating is not fully enclosed, some particulate will not be captured). The filter efficiency was assumed to have 90% filter efficiency for all particulate (the filter was given a slightly lower control efficiency because it was designed to primarily handle larger particulate). Therefore overall control efficiency was calculated to be 63% for PM/PM₁₀/PM_{2.5} (i.e. 37% of PM/PM₁₀/PM_{2.5} will not be captured). Wood cutting emission factors were derived from EPA Memorandum entitled, "Particulate Matter Potential to

Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country.” This document provides a PM emission factor but assumes the PM₁₀ emission factor and PM_{2.5} emission factor will be 50% and 25% of the total particulate, respectively. For a more realistic particulate distribution, the CEIDARs particulate distribution was applied to the Memorandum’s PM emission factor. Combining the Memorandum PM emission factor and the CEIDARs particle distribution yields emission factors for PM, PM₁₀, and PM_{2.5} of 0.350 lb/ton, 0.140 lb/ton, and 0.099 lb/ton, respectively. Emission factors for wood cutting were used for metal cutting/perforating and vinyl milling as well.

The following table provides an emissions summary for this project. There are no existing potential emission sources permitted at this facility. Potential emissions of the application represent the potential of the entire installation, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tpy)

Pollutant ¹	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	N/A	N/A	11.26	11.26
PM ₁₀	15.0	N/A	N/A	10.30	10.30
PM _{2.5}	10.0	N/A	N/A	< 10.0	< 10.0
SO ₂	40.0	N/A	N/A	3.86E-03	3.86E-03
NOx	40.0	N/A	N/A	0.64	0.64
VOC	40.0	N/A	N/A	< 40.0	< 40.0
CO	100.0	N/A	N/A	0.54	0.54
Combined HAPs	25.0	N/A	N/A	< 25.0	< 25.0
Toluene	10.0/SMAL	N/A	N/A	< SMAL	< SMAL
Xylene	10.0/SMAL	N/A	N/A	< SMAL	< SMAL

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

¹While Toluene and Xylene were listed as the largest individual HAPs, other HAPs may be present.

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.

APPLICABLE REQUIREMENTS

WinTech - Cassville 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
- *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 4/13/2017, received 4/17/2017, designating WinTech as the owner and operator of the installation.

Other Relied Upon Documents

- The Engineering ToolBox summary of pine (kiln dried) lumber Boards which suggests average density of pressure treated lumber is approximately 30 lbs/ft³. http://www.engineeringtoolbox.com/green-kiln-dried-pressure-treated-lumber-weights-d_1860.html
- American Chemistry Council – Center for the Polyurathanes Industry, “MDI / PMDI Calculator”.

- EPA Memorandum from Region 10 entitled, "Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country" (May 08, 2014) which provides emission factors for woodcutting.
- E-mail Communications between WinTech and the Missouri Air Pollution Control Program. This includes supplemental data submitted along with the e-mails.

Attachment B - HAP Compliance Worksheet

WinTech - Cassville
 Barry County, S32, T23N, R27W
 Project Number: 2017-04-032
 Installation ID Number: 009-0074
 Permit Number: **022018-005**

This sheet covers the month of _____ in the year _____

Column 1	Column 2 (a)	Column 3	Column 4	Column 5
Material Used (name, HAP CAS #)	Amount of material used (include units)	Density of material used (lbs/gal)	HAP content (%)	HAP emissions (tons)
Total monthly HAP emissions from Natural Gas Combustion (tons):				0.001
(b) Total amount of doors and windows produced using MDI compounds: Total monthly MDI emissions from applying sealant (tons):				
(c) Total HAP emissions calculated for this month (tons):				
(d) 12-month HAP emissions total from previous month's worksheet (tons):				
(e) Monthly HAP emissions total from previous year's worksheet (tons):				
(f) Current 12 month total of HAP emissions (tons): [(c)+(d)-(e)]				

Instructions:

