



**Statement of Basis**  
**Title V Air Quality Permit Renewal**  
**Trussbilt, LLC**  
**Huron, South Dakota**

**South Dakota**  
**Department of Environment and Natural Resources**

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## 1.0 Operational Description

### 1.1 Background

Trussbilt, LLC fabricates and finishes hollow metal security doors, frames, wall panels, ceiling panels, and furniture from hot and cold rolled steel at its facility in Huron, South Dakota. The operations at the facility include shearing, punching, forming, welding, grinding and sanding, washing, painting and shipping the finished product. The Primary Standard Industrial Classification (SIC) code is 3442 – Fabricated Structural Metal Products, Metal Doors, Sash, Frames, Molding, and Trim.

Trussbilt's air quality permit expires on August 23, 2016. Trussbilt submitted an application to renew the Title V air quality permit on December 10, 2015. Since Trussbilt submitted the renewal application in a timely manner, Trussbilt may continue to operate under the existing permit until the department completes its review. Table 1-1 provides a description of the units and process covered under Trussbilt's existing Title V permit.

*Table 1-1 – Description of Permitted Units, Operations, and Processes*

Unit	Description	Maximum Operating Rate	Control Device
#1	1990 Devilbiss paint booth consisting of two paint lines. The paint booth uses an airless air-assisted electrostatic spraying method.	Not applicable	Not applicable

Trussbilt operates the following miscellaneous equipment and processes that were considered exempt from permitting during the most recent permit renewal application review:

- 1974 Hydrotherm natural gas fired boiler, model J83DS, with four burners used to provide hot water. Each burner has a maximum design heat input capacity of 450,000 Btus per hour, for a total heat input capacity of 1.8 million Btus per hour;
- 1995 Jensen natural gas fired pre-heat oven, model JT-1083, with a maximum design heat input capacity of 1.5 million Btus per hour;
- Natural gas fired air make-up unit with a maximum design heat input capacity of 11 million Btus per hour;
- 1998 GAT natural gas fired cure oven with a maximum design heat input capacity of 1.4 million Btus per hour;
- 1998 GAT 3-stage washer with two natural gas fired burners used to heat water. One burner has a maximum heat input capacity of 2.8 million Btus per hour and the other burner has a maximum heat input capacity of 1.2 million Btus per hour;
- Electric M.I.G. Welders. Fumes from welding are filtered using a Torit Donaldson baghouse. The filtered air exhausts inside the building; and
- Belt sander. Emissions are collected using a 1984 Dust Hog dust collector. The filtered air exhausts inside the building.

## **2.0 New Source Performance Standards**

DENR reviewed the New Source Performance Standards (NSPS) in 40 CFR Part 60 and determined that none are applicable to Trussbilt's operations.

## **3.0 New Source Review**

The Administrative Rules of South Dakota (ARSD) 74:36:10:01 state that New Source Review (NSR) regulations apply to areas of the state which are designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. Trussbilt is located in Huron, South Dakota, which is in attainment or unclassifiable for all the pollutants regulated under the Clean Air Act. Therefore, Trussbilt is not subject to NSR review.

## **4.0 Prevention of Significant Deterioration**

A prevention of significant deterioration (PSD) review applies to new major stationary sources and major modifications to existing major stationary sources in areas designated as attainment under Section 107 of the Clean Air Act for any regulated air pollutant. The following is a list of regulated air pollutants under the PSD program:

1. Total suspended particulate (PM);
2. Particulate with a diameter less than or equal to 10 microns (PM10);
3. Particulate with a diameter less than or equal to 2.5 microns (PM2.5);
4. Sulfur dioxide (SO<sub>2</sub>);
5. Nitrogen oxides (NO<sub>x</sub>);
6. Carbon monoxide (CO);
7. Ozone – measured as volatile organic compounds (VOCs);
8. Lead;
9. Fluorides;
10. Sulfuric acid mist;
11. Hydrogen sulfide;
12. Reduced sulfur compounds;
13. Total reduced sulfur; and
14. Greenhouse gases (carbon dioxide, methane, nitrous oxide, etc.).

If the source is considered one of the 28 named PSD source categories listed in Section 169 of the federal Clean Air Act, the major source threshold is 100 tons per year of any regulated pollutant, except for greenhouse gases. The major source threshold for all other sources is 250 tons per year of any regulated pollutant, except for greenhouse gases.

