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AIR 047 00148

STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY
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AIR QUALITY CONSTRUCTION PERMIT

PERMIT NUMBER: CP12-044

Facility Name: Orthman Manufacturing Inc.

NDEQ Facility ID#: 100649

Mailing Address:
75765 Road 435
Lexington, Nebraska 68550

Facility Location:
620 East Frontier Street
Lexington, Nebraska 68550

Project Description: Construction of a new farm machinery and equipment manufacturing facility

Standard Industrial Classification (SIC) Code: 3523, Farm Machinery and Equipment

Revised or Superseded Construction Permits: none

Pursuant to Chapter 14 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This construction permit approves the proposed project as identified in the air quality construction permit application #12-044 received October 1, 2012, including any supporting information received prior to issuance of this permit. Additional details of the proposed project, including estimated pollutant emissions caused by the project, can be found in the accompanying Fact Sheet.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. The permit holder, owner, and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The undersigned issues this permit on behalf of the Director under the authority of Title 129 – Nebraska Air Quality Regulations as amended December 22, 2012.

5/2/13
Date

Shelley Schneider
Shelley Schneider, Air Administrator
Air Quality Division

TABLE OF CONTENTS

ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources
BACT	Best Available Control Technology
bhp	Brake Horsepower
BMP	Best Management Practice
Btu	British Thermal Unit
bu	Bushel
CAA	Clean Air Act
CE	Control Equipment
CEM	Continuous Emissions Monitor
CEMS	Continuous Emissions Monitoring System
cf	Cubic feet
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CP	Construction Permit
DGS	Distiller's Grains with Solubles
DDGS	Dry Distillers Grains with Solubles
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EMIS	Emergency Management Information System
EPA	Environmental Protection Agency
EQC	Environmental Quality Council
EP	Emission Point
ESP	Electrostatic Precipitator
EU	Emission Unit
FID	Facility Identification Number
FDCP	Fugitive Dust Control Plan
FGR	Flue Gas Recirculation
FIP	Federal Implementation Plan
FR	Federal Register
ft	Feet
FTIR	Fourier Transform Infrared
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
hp	Horsepower
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
LNB	Low-NO_x Burner
MACT	Maximum Achievable Control Technology
Mgal	One Thousand gallons
MMBtu	One Million British Thermal Units
MMscf	One Million Standard Cubic Feet
MSDS	Material Safety Data Sheet
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NDEQ	Nebraska Department of Environmental Quality
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
PAL	Plant-wide Applicability Limit
Pb	Lead (chemical abbreviation)
PbR	Permit-by-Rule
PEMS	Parametric Emissions Monitoring System
PM	Particulate Matter
PM_{10}	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
$PM_{2.5}$	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million by volume
ppmvd	Parts per Million by volume, dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RVP	Reid Vapor Pressure
RATA	Relative Accuracy Test Audit
RMP	Risk Management Plan
RTO	Regenerative Thermal Oxidizer
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
TDS	Total Dissolved Solids
TO	Thermal Oxidizer
TO/HRSG	Thermal Oxidizer with Heat Recovery Steam Generator
tpy	Tons per year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate Matter
ULNB	Ultra Low-NO_x Burner
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VHAP	Volatile Hazardous Air Pollutant
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WDGS	Wet Distiller's Grains with Solubles

I. GENERAL CONDITIONS

(A) This permit is not transferable to another source or location. {Chapter 17}

(B) Holding of this permit does not relieve the owner or operator of the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action or permit revocation. {Chapter 41 and Chapter 17, Section 011}

(C) Application for review of plans or advice furnished by the Director will not relieve the owner or operator of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations. {Chapter 37}

(D) Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. If the owner or operator wishes to make changes at the source that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the owner or operator and reviewed by the NDEQ in issuance of this permit), the owner or operator must receive approval from the NDEQ before the change(s) can be made. In addition, any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such as changes in stack parameters or increases in emission rates, potential emissions, or actual emissions) shall have prior approval from the NDEQ. The owner or operator shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling and ambient air quality studies. {Chapter 17, Sections 006, 007, and 008}

(E) Approval to construct, reconstruct and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable period of time. {Chapter 17, Section 012}

(F) The owner or operator shall allow the NDEQ, EPA or an authorized representative, upon presentation of credentials to: {Neb. Rev. Statute §81-1504}

(1) Enter upon the owner or operator's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted or records are kept, for the purpose of ensuring compliance with the permit or applicable requirements;

(2) Have access to and copy, at reasonable times, any records, for the purpose of ensuring compliance with the permit or applicable requirements;

(3) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations, for the purpose of ensuring compliance with the permit or applicable requirements;

(4) Sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

(G) When requested by the NDEQ, the owner or operator shall submit completed emission inventory forms for the preceding year to the NDEQ by March 31 of each year. {Chapter 6}

(H) Open fires are prohibited except as allowed by Chapter 30.

(I) Particulate Matter – General Requirements: {Chapter 32}

(1) The owner or operator shall not cause or permit the handling, transporting or storage of any material in a manner, which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.

(2) The owner or operator shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.

(J) If and when the Director declares an air pollution episode as defined in Chapter 38, Section 003.01B, 003.01C, or 003.01D, the owner or operator shall immediately take all required actions listed in Title 129, Appendix I until the Director declares the air pollution episode terminated.

(K) This permit may be revised (reopened and reissued) or revoked for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. Conditions under which this permit will be revised or revoked for cause, include but are not limited to: {Chapter 15, Section 006}

(1) A determination by the Director, or the Administrator of EPA that:

(a) the permit must be revised to ensure compliance with the applicable requirements;

(b) the permit contains a material mistake or that inaccurate statements were made in the emissions standards or other terms or conditions of the permit.