- (a) Choose appropriate HAP calculation method for units reported:
 1. If usage is in tons: [Column 2] x [Column 4] = [Column 5]
 2. If usage is in pounds: [Column 2] x [Column 4] x [0.0005] = [Column 5]
 3. If usage is in gallons: [Column 2] x [Column 3] x [Column 4] x [0.0005] = [Column 5]
 For HAPs bound within powder coating use the following calculation methods:
 1. If usage is in tons: [Column 2] x [Column 4] x [0.0125] = [Column 5]
 2. If usage is in pounds: [Column 2] x [Column 4] x [0.0125] x [0.0005] = [Column 5]
 (Note 1: The [0.0125] factor above accounts for the 100% capture, and 95% filter efficiency, and 25% overspray such that 1.25% of solid particulate will escape the booth as emissions.)
- (b) Currently WinTech is not limited in the amount of doors and windows they can make. Therefore monthly MDI emissions are calculated as the sum of windows/doors produced with MDI compounds multiplied by 1.35E-11 tons MDI (equivalent to 2.71E-08 lbs MDI per door/window divided by 2000 lbs/ton)
- (c) Summation of Column 5.
- (d) 12-month HAP emissions total from previous month's worksheet (tons).
- (e) Monthly HAP emissions total from previous year's worksheet (tons).
- (f) Calculate the new 12 month HAP emissions total. **A total of less than 25.0 tons indicates compliance.** Include the startup, shutdown, and malfunction emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050

Attachment D – PM_{2.5} Compliance Worksheet

WinTech - Cassville
 Barry County, S32, T23N, R27W
 Project Number: 2017-04-032
 Installation ID Number: 009-0074
 Permit Number: **022018-005**

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

Column 1	Column 2 (a)	Column 3	Column 4	Column 5
Material Used (name, type)	Amount of material used (include units, lbs or gallons)	Density of material used (lbs/gal)	Solid content (%) (Use largest % listed if range)	PM _{2.5} emissions (tons)
(a-4) Total Monthly PM _{2.5} emissions from Vinyl Cutting (tons):				
(a-5) Total Monthly PM _{2.5} emissions from Metal Cutting (tons):				
(a-6) Total Monthly PM _{2.5} emissions from Wood Cutting (tons):				
(a-7) Total Monthly PM _{2.5} emissions from Glass Sanding (tons):				
Total Monthly PM _{2.5} emissions from Haul Roads (tons):				0.0051
Total Monthly PM _{2.5} emissions from Natural Gas Combustion (tons):				0.0041
(b) Total PM _{2.5} emissions calculated for this month (tons):				
(c) 12-month PM _{2.5} emissions total from previous month's worksheet (tons):				
(d) Monthly PM _{2.5} emissions total from previous year's worksheet (tons):				
(e) Current 12 month total of PM _{2.5} emissions (tons): [(b)+(c)-(d)]				

Instructions:

(a) Choose appropriate PM_{2.5} calculation method for units reported:

- 1) If usage is in tons: [Column 2] x [Column 4] x [0.0125] = [Column 5]
- 2) If usage is in pounds: [Column 2] x [Column 4] x [0.0125] x [0.0005] = [Column 5]
- 3) If usage is in gallons: [Column 2] x [Column 3] x [0.0125] x [0.0005] = [Column 5]
- 4) (row a-4) vinyl cutting emissions: [total length of vinyl cut in ft] x [0.005965 ft²] x [97 lb/ft³ vinyl density] x [0.0005] x [0.099 lbs/ton] x [0.37] x [0.0005] = [Column 5].
- 5) (row a-5) metal cutting emissions: [total length of metal cut in ft] x [0.004007 ft²] x [density of metal (170 lbs/ft³ for Aluminum, 500 lbs/ft³ for Steel)] x [0.0005] x [0.099 lbs/ton] x [0.37] x [0.0005] = [Column 5].
- 6) (row a-6) wood cutting emissions: [total volume of wood cut in ft³] x [30 lbs/ft³] x [0.0005] x [0.099 lb/ton] x [0.37] x [0.0005] = [Column 5]
- 7) (row a-7) For annealed glass sanding only: [area glass sanded (ft²)] x [glass height (ft)] x [156 (lb/ft³ - density of soda lime float glass)] x [0.0005] x [0.099 lbs/ton] x [0.37] x [0.0005] = [Column 5]

(b) Summation of Column 5.

(c) 12-month PM_{2.5} emissions total from previous month's worksheet (tons).

(d) Monthly PM_{2.5} emissions total from previous year's worksheet (tons).

(e) Calculate the new 12 month PM_{2.5} emissions total. **A total of less than 10.0 tons per year indicates compliance.** Include the startup, shutdown, and malfunction emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050

Note 1: The [0.0125] factor above accounts for the 100% capture, and 95% filter efficiency, and 25% overspray such that 1.25% of solid particulate will escape the booth as emissions.