On June 23, 2014, the Supreme Court of the United States issued a ruling that the EPA could not require facilities to obtain a Prevention of Significant Deterioration program permit based solely

on greenhouse gas emissions. The Supreme Court ruling states that in order for a Prevention of Significant Deterioration program evaluation for greenhouse gas to occur, a facility must trigger one of the major source thresholds for another regulated pollutant before greenhouse gas emissions can be considered under the Prevention of Significant Deterioration permitting program. This ruling applies to both new Prevention of Significant Deterioration program sources as well as major source modifications.

#### 4.1 Potential Emissions

The department uses stack test results to determine air emissions whenever stack test data are available from the source or a similar source. When stack test results are not available, the department relies on manufacturing data, material balance, EPA’s Compilation of Air Pollutant Emission Factors (AP-42, Fifth Edition, Volume 1), information submitted in the application, or other methods to determine potential air emissions. Potential emissions for each applicable pollutant are calculated by assuming the unit operates every day of the year at the maximum design capacity (8,760 hours per year).

##### Emission Factors

The potential volatile organic compound (VOC) emission rates from the paint booth will be estimated from the amount of primer, catalyst, paint, and solvent used and the number of hours the paint booth operates. The emission factors were derived from the material safety data sheets (MSDS) for the products used in the paint booth. Trussbilt stated in the application the paint booth operates 12 hours per day, 200 days per year (2,400 hour per year).

Uncontrolled potential emissions are those that would occur with no emission controls. Dry filter pads are used to collect particulate emissions; however, the filters do not collect volatile organic compound emissions. Therefore, uncontrolled and controlled VOC emissions are equal. The potential emissions are calculated assuming that the paint booth operates 24 hours a day, 365 days per year (8,760 hours per year). Therefore, the potential emissions for the paint booth will be calculated by multiplying the calculated emissions by the following ratio:

$$\text{Multiplying ratio} = \frac{8,760 \text{ potential operating hours / year}}{2,400 \text{ actual operating hours / year}} = 3.65$$

The potential VOC emission calculations for Unit #1 are given in Appendix A.

Emission factors for the miscellaneous natural gas-fired units are derived from AP-42, Tables 1.4-1 and 1.4-2, 7/98. The emission factors are given in Table 4.1

**Table 4.1 – Emission Factors for Miscellaneous Activities (lbs/MMscf)**

	TSP	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
<b>Boiler</b>	7.6	7.6	7.6	0.6	94	40	5.5
<b>Pre-heat oven</b>	7.6	7.6	7.6	0.6	94	40	5.5

<b>Air make-up</b>	7.6	7.6	7.6	0.6	94	40	5.5
<b>Cure oven</b>	7.6	7.6	7.6	0.6	94	40	5.5
<b>Parts washer</b>	7.6	7.6	7.6	0.6	94	40	5.5

The potential emissions are calculated using Equation 4-1 and the heat input for each unit, the emission factor from Table 4.1, a heat content of 1,020 million Btu per million standard cubic feet for natural gas, and 8,760 hours of operation per year.

**Equation 4-1 – Potential Emission Calculations for Natural Gas**

$$Potential\ Emissions\ \frac{tons}{yr} = \frac{Emission\ Factor\ \frac{lbs}{MMscf} \times Heat\ Input\ \frac{MMBtus}{hr} \times 8,760\ \frac{hrs}{yr}}{1,020\ \frac{MMBtus}{MMscf} \times 2,000\ \frac{lbs}{ton}}$$

**4.2 Potential Emissions Summary**

Trussbilt’s potential criteria pollutant emissions are summarized in Table 4.2.

**Table 4.2 – Potential Emissions Summary**

Unit	TSP/PM10/PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
#1	--	--	--	93.7	--
Boiler	0.1	0.0	0.7	0.3	0.0
Pre-heat oven	0.0	0.0	0.6	0.3	0.0
Air make-up	0.4	0.0	4.4	1.9	0.3
Cure oven	0.0	0.0	0.6	0.2	0.0
Parts washer	0.1	0.0	1.6	0.1	0.7
<b>Total</b>	<b>0.6</b>	<b>0.0</b>	<b>7.9</b>	<b>96.5</b>	<b>0.4</b>

**4.3 PSD Summary**

Trussbilt is not one of the 28 named PSD source categories; therefore, the major source threshold is 250 tons per year. Trussbilt’s potential emissions of any regulated air pollutant are less than 250 tons per year. Trussbilt is considered a minor source under the PSD program and is not subject to a PSD review.