(2) The existence at the source of unresolved noncompliance with applicable requirements or a term or condition of the permit, and refusal of the owner or operator to agree to an enforceable schedule of compliance to resolve the noncompliance;

(3) The submittal by the owner or operator of false, incomplete, or misleading information to the NDEQ or EPA;

(4) A determination by the Director that the source or activity endangers human health or the environment and that the danger cannot be removed by a revision of the permit; or

(5) The failure of the owner or operator to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of the EPA.

II. SPECIFIC CONDITIONS

(A) The owner/operator of the source shall provide the following notifications to the NDEQ:

(1) The date construction, reconstruction or modification commenced as defined in Chapter 1. Notification shall be postmarked no later than 30 days after such date and include a summary description and whether the requirement to commence construction was met through: {Chapter 17, Section 012}

(a) Initiating physical on-site construction activities of a permanent nature that meet the definition of "begin actual construction", or

(b) Entering into binding agreements or contractual obligations. If this option is used, the notice shall also include a brief summary of each binding agreement or contractual obligation entered into, the date of the agreement or contract, and why it cannot be cancelled or modified without substantial loss to the owner or operator.

(2) The date on which the source or modification first becomes operational postmarked within 15 days after such date. {Chapter 7, Section 002.03}

(B) Recordkeeping: Records of all measurements, results, inspections, and observations as required to ensure compliance with all applicable requirements shall be maintained on-site as follows:

(1) All calculations and records required throughout this permit shall be completed no later than the fifteenth (15^{th}) day of each calendar month and shall include all information through the previous calendar month, unless otherwise specified in this permit.

(2) All records required throughout this permit shall be kept for a minimum of five years and shall be clear and readily accessible to NDEQ representatives, unless otherwise specified in this permit.

(3) Copies of all notifications, reports, test results, and plans.

(4) Calibration records for all operating parameter monitoring equipment.

(5) Operation and Maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission units, required control equipment, and required monitoring equipment shall be kept for the life of the equipment.

(6) Records documenting equipment failures, malfunctions, or other variations, including date and time of occurrence, remedial action taken, and when corrections were made to each piece of permitted equipment, required control equipment, and required monitoring equipment.

(C) All permitted emission units, control equipment, and monitoring equipment shall be properly installed, operated, and maintained. {Chapter 34, Section 006 and Chapter 35 Sections 006.02 and 006.05}

(D) When performance testing is required it shall be completed and submitted to the NDEQ as follows: {Chapter 34}

(1) Performance tests shall be conducted while operating at maximum capacity (operating conditions producing the highest emissions or loading to the control device) within sixty (60) days after first reaching the maximum capacity, but not more than 180 days after the start-up of operations of each unit, unless otherwise specified by the NDEQ.

(2) Testing shall be conducted according to the methodologies found in Title 129, Chapter 34, Section 002, or other NDEQ approved methodologies.

(3) Performance tests shall be conducted for a minimum of three (3) one hour runs unless another run time is specified by the applicable Subpart or as deemed appropriate by the NDEQ.

(4) The owner or operator of a source shall provide the NDEQ at least thirty (30) days written notice prior to testing to afford the NDEQ an opportunity to have an observer present. The owner or operator shall also provide the NDEQ with an emissions testing protocol at least thirty (30) days prior to testing.

(5) The owner or operator shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.

(6) A written copy of the test results signed by the person conducting the test shall be provided to the NDEQ within forty-five (45) days of completion of the test and will, at a minimum, contain the following items:

(a) A description of the source's operating parameters (i.e. production rates, firing rates of combustion equipment, fuel usage, etc.), control equipment parameters (i.e. baghouse fan speeds, scrubber liquid flow rates, etc.), and ambient conditions (i.e. weather conditions, etc.) during testing.

(b) Copies of all data sheets from the test run(s).

(c) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.

(d) A final conclusion section describing the outcome of the testing.

(E) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limits shall be reported to the NDEQ in accordance with Chapter 35, Section 005.

(F) At no time during any period of twelve (12) consecutive calendar months, and at no time during the first eleven (11) months after start-up, shall the total emissions from the source equal or exceed the following emission limits: {Title 129, Chapters 17, 27, and 28}

(1) 100.0 tons of VOCs

(2) 10.0 tons of any individual HAP

(3) 25.0 tons of total combined HAPs

(G) Compliance with the emissions limitations in permit condition II.(F) shall be demonstrated by performing emission calculations every month and every period of twelve (12) consecutive months using the calculation methodology in Sections IV and V.

(1) If testing is required, the emission factors and pound per hour (lb/hr) emission rates presented in Section IV and V shall be replaced with data obtained from the most current, approved emissions test conducted in accordance with Specific Condition II.(D).

(2) The MSDS for all VOC and HAP-containing materials used during the preceding period of (12) consecutive calendar months shall be kept on record.

(3) The permittee shall keep appropriate records to support the emission calculations including, but not limited to, actual material throughput rates, the amount of natural gas purchased/consumed, the quantity of each coating applied.

III.(A) Specific Conditions for Fabrication

(1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID#	Emission Unit Description
EP-17	CE-21-1 through CE-21-7: Air Cleaners	EU-17-1 through EU-17-4: Robotic MIG Gas Welders (x4)
		EU-18-1 through EU-18-34: Handheld MIG Gas Welders (x34)

(2) Emission Limitations and Testing Requirements:

The emissions limitations of Title 129 Chapter 20, Sections 001 and 004 apply to the emission point identified in Condition III.(B)(1).