Note 2: The [(a)4] 0.00596 ft² and the [(a)5] 0.004007 ft² listed above are the largest cross sectional area for each type of material.

Appendix A – Table of HAPs and SMAL (continues for two pages)

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-]	106-38-3	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-]	108-42-3	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-]	109-88-4	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					PROPYLENEMINE, [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	108-51-4	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	TRICHLOROBENZENE, [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	TRIETHYLAMINE	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						

APPENDIX B – Natural Gas Emissions (1.5 MMBtu/hr)

HAPs	lbs/hour	Monthly Emissions	Yearly Emissions	HAPs	lbs/hour	Monthly Emissions	Yearly Emissions
POM aggregate group	1.03E-06	3.75E-07	4.50E-06	Indeno(1,2,3-cd)pyrene	2.65E-09	9.66E-10	1.16E-08
2-Methylnaphthalene	3.53E-08	1.29E-08	1.55E-07	Naphthalene	8.97E-07	3.27E-07	3.93E-06
3-Methylchloranthrene	2.65E-09	9.66E-10	1.16E-08	Pentane	3.82E-03	1.40E-03	1.67E-02
7,12-Dimethylbenzanthracene	2.35E-08	8.59E-09	1.03E-07	Phenanathrene	2.50E-08	9.13E-09	1.10E-07
Acenaphthene	2.65E-09	9.66E-10	1.16E-08	Propane	2.35E-03	8.59E-04	1.03E-02
Acenaphthylene	2.65E-09	9.66E-10	1.16E-08	Pyrene	7.35E-09	2.68E-09	3.22E-08
Anthracene	3.53E-09	1.29E-09	1.55E-08	Toluene	5.00E-06	1.83E-06	2.19E-05
Benanthracene	2.65E-09	9.66E-10	1.16E-08	Arsenic	2.94E-07	1.07E-07	1.29E-06
Benzene	3.09E-06	1.13E-06	1.35E-05	Barium	6.47E-06	2.36E-06	2.83E-05
Benzo(a)pyrene	1.76E-09	6.44E-10	7.73E-09	Beryllium	1.76E-08	6.44E-09	7.73E-08
Benzo(b)fluoranthene	2.65E-09	9.66E-10	1.16E-08	Cadmium	1.62E-06	5.90E-07	7.09E-06
Benzo(g,h,i)perylene	1.76E-09	6.44E-10	7.73E-09	Chromium	2.06E-06	7.51E-07	9.02E-06
Benzo(k)fluoranthene	2.65E-09	9.66E-10	1.16E-08	Cobalt	1.24E-07	4.51E-08	5.41E-07
Butane	3.09E-03	1.13E-03	1.35E-02	Copper	1.25E-06	4.56E-07	5.48E-06
Chrysene	2.65E-09	9.66E-10	1.16E-08	Manganese	5.59E-07	2.04E-07	2.45E-06
Dibenzo(a,h)anthracene	1.76E-09	6.44E-10	7.73E-09	Mercury	3.82E-07	1.40E-07	1.67E-06
Dichlorobenzene	1.76E-06	6.44E-07	7.73E-06	Molybdenum	1.62E-06	5.90E-07	7.09E-06
Ethane	4.56E-03	1.66E-03	2.00E-02	Nickel	3.09E-06	1.13E-06	1.35E-05
Fluoranthene	4.41E-09	1.61E-09	1.93E-08	Selenium	3.53E-08	1.29E-08	1.55E-07
Fluorene	4.12E-09	1.50E-09	1.80E-08	Vanadium	3.38E-06	1.23E-06	1.48E-05
Formaldehyde	1.10E-04	4.03E-05	4.83E-04	Zinc	4.26E-05	1.56E-05	1.87E-04
Hexane	2.65E-03	9.66E-04	1.16E-02				

Note: This sheet will suffice for monthly and 12-month rolling total emissions tracking to document that all natural gas combustion HAPs are below the SMAL unless one of the above pollutants is emitted by a separate emission point (such as, but not limited to, sealant emissions). If any above pollutant is emitted elsewhere at the facility, add the corresponding Monthly Emissions listed above to the appropriate individual HAPs tracking sheet on Attachment C. Monthly and yearly emissions for pollutants derived on Attachments A through D supersede monthly and yearly emissions listed on the table above.