## 5.0 National Emission Standards for Hazardous Air Pollutants

DENR reviewed the national emission standards for hazardous air pollutants under 40 CFR Part 61 and determined there are no applicable requirements associated with Trussbilt's operations.

## 6.0 Maximum Achievable Control Technology Standards

The federal Maximum Achievable Control Technology Standards are applicable to both major and area sources of hazardous air pollutants. A major source of hazardous air pollutants is defined as having the potential to emit 10 tons or more per year of a single hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants. An area source is a source that is not a major source of hazardous air pollutants.

DENR uses stack test results to determine air emissions whenever stack test data is available from the source or a similar source. When stack test results are not available, DENR relies on manufacturing data, material balance, EPA's Compilation of Air Pollutant Emission Factors (AP-42, Fifth Edition, Volume 1) document, information in the permit application, or other methods to determine potential air emissions.

### 6.1 Potential HAP Emissions

The potential HAP emissions from Unit #1 are calculated in Appendix A and summarized in Table 6.1.

*Table 6.1 – Potential HAP Emissions (tons/year)*

Unit	Xylene	Other HAPs	Total HAPs
#1	13.5	9.3	22.8

As shown in the table, Trussbilt's potential xylene emissions are greater than the major source threshold. Trussbilt has requested federally enforceable limits in the permit to limit hazardous air pollutants below the major source threshold. The enforceable limits allow Trussbilt to be considered a minor source for hazardous air pollutants.

### 6.2 National Emission Standards for Hazardous Air Pollutants (Part 63)

DENR reviewed the maximum achievable control technology (MACT) standards under 40 CFR Part 63 and determined the following may be applicable.

### 6.3 Standards for Surface Coating of Miscellaneous Metal Parts and Products – Subpart M MMM

Subpart M MMM National Emission Standards for Surface Coating of Miscellaneous Metal Parts and Products is applicable to new, reconstructed, or existing affected sources that use 946 liters

(250 gallons) per year, or more, of coatings that contain hazardous air pollutants in the surface coating of miscellaneous metal parts and products and that is a major source, is located at a major source, or is part of a major source of HAP emissions. The affected source is the collection of the following items:

1. All coating operations. A coating operation means equipment used to apply cleaning materials to a substrate to prepare it for coating application (surface preparation) or to remove dried coating; to apply coating to a substrate (coating application) and to dry or cure the coating after application; or to clean coating operation equipment (equipment cleaning);
2. All storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed;
3. All manual and automated equipment and containers used for conveying coatings, thinners, and/or other additives, and cleaning materials; and
4. All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

Trussbilt's potential emissions of a single hazardous air pollutant (xylene) are greater than 10 tons per year. Trussbilt requested federally enforceable conditions in the permit to limit hazardous air pollutant emissions below the major source threshold. Therefore, this subpart is not applicable to Trussbilt's operations.

#### **6.4 Standards for Paint Stripping and Miscellaneous Surface Coating Operations – Subpart HHHHHH**

The National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources are applicable to area sources involved in the following:

1. Paint stripping operations that involve the use of chemical strippers that contain methylene chloride in paint removal processes;
2. Autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations;
3. Spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAPs, to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment.

Trussbilt does not use any coatings containing the target HAPs. Therefore, this subpart is not applicable to Trussbilt.

#### **6.5 Standards for Nine Metal Fabrication and Finishing Source Categories – Subpart XXXXXX**

DENR reviewed the national emission standards and determined that Trussbilt may be applicable

to 40 CFR Part 63, Subpart XXXXXX. The provisions of this subpart are applicable to an area source that is primarily engaged in the operations in one of the following nine source categories:

1. Electrical and Electronic Equipment Finishing Operations (NAICS codes 335999 and 335312);
2. Fabricated Metal Products (NAICS codes 332117 and 332999);
3. Fabricated Plate Work (Boiler Shops) (NAICS codes 332313, 332410, and 332420);
4. Fabricated Structural Metal Manufacturing (NAICS code 332312);
5. Heating Equipment, except Electric ((NAICS code 333414);
6. Industrial Machinery and Equipment Finishing Operations (NAICS codes 333120, 333132 and 333911);
7. Iron and Steel Forging (NAICS code 332111);
8. Primary Metal products Manufacturing (NAICS code 332618); and
9. Valves and Pipe Fittings (NAICS code 332919).