(3) Operational and Monitoring Requirements and Limitations

(a) Emissions from the emission units identified in Condition III.(B)(1) shall be controlled by pollution control equipment as specified in Condition III.(B)(1). {Chapters 17 and 27}

(b) Operation and maintenance of each Air Cleaner shall be in accordance with the following requirements: {Chapters 17 and 27}

(i) The air cleaner systems shall be operated whenever the associated emission units are in operation.

(ii) Each air cleaner system shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated filter is operating.

(iii) Air cleaner system filters are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of filter failure.

(iv) Observations at least once each day during daylight hours of each air cleaner system operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.

(v) The owner or operator shall maintain an on-site inventory of spare filters of each type used to ensure rapid replacement in the event of filter failure.

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The NDEQ has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in Condition III.(A)(1).

(5) Reporting and Recordkeeping Requirements:

(a) Records documenting the date, time, and pressure differential reading for each day the associated air cleaner system is in operation.

(b) Filter replacement records including the date the filter replacement occurred and the type of filter installed.

(c) Records documenting the date, time, observations, and corrective actions taken for each day the associated air cleaner system is in operation.

III.(B) Specific Conditions for Surface Coating Operations

(1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID#	Emission Unit Description
EP-19	CE-19: Overspray Arrestor and Cartridge Filter	EU-19: Prime Coat Booth
EP-20	CE-20: Overspray Arrestor and Cartridge Filter	EU-20: Top Coat Booth

(2) Emission Limitations and Testing Requirements:

The emissions limitations of Title 129 Chapter 20, Sections 001 and 004 apply to the emission points identified in Condition III.(B)(1).

(3) Operational and Monitoring Requirements and Limitations:

(a) Emissions from the emission units identified in Condition III.(B)(1) shall be controlled by pollution control equipment as specified in Condition III.(B)(1). {Chapters 17, 20, and 27}

(i) All surface coating operations shall occur in the coating booths specified in condition III.(B)(1). {Chapters 17, 20, and 27}

(b) The following HAP BACT conditions apply to the emissions units EU-19 and EU-20. {Chapter 27}

(i) Coatings, as applied, shall contain less than 2.5 lbs of total HAP per gallon.

(ii) Coatings, as applied, shall contain less than 26 percent by weight total HAP.

(c) Operation and maintenance of each cartridge filter shall be in accordance with the following requirements: {Chapters 17 and 20}

(i) Each cartridge filter shall be operated and be controlling emissions at all times when the associated emission units are in operation.

(ii) Each cartridge filter shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated filter is operating.

(iii) Cartridge filters are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of cartridge failure.

(iv) Observations at least once each day during daylight hours of cartridge filter operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.

(v) The owner or operator shall maintain an on-site inventory of spare cartridges of each type used to ensure rapid replacement in the event of cartridge failure.

(4) Applicable NSPS, NESHAP, and MACT Standards:

The NDEQ has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in Condition III.(B)(1).

(5) Reporting and Recordkeeping Requirements:

(a) Records documenting the date, time, and pressure differential reading for each day the associated cartridge filter is in operation.

(b) Filter replacement records including the date the filter replacement occurred and the type of filter installed.

(c) Records documenting the date, time, observations, and corrective actions taken for each day the associated filter is in operation.

(d) Material Safety Data Sheets (MSDS) or equivalent, for each coating applied.

(e) Records documenting the HAP content (in lbs/gallon and % by weight) of each coating as applied.

IV. VOC Emission Calculation Methodology

To demonstrate compliance with Specific Condition II.(G), emissions shall be calculated each calendar month using data from the following sources listed in descending order of preference.

a. Most recent, valid performance test results performed within the past five years
b. Manufacturer's guarantees and Material Safety Data Sheet (MSDS)
c. Manufacturer/engineering estimates
d. Emission factors from AP-42 or other EPA published documents

Emission factors and pound per hour (lb/hr) emission rates presented in this section shall be replaced with data obtained from the most current, approved emissions test conducted in accordance with Specific Condition II.(D).

If it is necessary to convert uncontrolled to controlled emissions, multiply the uncontrolled emissions by one minus the overall control efficiency (fraction) of the control equipment. When emission unit or control equipment operating parameter(s) are not maintained at levels recorded during the most recent performance test, uncontrolled emission factors shall be used.

Additional individual HAPs not specifically addressed in this calculation method that are found to be emitted from the emission points listed below must be incorporated into the facility-wide HAP calculation.

Natural Gas Combustion

Emissions from the combustion of Natural gas shall each be calculated using Equation (1).

(1) $E_{NG} = (EF) \times (NG_U) \ / (2{,}000 \text{ lbs/ton})$

Where
E_{NG} = Emissions from natural gas combustion (tons/month)
EF = Emission factor (lbs/MMscf) = 5.5 (AP-42 Emission Factor)
NG_U = Natural Gas Usage of Unit (MMscf/month)

Surface Coating Operations

Emissions from surface coating shall each be calculated using Equation (2).
Emissions shall be calculated by assuming that all VOCs used are emitted.

(2) $E_v = \sum_{j=1}^{n}(v_j c_j) \ / (2000 \text{ lbs/ton})$

E_v = Total emissions (tons /month) of VOCs, "*i*," from "*n*" products used at the facility each calendar month;
n = Total number of VOC-containing products used at the facility each calendar month;
v_j = Volume (gallons) or weight (pounds) of each VOC-containing product, "*j*," used at the facility each calendar month; and
c_j = Concentration (pounds of VOC per gallon of product) or weight fraction (pounds of VOC per pound of product) of HAP "*i*" in product "*j*" used at the facility each calendar month.