APPENDIX C - Abbreviations and Acronyms

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

To A1 Overview

M20 Doors

Show/Hide

Show/Hide Ca

Doors

Calculation of emissions from door production

How many sets of data do you have? 1

Set

Clear Values

Term	Quantity	Unit
% MDI in MDI/PMDI	70	percent
Volume of Cavity or Mold	3	ft ³
Number of Pieces	18,250	1/yr
T _{proc} Process Temperature	85.0	F
L _c	4.94E-04	lb/yr
L _c	4.94E-04	lb/yr

le Guidance

alculation Details

ect

Comment	Data Set #
Percentage of MDI in feedstock. Enter value.	1
Volume of displaced air in cavities or molds during the year	1
Per year	1
Enter value and select units	1
	1
Calculated emissions of diisocyanates	1
Calculated emissions of diisocyanates	GRAND TOTAL

Emission Unit	Description	Installation's Designation	MHDR (MMBtu/hr input)	Combined MHDR (MMBtu/hr input)	MHDR (MMcf/hr)	Pollutant	CAS	HAP?	Emission Factor (lb / mmcf)	Emission Factor Source (SCC)	Available Pollutant (lb/hr)	Control Device	PTE (lb/hr)
			1.5	1.50	0.001	PM filterable			1.9		0.0028	none	0.0028
						PM10			7.6		0.0112	none	0.0112
						PM2.5			7.6		0.0112	none	0.0112
						SOx			0.6		0.0009	none	0.0009
						NOx			100		0.1471	none	0.1471
						VOC			5.5		0.0081	none	0.0081
						CO			84		0.1235	none	0.1235
						Combined HAPs			1.888		0.0028	none	0.0028
						POM aggregate group			6.98E-04		1.03E-06	none	1.03E-06
						2-Methylnaphthalene	91-57-6	y	2.40E-05		3.529E-08	none	3.53E-08
						3-Methylchloranthrene	56-49-5	y	1.80E-06		2.647E-09	none	2.65E-09
						7,12-Dimethylbenzanthracene	57-97-6	y	1.60E-05		2.353E-08	none	2.35E-08
						Acenaphthene	83-32-9	y	1.80E-06		2.647E-09	none	2.65E-09
						Acenaphthylene	203-96-8	y	1.80E-06		2.647E-09	none	2.65E-09
						Anthracene	120-12-7	y	2.40E-06		3.529E-09	none	3.53E-09
						Benzoanthracene	56-55-3	y	1.80E-06		2.647E-09	none	2.65E-09
						Benzene	71-43-2	y	2.10E-03		3.088E-06	none	3.09E-06
						Benzo(a)pyrene	50-32-8	y	1.20E-06		1.765E-09	none	1.76E-09
						Benzo(b)fluoranthene	205-99-2	y	1.80E-06		2.647E-09	none	2.65E-09
						Benzo(g,h,i)perylene	191-24-2	y	1.20E-06		1.765E-09	none	1.76E-09
						Benzo(k)fluoranthene	205-82-3	y	1.80E-06		2.647E-09	none	2.65E-09
						Butane	106-97-8		2.10E+00		3.088E-03	none	3.09E-03
						Chrysene	218-01-9	y	1.80E-06		2.647E-09	none	2.65E-09
						Dibenzo(a,h)anthracene	53-70-3	y	1.20E-06		1.765E-09	none	1.76E-09
						Dichlorobenzene	25321-22-6	y	1.20E-03		1.765E-06	none	1.76E-06
						Ethane	74-84-0		3.10E+00		4.559E-03	none	4.56E-03
						Fluoranthene	206-44-0	y	3.00E-06		4.412E-09	none	4.41E-09
						Fluorene	86-73-7	y	2.80E-06		4.118E-09	none	4.12E-09
						Formaldehyde	50-00-0	y	7.50E-02		1.103E-04	none	1.10E-04
						Hexane	110-54-3	y	1.80E+00		2.647E-03	none	0.0026
						Indeno(1,2,3-cd)pyrene	193-39-5	y	1.80E-06		2.647E-09	none	2.65E-09
						Naphthalene	91-20-3	y	6.10E-04		8.971E-07	none	8.97E-07
						Pentane	109-66-0		2.60E+00		3.824E-03	none	3.82E-03
						Phenanthrene	85-01-8	y	1.70E-05		2.500E-08	none	2.50E-08
						Propane	74-98-6		1.60E+00		2.353E-03	none	2.35E-03
						Pyrene	129-00-0	y	5.00E-06		7.353E-09	none	7.35E-09
						Toluene	108-88-3	y	3.40E-03		5.000E-06	none	5.00E-06
						Arsenic	7440-38-2	y	2.000E-04		2.941E-07	none	2.94E-07
						Barium	7440-39-3		4.40E-03		6.471E-06	none	6.47E-06
						Beryllium	7440-41-7	y	1.20E-05		1.765E-08	none	1.76E-08
						Cadmium	7440-43-9	y	1.10E-03		1.618E-06	none	1.62E-06
						Chromium	7440-47-3	y	1.40E-03		2.059E-06	none	2.06E-06
						Cobalt	7440-48-4	y	8.40E-05		1.235E-07	none	1.24E-07
						Copper	7440-50-8		8.50E-04		1.250E-06	none	1.25E-06
						Manganese	7439-96-5	y	3.80E-04		5.588E-07	none	5.59E-07
						Mercury	7439-97-6	y	2.60E-04		3.824E-07	none	3.82E-07
						Molybdenum	7439-98-7		1.10E-03		1.618E-06	none	1.62E-06
						Nickel	7440-02-0	y	2.10E-03		3.088E-06	none	3.09E-06
						Selenium	7782-49-2	y	2.40E-05		3.529E-08	none	3.53E-08
						Vanadium	7440-62-2		2.30E-03		3.382E-06	none	3.38E-06
						Zinc	7440-66-6		2.90E-02		4.265E-05	none	4.26E-05
						CO2			120,000		176.4706	none	176.471
						Methane			2.3		0.0034	none	0.0034
						N2O			2.2		0.0032	none	0.0032
						GHG (mass)							
						GHG (CO2e)							