Trussbilt has a Standard Industrial Classification code of 3442 and a North American Industry Classification System (NAICS) code of 332321. Trussbilt is not one of the nine operations applicable to this subpart. Therefore, Trussbilt is not applicable to this subpart.

## **7.0 State Requirements**

Any source operating in South Dakota that meets the requirements of the Administrative Rules of South Dakota (ARSD) 74:36:05:03 is required to obtain a Title V air quality operating permit. A major source is defined as having the potential to emit greater than 100 tons per year of a criteria pollutant or greater than or equal to 10 tons per year of a single hazardous air pollutant, or greater than or equal to 25 tons per year of a combination of hazardous air pollutants. A source that is required to comply with a federal new source performance standard or national emission standard for hazardous air pollutants is required to obtain a Title V air quality permit.

Based on the permit review, Trussbilt's potential VOC emissions are slightly below the major source threshold of 100 tons per year. In previous permit reviews, the potential VOC emissions were greater than 100 tons. Trussbilt's potential emissions of a single hazardous air pollutant are greater than 10 tons per year. However, Trussbilt accepted federally enforceable limits in the permit to keep hazardous air pollutant emissions below the major source thresholds. DENR will recommend that Trussbilt maintain the Title V air quality operating permit until it is determined whether the potential VOC emissions calculated in this permit review will be representative of Trussbilt's future operations.

### **7.1 Insignificant Activities**

The following units each have a heat input capacity less than 3.5 million Btus per hour. In accordance with the Administrative Rules of South Dakota (ARSD) 74:36:05:04.01(4), a device

or apparatus that has a heat input capability of not more than 3,500,000 Btus per hour is considered an insignificant activity and is exempt from permitting.

- 1974 Hydrotherm natural gas fired boiler, model J83DS, with four burners used to provide hot water. Each burner has a maximum design heat input capacity of 450,000 Btus per hour, for a total heat input capacity of 1.8 million Btus per hour;
- 1995 Jensen natural gas fired pre-heat oven, model JT-1083, with a maximum design heat input capacity of 1.5 million Btus per hour; and
- 1998 GAT natural gas fired cure oven with a maximum design heat input capacity of 1.4 million Btus per hour.

The following unit has a potential to emit less than two tons per year of any criteria pollutant. In accordance with ARSD 74:36:05:04.01(7), a unit that has the potential to emit two tons or less per year of any criteria pollutant before the application of control equipment is considered an insignificant activity and exempt from permitting.

- 1998 GAT 3-stage washer with two natural gas fired burners used to heat water. One burner has a maximum heat input capacity of 2.8 million Btus per hour and the other burner has a maximum heat input capacity of 1.2 million Btus per hour.

The following units exhaust inside the building. Since there are no emissions to the outside ambient air, the units are exempt from coverage under the permit.

- Natural gas fired air make-up unit with a maximum design heat input capacity of 11 million Btus per hour. The unit is used only in the winter to provide space heating;
- Electric M.I.G. Welders. Fumes from welding are filtered using a Torit Donaldson baghouse. The filtered air exhausts inside the building; and
- Belt sander. Emissions are collected using a 1984 Dust Hog dust collector. The filtered air exhausts inside the building.

## **7.2 State Emission Limits**

South Dakota has air emission limits for particulate, sulfur dioxide, and opacity. The emission limit for particulate is based on total suspended particulate. Trussbilt does not operate any processes that are subject to the state's particulate or sulfur dioxide emission limits. However, the state of South Dakota has opacity requirements. In accordance with ARSD 74:36:12:01, a facility may not discharge into the ambient air from a single unit of emissions an air pollutant of a density equal to or greater than that designated as 20 percent opacity.