The VOC content and the density or specific gravity of the products shall be obtained from the manufacturer and/or suppliers including Material Safety Data Sheets (MSDS). If the data obtained gives a range for the VOC content, the maximum value from the range shall be used when determining emissions. If it is necessary to convert volume to weight, multiply the volume (gallons) of the product used by the density (pounds/gallon) of the product. If specific gravity is given, multiply the specific gravity by 8.34 lb/ gallon (the density of water) to obtain the density of the product.

Facility-Wide Emissions

All combined VOCs used at the facility shall be calculated each calendar month using equation (3)

(3) $E_T = E_i + E_{NG}$

E_T = Total emissions (tons/month) of all VOCs combined used at the facility each calendar month
E_i = Total emissions (tons/month) of VOCs from surface coating operations.
E_{NG} = Total emissions (tons/month) of VOCs from natural gas combustion.

V. HAP Emission Calculation Methodology

To demonstrate compliance with Specific Condition II.(G), emissions shall be calculated each calendar month using data from the following sources listed in descending order of preference. For compliance purposes, total HAP is equivalent to the sum of individual HAPs.

e. Most recent, valid performance test results performed within the past five years
f. Manufacturer's guarantees and Material Safety Data Sheet (MSDS)
g. Manufacturer/engineering estimates
h. Emission factors from AP-42 or other EPA published documents

Emission factors and pound per hour (lb/hr) emission rates presented in this section shall be replaced with data obtained from the most current, approved emissions test conducted in accordance with Specific Condition II.(D).

If it is necessary to convert uncontrolled to controlled emissions, multiply the uncontrolled emissions by one minus the overall control efficiency (fraction) of the control equipment. When emission unit or control equipment operating parameter(s) are not maintained at levels recorded during the most recent performance test, uncontrolled emission factors shall be used.

Additional individual HAPs not specifically addressed in this calculation method that are found to be emitted from the emission points listed below must be incorporated into the facility-wide HAP calculation.

Natural Gas Combustion

Emissions from the combustion of Natural gas shall each be calculated using Equation (1).

(1) $E_{NG} = (EF) \times (NG_U) \ / (2{,}000 \text{ lbs/ton})$

Where E_{NG} = Emissions from natural gas combustion (tons/month)
EF = Emission factor (lbs/MMscf)
NG_U = Natural Gas Usage of Unit (MMscf/month)

Pollutant	Emission Factor (lb/MMscf)
Individual HAPs	
Benzene	0.0021
Dichlorobenzene	0.0012
Formaldehyde	0.075
Hexane	1.8
Lead Compounds	0.0005
Naphthalene	0.00061
Polycyclic Organic Matter (POM)	0.0000882
Toluene	0.0034
Arsenic Compounds (ASC)	0.0002
Beryllium Compounds (BEC)	0.000012
Cadmium Compounds (CDC)	0.0011
Chromium Compounds (CRC)	0.0014
Cobalt Compounds (COC)	0.000084
Manganese Compounds (MNC)	0.00038

Pollutant	Emission Factor (lb/MMscf)
Mercury Compounds (HGC)	0.00026
Nickel Compounds (NIC)	0.0021
Selenium Compounds (SEC)	0.000024
Total HAPs	1.89

Welding Operations: Gas Metal Arc Welding

Emissions from the welding operations shall each be calculated using Equation (2).

(2) $E_W = (EF) \times (W) \times (1\text{-}CE) / (2{,}000 \text{ lbs/ton})$

E_W = Emissions from gas metal arc welding (tons/month)
EF = Emission Factor (lb/lb electrode consumed)
W = Amount of electrode consumed (lb electrode/month)
CE = Control Efficiency (45% for Gas Metal Arc Welding)

Hazardous Air Pollutant	Welding Emission Factors	
Chromium Compounds (CRC)	0.000524	lb/lb electrode
Cobalt Compounds (COC)	0.000001	lb/lb electrode
Manganese Compounds (MNC)	0.000346	lb/lb electrode
Nickel Compounds (NIC)	0.000184	lb/lb electrode
Total HAP	0.001055	lb/lb electrode

Surface Coating Operations

Emissions from surface coating shall each be calculated using Equation (3).
Emissions shall be calculated by assuming that all HAPs used are emitted.

(3) $E_i = \sum_{j=1}^{n} (v_j c_{ji}) \ / \ (2000 \text{ lbs/ton})$

E_i = Total emissions (tons /month) of an individual HAP, "*i*," from "*n*" products used at the facility each calendar month;
n = Total number of HAP-containing products used at the facility each calendar month;
V_j = Volume (gallons) or weight (pounds) of each HAP-containing product, "*j*," used at the facility each calendar month; and
c_{ji} = Concentration (pounds of HAP per gallon of product) or weight fraction (pounds of HAP per pound of product) of HAP "*i*" in product "*j*" used at the facility each calendar month.

The HAP content and the density or specific gravity of the products shall be obtained from the manufacturer and/or suppliers including Material Safety Data Sheets (MSDS). If the data obtained gives a range for the HAP content, the maximum value from the range shall be used when determining emissions. If it is necessary to convert volume to weight, multiply the volume (gallons) of the product used by the density (pounds/gallon) of the product. If specific gravity is given, multiply the specific gravity by 8.34 lb/ gallon (the density of water) to obtain the density of the product.

Facility-Wide Emissions

All combined HAPs used at the facility shall be calculated each calendar month using equation (4)

(4) $$E_T = \sum_{i=1}^{m}(E_i)$$

E_T = Total emissions (pounds/month) of all HAPs combined used at the facility each calendar month

m = Total number of individual HAPs contained in the products used at the facility each calendar month; and

E_i = Total emissions (pounds/month) of an individual HAP, "*i*," from all products used or operations that occurred at the facility each month.