Natural Gas HHV (Btu/cf)
1,020

100yr GWP 40 CFR 98
Table A-1, Jan 1 2014
CO2 1
CH4 25
N2O 298

Natural gas HHV of 1,020 Btu/cf cited from AP-42 Section 1.4, July 1998.
Dichlorobenzene group CAS 25321-22-6 conservatively assumed as 100% 1,4-dichlorobenzene CAS 106-46-7.
HAPs updated per "Air Pollution Control Program Table of Hazardous Air Pollutants, Screening Model Action Levels, and Risk Assessment Levels" Revision 10, 5/3/2012

Activity	MHDR		Truck Types			We*	Wf*
	(tons/hr)	(trips/hr)	Truck	Truck	type		
Window product shipping	5.00	1.333	100%			24.5	28.25
Raw material drop off	5.00	1.333	100%			24.5	28.25
title						0	0
title						0	0
title						0	0
title						0	0
title						0	0
title						0	0

Truck Type	We (tons)	Wf (tons)
Truck	24.5	28.25
Truck	24.5	28.25
type		
type		

truck type row must sum to 100% per each activity

1=empty
2=full
3=both

Activities	ID	HR																						
		HR1	HR2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
W	D one way (feet)	165	165																					
	D one way (miles)	0.031	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Window product shipping	1	2																					
	Raw material drop off	2	1																					
	title																							
MHDR	Window product shipping	12.250	14.125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Raw material drop off	14.125	12.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	title	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	W	28.38	28.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Surface	Paved	Paved	Unpaved																				
	PTE	E(PM2.5) (lbs/VMT)	0.07882	0.20881																				
E(PM10) (lbs/VMT)		0.32518	0.85112																					
E(PM30) (lbs/VMT)		1.82588	4.25558																					
Ext(PM2.5) (lbs/VMT)		0.07408	0.19388																					
Ext(PM10) (lbs/VMT)		0.36179	0.78891																					
MHDR	Ext(PM30) (lbs/VMT)	1.50885	3.94853																					
	Window product shipping	0.041667	0.041667	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Raw material drop off	0.041667	0.041667																					
	title																							
	title																							
PTE	MHDR	0.083333	0.083333	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PTE PM2.5 (lb/hr)	0.006851	0.017409																					
	PTE PM10 (lb/hr)	0.027098	0.070926																					
	PTE PM30 (lb/hr)	0.13549	0.354832																					
	PTE PM2.5 (lb/hr) w/ rain	0.008173	0.016157																					
	PTE PM10 (lb/hr) w/ rain	0.025149	0.065826																					
	PTE PM30 (lb/hr) w/ rain	0.125746	0.329128																					
	PTE PM2.5 (tones/yr)	0.018273	0.047828																					
	PTE PM10 (tones/yr)	0.074445	0.194853																					
	PTE PM30 (tones/yr)	0.372224	0.974265																					
PTE	PTE PM2.5 (tones/yr) w/ rain	0.018959	0.044388																					
	PTE PM10 (tones/yr) w/ rain	0.069091	0.18084																					
	PTE PM30 (tones/yr) w/ rain	0.345455	0.904198																					