## **7.3 Compliance Assurance Monitoring**

Compliance assurance monitoring is applicable to permit applications received on or after April 20, 1998, from major sources applying for a Title V air quality operating permit. Compliance assurance monitoring is applicable to any unit that meets the following criteria:

1. The unit is subject to an emission limit or standard for the applicable regulated air pollutant;
2. The unit uses a control device to achieve compliance with any such emission limit or standard; and
3. The unit has potential uncontrolled emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

Trussbilt submitted the renewal application after April 20, 1998. Unit #1 does not use a control device to achieve compliance with any emission limit or standard. Therefore, compliance assurance monitoring is not applicable to Trussbilt.

#### **7.4 Periodic Monitoring**

Periodic monitoring is required for each emission unit that is subject to an applicable requirement at a source subject to Title V of the Federal Clean Air Act. Units that are subject to opacity limits are typically based on periodic visible emission readings. However, in the case of painting operations, historical opacity readings indicate that periodic visible emission readings are not required.

#### **7.5 Air Fees**

Title V sources are subject to an annual air quality fee. The fee consists of an administrative fee and a per ton fee based on the actual tons per year of pollutant emitted. The pollutants that are charged for include particulate matter, sulfur dioxides, nitrogen oxides, volatile organic compounds, and hazardous air pollutants. The actual emissions are calculated by the department and are based on information provided by the source.

#### **7.6 Summary of Applicable Requirements**

DENR recommends that Trussbilt maintain the Title V air quality operating permit, until it is determined whether Trussbilt's potential VOC emissions remain below 100 tons per year. Therefore, Trussbilt will be required to operate within the requirements stipulated in the following regulations:

- ARSD 74:36:05 - Operating Permits for Part 70 Sources;
- ARSD 74:36:06 - Regulated Air Pollutant Emissions;
- ARSD 74:36:11 - Performance Testing;
- ARSD 74:36:12 - Control of Visible Emissions; and
- ARSD 74:37:01 - Air Emission Fees.

## **8.0 Recommendation**

Based on the information submitted in the air quality permit renewal application, the department recommends conditional approval of a Title V air quality permit. Questions regarding this permit review should be directed to Marlys Heidt, Engineer III.

# **APPENDIX A**

**Unit #1 - Devil Bliss Paint Booth**

Product	VOC Content (pounds per gallon)	HAP Component	HAP Content (weight %)	Density of Product (pounds per gallon)	Gallons of Product Used	Actual emissions tons per year	Multipling Ratio	Potential emissions -- 8760 hours per year (tons per year)
Prime Coat PC-105 (Part A)	6.00			12.5	4,100	12.30	3.65	44.90
		xylene	5			1.28		4.68
		ethyl benzene	2			0.51		1.87
Prime Coat PC-105 (Part B)	5.26			11.18	4,000	10.52	3.65	38.40
		ethyl benzene	4			0.89		3.26
		xylene	9			2.01		7.35
Diamond Vogel Epoxyester (PL05)	3.40			12.34	50	0.09	3.65	0.31
		ethyl benzene	1			0.00		0.01
		xylene	5.0			0.02		0.06
Diamond Vogel Epoxyester (NLX11)	4.7					0.16	3.65	0.60
		xylene	30			0.10		0.37
		toluene	10	9.55	70	0.03		0.12
		ethyl benzene	7			0.02		0.09
		methyl isobutyl ketone	7			0.02		0.09
		n-butanol	5			0.02		0.06
1501 SS Solvent	7.09			7.09	385	1.36	3.65	4.98
		methanol	29			0.40		1.44
		toluene	19			0.26		0.95
Barsol A-1151	6.98			6.98	220	0.77	3.65	2.80
		xylene	40			0.31		1.12
		ethyl benzene	10			0.08		0.28
Barsol CBX-5495	4.18			6.82	220	0.46	3.65	1.68
		methanol	10			0.08		0.27
		toluene	30			0.23		0.82

**VOC and HAP Emissions Summary  
tons per year**

	Actual emissions, tons per year	Potential emissions, tons per year
Total volatile organic compounds	25.7	93.7
Hazardous air pollutants		
toluene	0.5	1.9
xylene	3.7	13.5
methyl isobutyl ketone	0.0	0.1
ethylbenzene	1.5	5.5
methanol	0.5	1.7
n-butanol	0.0	0.1
Total hazardous air pollutants	6.2	22.8