AIR EMISSION PERMIT NO. 16900092-001
Total Facility Operating Permit

IS ISSUED TO

Acuity Brands Lighting Inc

WINONA LIGHTING INC
3760 West Fourth Street
Winona, Winona County, MN 55987

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the Permit Applications Table.

This permit authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: State Permit; Limits to Avoid Part 70/Limits to Avoid NSR;
Operating Permit Issue Date: September 30, 2013
Expiration Date: Non-Expiring – All Title I Conditions do not expire.

for Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for John Linc Stine
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	August 31, 2012	001
Supplemental Information	July 18, 2013	001

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000 to 7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Winona Lighting manufactures specialized decorative electrical lighting fixtures. The emissions sources at the facility include: spray paint booths, a solvent degreaser, aqueous cleaners, welding and soldering operations, metal grinding and buffing, abrasive blasting, incidental woodworking, and small natural gas combustion units. The main emissions from the facility are volatile organic compounds (VOC) and particulate matter emissions from the spray paint booths. The facility uses particulate matter control devices to control emissions from the spray booths and abrasive blasting operations. The facility has accepted limits on VOCs and particulate matter such that it avoids major source status under the Prevention of Significant Deterioration and Part 70. The facility has also accepted limits on single and combined Hazardous Air Pollutants to avoid major source status under the Part 70 and National Emission Standards for Hazardous Air Pollutant programs.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Winona Lighting Inc

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Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: **Total Facility**

What to do	Why to do it
SOURCE-SPECIFIC REQUIREMENTS	hdr
Permit Appendices: This permit contains 3 appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subps. 14 and 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017

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Performance Test Notifications and Submittals: Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3

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Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 - 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 - 7019.3100
Emission Fees: due 30 days after receipt of an MPCA bill.	Minn. R. 7002.0005 - 7002.0095

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Subject Item: **GP 001 Combustion Equipment**

Associated Items:
EU 001 Space Heater UH-1
EU 002 Space Heater UH-2
EU 003 Space Heater UH-3
EU 004 Space Heater UH-4
EU 005 Space Heater UH-5
EU 006 Space Heater UH-6
EU 007 Space Heater UH-7
EU 008 Space Heater UH-8
EU 009 Space Heater UH-9
EU 010 Space Heater UH-10
EU 011 Space Heater UH-11
EU 012 Space Heater UH-12
EU 013 Space Heater UH-13
EU 014 Space Heater UH-14
EU 016 Space Heater UH-16
EU 019 Space Heater TR-1
EU 020 Space Heater TR-2
EU 021 Space Heater TR-3
EU 022 Space Heater TR-4
EU 023 Space Heater TR-5
EU 024 Space Heater TR-6
EU 025 Roof-top Unit RTU-1
EU 026 Roof-top Unit RTU-2
EU 027 Roof-top Unit RTU-3
EU 029 Furnace F-1
EU 030 Furnace F-2
EU 031 Bolier #1
EU 032 Boiler #2
EU 033 Boiler #3
EU 034 Boiler #4
EU 035 Makeup Air Unit #1
EU 037 Makeup Air Unit #3
EU 038 Water Heater WH-1
EU 047 Heater 1
EU 048 Heater 2
EU 049 Drying Oven
EU 050 PC Curing Oven
EU 051 Curing Ovens
EU 052 Burn Off Oven
EU 053 Heater 3

What to do	Why to do it
The limits in GP 001 apply individually to each unit in the group.	hdr
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input . The potential to emit from each unit is 0.007 lb/million Btu heat input due to equipment design and allowable fuels.	Minn. R. 7011.0515, subp. 1

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Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2
Fuel Type: Natural gas only.	Minn. R. 7005.0100, subp. 35a
The Permittee shall keep records of fuel type on-site at all times.	Minn. R. 7007.0800, subp. 5

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Subject Item: **GP 002 Miscellaneous Metal Parts Coating**

Associated Items: EU 039 Paint Booth #1 (main plant open)

EU 040 Paint Booth #2 (main plant closed)

EU 043 Paint Booth #5 (Main open)

What to do	Why to do it
Employee Training The Permittee shall certify that all new and existing personnel, including contract personnel, who spray apply surface coatings in the units in GP 002 are trained in the proper application of surface coating. The Permittee shall maintain records of certification that each painter has completed the training required by this permit and the content of the training program. The records shall indicate the date of the initial training and most recent refresher training. The training program must include at a minimum: 1) A list of all current personnel by name and job description who are required to be trained; 2) Hands-on and classroom instruction that address, at a minimum, initial and refresher training in the following topics, as applicable:	Minn. R. 7007.0800, subp. 2, 4, & 5
Employee Training Continued -spray gun equipment selection, set up, and operation, including measuring coating viscosity, selecting the proper fluid tip or nozzle, and achieving the proper spray pattern, air pressure and volume, and fluid delivery rate -spray technique for different types of coatings to improve transfer efficiency and minimize coating usage and overspray, including, as appropriate, maintaining the correct spray gun distance and angle to the part, using proper banding and overlap, and reducing lead and lag spraying at the beginning and end of each stroke - Routine spray booth filter maintenance, including filter selection - Compliance with the requirements of this permit	Minn. R. 7007.0800, subp. 2, 4, & 5
Employee Training Continued 3) A description of the methods to be used at the completion of initial or refresher training to demonstrate, document, and provide certification of successful completion of the required training. The Permittee may show by documentation or certification that a painter's work experience and/or training has resulted in training equivalent to the training required by this permit are not required to provide initial training to these painters.	Minn. R. 7007.0800, subp. 2, 4, & 5
NESHAP APPLICABILITY	hdr
Based on the current and expected operations of the affected source, this permit only includes the emission rate without add-on controls option specified in 40 CFR Section 63.3891(b). If the Permittee later chooses to switch to or add one or both of the other compliance options allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. MMMM for those options, document the switch as required by 40 CFR Section 63.3930(c), and report the switch in the next semiannual compliance report. In addition, the Permittee shall apply for a permit amendment, as appropriate (e.g., to add applicable NESHAP language, installation of an oxidizer, etc.).	40 CFR Section 63.3891; Minn. R. 7007.1150; Minn. R. 7011.8090
The affected source is the collection of all of the items listed below that are used for surface coating of miscellaneous metal parts and products within each subcategory. 1) All coating operations as defined in 40 CFR Section 63.3981; 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.	40 CFR Section 63.3882(b); Minn. R. 7011.8090
Unless otherwise noted, all equations for 40 CFR pt. 63, subp. MMMM referenced in the requirements of GP 002 can be found in Appendix B of this permit.	Minn. R. 7007.0800, subp. 4 and 5
EMISSION AND OPERATIONAL LIMITS	hdr
HAPs - Organic: less than or equal to 2.6 lbs/gallon coating solids used during each 12-month compliance period.	40 CFR Section 63.3890(b)(1); Minn. R. 7011.8090
For any coating operation(s) on which the Permittee uses the compliant material option or the emission rate without add-on controls option, the Permittee is not required to meet any operating limits.	40 CFR Section 63.3892(a); Minn. R. 7011.8090
For any coating operation(s) on which the Permittee uses the compliant material option or the emission rate without add-on controls option, the Permittee is not required to meet any work practice standards.	40 CFR Section 63.3893(a); Minn. R. 7011.8090