composite PM2.5 EF
0.001400607 lb/ton
monthly maximum PM2.5
0.005112214 lb/ton

PTE (tpy) based on no rain
0.0651 PM2.5
0.27 PM10
1.35 PM

0.288111
1.173787
5.689837

PTE (tpy) with rain
0.0613 PM2.5
0.2489 PM10
1.2487 PM

Haul Road ID No.	FIR1	HR2	8750	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
W (tons)	14.60	37.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
sL (g/m ²)	12	12																				
P	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
N	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365
E(PM _{2.5})(lbs/VMT)	0.0798	0.2089																				
E(PM ₁₀)(lbs/VMT)	0.3252	0.8511																				
E(PM _{2.5})(lbs/VMT)	1.6259	4.2556																				
Ext(PM _{2.5})(lbs/VMT)	0.0741	0.1939	AP-42 Table 8.12-3																			
Ext(PM ₁₀)(lbs/VMT)	0.3018	0.7899																				
Ext(PM _{2.5})(lbs/VMT)	1.5089	3.9495																				

MHDR = $2 * D * R / (U * L)$ where:
 MHDR = maximum hourly design rate (VMT/hr)
 D = one way length of haul road (miles)
 R = rate of material hauled (tons/hr)
 U = unloaded truck weight (tons)
 L = loaded truck weight (tons)

$E = k(aL)^{0.91} * (W)^{1.02}$ where:
 E = particulate emission factor (having units matching the units of k)
 k = particle size multiplier for particle size range and units of interest
 aL = road surface silt loading (grams per square meter) (g/m²)
 W = average weight (tons) of the vehicles traveling the road

Table 13.2.1-1 PARTICLE SIZE MULTIPLIERS FOR PAVED ROAD EQUATION

Particle Size	k (lb/VMT)
PM2.5	0.00054
PM10	0.0022
PM15	0.0027
PM30	0.011

$Ext = k(aL)^{0.91} * (W)^{1.02} / (1 - P/(4N))$ where:
 k, aL, W and S are as defined above and
 Ext = annual average emission factor in the same units as k
 P = number of "wet" days with at least 0.01 inch of precipitation during the averaging period
 N = number of days in the averaging period (365 for annual)

The equations retain the quality rating of A (D for PM2.5), if applied within the range of source conditions that were tested in Silt loading:

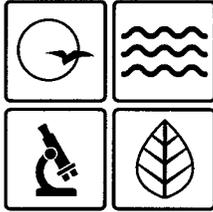
0.03-400 g/m²
 0.04-570 grains/square foot (ft²)

Mean vehicle weight:
 1.8-38 megagrams (Mg)
 2.0-42 tons

Mean vehicle speed:
 1-88 kilometers per hour (kph)
 1-55 miles per hour (mph)

The upper 95% confidence levels of equation 1 for PM10 is best described with equations using an exponent of 1.14 for silt

$E_{95\%} = k(aL)^{1.14} * (W)^{1.19}$
 E95%(PM_{2.5})(lbs/VMT): 0.2230 0.6851
 E95%(PM₁₀)(lbs/VMT): 0.9084 2.7912
 5.868936941



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

FEB 20 2018

Mr. Ken Witt
EHS Manager
WinTech - Cassville
P.O. Box 480
Monett, MO 65708

RE: New Source Review Permit - Project Number: 2017-04-032

Dear Mr. Witt:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix C 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, 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.

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.



Recycled paper

Mr. Ken Witt
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: Southwest Regional Office
PAMS File: 2017-04-032

Permit Number: **022018-005**