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COMPLIANCE REQUIREMENTS	hdr
The Permittee must include all coatings (as defined in 40 CFR Section 63.3981), thinners and/or other additives, and cleaning materials used in the affected source when determining whether the organic HAP emission rate is equal to or less than the applicable emission limit in 40 CFR Section 63.3890 ("HAP emission limit"). To make this determination, the Permittee must use at least one of the three compliance options listed in paragraphs (a) through (c) of 40 CFR Section 63.3891. As stated earlier, this permit only includes the requirements associated with emission rate without add-on controls option specified in 40 CFR Section 63.3891(b).	CFR Section 63.3891; Minn. R. 7011.8090
Emission rate without add-on controls option. The Permittee shall demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s), the organic HAP emission rate for the coating operation(s) is less than or equal to the HAP emission limit, calculated as a rolling 12-month emission rate and determined on a monthly basis. The Permittee must meet all the requirements of 40 CFR Sections 63.3950, 63.3951, and 63.3952 (and documented in GP 002) to demonstrate compliance with the emission limit using this option.	CFR Section 63.3891(b); Minn. R. 7011.8090
The Permittee must be in compliance with the emission limitations as specified below: 1) Any coating operation(s) for which the Permittee uses the compliant material option or the emission rate without add-on controls option, as specified in 40 CFR Section 63.3891(a) and (b), must be in compliance with the HAP emission limit at all times. 2) The Permittee must always operate and maintain the affected source according to the provisions in 40 CFR Section 63.6(e)(1)(i).	40 CFR Section 63.3900(a)(1) and (b); Minn. R. 7011.8090
Mass Fraction of HAP: The Permittee shall determine the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each month by using one of the following options: 1) Method 311 (appendix A to 40 CFR pt. 63) for determining the mass fraction of organic HAP. Use the procedures specified in 40 CFR Section 63.3941(a)(1)(i) and (ii) when performing a Method 311 test; 2) Method 24 (appendix A to 40 CFR part 60), for coatings, to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for mass fraction of organic HAP. For reactive adhesives in which some of the HAP react to form solids and are not emitted to the atmosphere, the Permittee may use the alternative method contained in appendix A to 40 CFR pt. 63, subp. PPPP, rather than Method 24.	40 CFR Section 63.3951(a); Minn. R. 7011.8090
2) continued The Permittee may use the volatile fraction that is emitted, as measured by the alternative method in appendix A to subpart PPPP, as a substitute for the mass fraction of organic HAP; 3) The Permittee may use an alternative test method for determining the mass fraction of organic HAP as specified in 40 CFR Section 63.3941(a)(3); 4) The Permittee may rely on information other than the three options given above, such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR Section 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For reactive adhesives in which some of the HAP react to form solids and are not emitted to the atmosphere, you may rely on manufacturer's data that expressly states the organic HAP or volatile matter mass fraction emitted.	40 CFR Section 63.3951(a); Minn. R. 7011.8090 (cont.)
4) continued If there is a disagreement between such information and results of a test conducted according to the three other options, then the test method results will take precedence unless, after consultation, the Permittee can demonstrate to the satisfaction of the Agency that the formulation data are correct; or 5) Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic HAP which must be counted toward the total organic HAP mass fraction of the materials. When test data and manufacturer's data for solvent blends are not available, the Permittee may use the default values for the mass fraction of organic HAP in these solvent blends listed in Table 3 or 4 of 40 CFR pt. 63, subp. MMMM.	40 CFR Section 63.3951(a); Minn. R. 7011.8090 (cont.)

5) continued If these tables are used, the Permittee must use the values in Table 3 for all solvent blends that match Table 3 entries according to the instructions for Table 3, and the Permittee may use Table 4 only if the solvent blends in the materials used do not match any of the solvent blends in Table 3 and the Permittee knows only whether the blend is aliphatic or aromatic. However, if the results of a Method 311 (appendix A to 40 CFR pt. 63) test indicate higher values than those listed on Table 3 or 4, the Method 311 results will take precedence unless, after consultation, you demonstrate to the satisfaction of the Agency the formulation data are correct.	40 CFR Section 63.3951(a); Minn. R. 7011.8090 (cont.)
The Permittee may use the mass fraction values in Table 3 for solvent blends for which the Permittee does not have test data or manufacturer's formulation data and which match either the solvent blend name or the chemical abstract series (CAS) number. If a solvent blend matches both the name and CAS number for an entry, that entry's organic HAP mass fraction must be used for that solvent blend. Otherwise, use the organic HAP mass fraction for the entry matching either the solvent blend name or CAS number, or use the organic HAP mass fraction from Table 4 if neither the name nor CAS number match.	40 CFR pt. 63, subp. MMMM, Table 3; 40 CFR Section 63.3951(a); Minn. R. 7011.8090
The Permittee may use the mass fraction values in Table 4 for solvent blends for which the Permittee does not have test data or manufacturer's formulation data.	40 CFR pt. 63, subp. MMMM, Table 4; 40 CFR Section 63.3951(a); Minn. R. 7011.8090
Volume Fraction of Solids: The Permittee shall determine the volume fraction of coating solids (liter (gal) of coating solids per liter (gal) of coating) for each coating used during each month by one of the methods given below. If test results obtained according to item 1 below do not agree with the information obtained under items 3 or 4 below, the test results will take precedence unless, after consultation, the Permittee can demonstrate to the satisfaction of the Agency that the formulation data are correct. 1) ASTM methods as specified in 40 CFR Section 63.3941(b)(1); 2) Alternative test method for determining the solids content of each coating as specified in 40 CFR Section 63.3941(b)(2); 3) Volume fraction of coating solids for each coating from the supplier or manufacturer; or 4) Calculate the volume fraction of coating solids using the equation in 40 CFR Section 63.3941(b)(4) and contained in Appendix B.	40 CFR Section 63.3951(b); Minn. R. 7011.8090
Density: The Permittee shall determine the density of each liquid coating, thinner and/or other additive, and cleaning material used during each month from test results using ASTM Method D1475-98, "Standard Test Method for Density of Liquid Coatings, Inks, and Related Products" (incorporated by reference, see 40 CFR Section 63.14), information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If the Permittee is including powder coatings in the compliance determination, determine the density of powder coatings, using ASTM Method D5965-02, "Standard Test Methods for Specific Gravity of Coating Powders" (incorporated by reference, see 40 CFR Section 63.14), or information from the supplier.	40 CFR Section 63.3951(c); Minn. R. 7011.8090
continued If there is disagreement between ASTM Method D1475-98 or ASTM Method D5965-02 test results and other such information sources, the test results will take precedence unless, after consultation the Permittee demonstrates to the satisfaction of the Agency that the formulation data are correct. If the Permittee purchases materials or monitor consumption by weight instead of volume, the Permittee does not need to determine material density. Instead, the Permittee may use the material weight in place of the combined terms for density and volume in Equations 1A, 1B, 1C, and 2.	40 CFR Section 63.3951(c); Minn. R. 7011.8090 (cont.)
Volume: The Permittee shall determine the volume (liters or gallons) of each coating, thinner and/or other additive, and cleaning material used during each month by measurement or usage records. If the Permittee purchases materials or monitors consumption by weight instead of volume, the Permittee does not need to determine the volume of each material used. Instead, the Permittee may use the material weight in place of the combined terms for density and volume in Equations 1A, 1B, and 1C.	40 CFR Section 63.3951(d); Minn. R. 7011.8090

The mass of organic HAP emissions is the combined mass of organic HAP contained in all coatings, thinners and/or other additives, and cleaning materials used during each month minus the organic HAP in certain waste materials. The Permittee shall calculate the following using the equations referenced in this subpart and Appendix B of this permit: 1) Calculate the mass of organic HAP emissions using Equation 1. 2) Calculate the kg organic HAP in the coatings used during the month using Equation 1A. 3) Calculate the kg of organic HAP in the thinners and/or other additives used during the month using Equation 1B. 4) Calculate the kg organic HAP in the cleaning materials used during the month using Equation 1C. 5) If the Permittee chooses to account for the mass of organic HAP contained in waste materials sent or designated for shipment to a hazardous waste TSDF in Equation 1, then the Permittee must determine the mass according to 40 CFR Section 63.3951(e)(4)(i) through (iv).	40 CFR Section 63.3951(e); Minn. R. 7011.8090
The Permittee shall determine the total volume of coating solids used, liters or gallons, which is the combined volume of coating solids for all the coatings used during each month, using Equation 2 contained in 40 CFR part 63 subpart MMMM and Appendix B of this permit.	40 CFR Section 63.3951(f); Minn. R. 7011.8090
The Permittee shall calculate the organic HAP emission rate for the compliance period, kg (lb) organic HAP emitted per liter (gal) coating solids used, using Equation 3 of 40 CFR part 63 subpart MMMM and Appendix B of this permit.	40 CFR Section 63.3951(g); Minn. R. 7011.8090
To demonstrate continuous compliance, the organic HAP emission rate for each compliance period, determined according to 40 CFR Section 63.3951(a) through (g), must be less than or equal to the HAP emission limit. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in 40 CFR Section 63.3950 is the end of a compliance period consisting of that month and the preceding 11 months. The Permittee must perform the calculations in 40 CFR Section 63.3951(a) through (g) on a monthly basis using data from the previous 12 months of operation.	40 CFR Section 63.3952(a); Minn. R. 7011.8090
If the organic HAP emission rate for any 12-month compliance period exceeded the HAP emission limit, this is a deviation from the emission limitation for that compliance period and must be reported as specified in 40 CFR Sections 63.3910(c)(6) and 63.3920(a)(6).	40 CFR Section 63.3952(b); Minn. R. 7011.8090
RECORDKEEPING	hdr
The Permittee must collect and keep records of the data and information specified below. Failure to collect and keep these records is a deviation from the applicable standard. 1) A copy of each notification and report that the Permittee submitted to comply with 40 CFR pt. 63, subp. MMMM, and the documentation supporting each notification and report; 2) Records of the data and calculations used to determine the predominant activity alternative of Section 63.3890(c);	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090
continued 3) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP and density for each coating, thinner and/or other additive, and cleaning material, and the volume fraction of coating solids for each coating. If the Permittee conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, the Permittee must keep a copy of the complete test report. If the Permittee uses information provided to the Permittee by the manufacturer or supplier of the material that was based on testing, the Permittee must keep the summary sheet of results provided to the Permittee by the manufacturer or supplier. The Permittee are not required to obtain the test report or other supporting documentation from the manufacturer or supplier;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)
continued 4) For each compliance period, the records specified below: - A record of the coating operations on which the Permittee used each compliance option and the time periods (beginning and ending dates and times) for each option the Permittee used; and - A record of the calculation of the total mass of organic HAP emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 1, 1A, 1B, 1C, and 2, if applicable, the calculation used to determine mass of organic HAP in waste materials according to 40 CFR Section 63.3951(e)(4); the calculation of the total volume of coating solids used each month using Equation 2; and the calculation of each 12-month organic HAP emission rate using Equation 3; 5) A record of the name and volume of each coating, thinner and/or other additive, and cleaning material used during each compliance period;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)

continued 6) A record of the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each compliance period unless the material is tracked by weight; 7) A record of the volume fraction of coating solids for each coating used during each compliance period; 8) The density for each coating, thinner and/or other additive, and cleaning material used during each compliance period; 9) If the Permittee uses an allowance in Equation 1 for organic HAP contained in waste materials according to 40 CFR Section 63.3951(e)(4), the Permittee must keep the following records: - The name and address of each TSDF to which the Permittee sent waste materials for which the Permittee uses an allowance in Equation 1 in Appendix B of this permit; a statement of which subparts under 40 CFR parts 262, 264, 265, and 266 apply to the facility; and the date of each shipment;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)
continued - Identification of the coating operations producing waste materials included in each shipment and the month or months in which the Permittee used the allowance for these materials in Equation 1; - The methodology used in accordance with 40 CFR Section 63.3951(e)(4) to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a TSDF each month; and the methodology to determine the mass of organic HAP contained in these waste materials. This must include the sources for all data used in the determination, methods used to generate the data, frequency of testing or monitoring, and supporting calculations and documentation, including the waste manifest for each shipment. 10) The Permittee must keep records of the date, time, and duration of each deviation.	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)
The Permittee's records must be in a form suitable and readily available for expeditious review, according to 40 CFR Section 63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database. As specified in 40 CFR Section 63.10(b)(1), the Permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee must keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). The Permittee may keep the records off-site for the remaining 3 years.	40 CFR Sections 63.3931 and 63.3952(d); Minn. R. 7011.8090
REPORTING (See Table B for additional requirements)	hdr
Content of Semiannual Compliance Report: At a minimum, the report shall include: 1) Company name and address; 2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; 3) Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. Note that the information reported for each of the 6 months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation; 4) Identification of the compliance option or options specified in 40 CFR Section 63.3891 that the Permittee used on each coating operation during the reporting period. If the Permittee switched between compliance options during the reporting period, the Permittee must report the beginning and ending dates for each option the Permittee used.	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090
continued 5) the calculation results for each rolling 12-month organic HAP emission rate during the 6-month reporting period; 6) If the Permittee used the predominant activity alternative in Section 63.3890(c)(1), the annual determination of the predominant activity if it was not included in the previous semi-annual compliance report; 7) If there were no deviations from the applicable HAP emission limit, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period; and	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090 (cont)

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continued 8) If there was a deviation from the applicable HAP emission limit, the semiannual compliance report must contain the following information: - The beginning and ending dates of each compliance period during which the 12-month organic HAP emission rate exceeded the applicable HAP emission limit; - The calculations used to determine the 12-month organic HAP emission rate for the compliance period in which the deviation occurred. The Permittee must submit the calculations for Equations 1, 1A, 1B, 1C, 2, and 3, and if applicable, the calculation used to determine mass of organic HAP in waste materials according to 40 CFR Section 63.3951(e)(4). The Permittee does not need to submit background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports); and - A statement of the cause of each deviation.	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090 (cont)

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Subject Item: **GP 003 Group Limits**

Associated Items: EU 039 Paint Booth #1 (main plant open)

EU 040 Paint Booth #2 (main plant closed)

EU 043 Paint Booth #5 (Main open)

EU 044 Degreaser

What to do	Why to do it
DAILY RECORDKEEPING - VOC, HAP, and PM	hdr
Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain the total quantity of all coatings and other VOC, solids, and HAP containing materials used at the units of GP 003. This shall be based on written or electronic records of paint and solvent use for each paint job at each paint booth and solvent use for the degreaser.	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000; 40 CFR Section 63.2; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
VOC LIMIT, MONTHLY RECORDKEEPING, AND CALCULATIONS	hdr
Volatile Organic Compounds: less than or equal to 48 tons/year using 12-month Rolling Sum	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping -- VOC Emissions. By the last day of the calendar month, the Permittee shall calculate and record the following: 1) The total usage of VOC-containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC content of each material as determined by the Material Content requirement of this permit; 2) The VOC emissions for the previous month using the formulas specified in this permit; and 3) The 12-month rolling sum VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5
Monthly Calculation -- VOC Emissions. The Permittee shall calculate VOC emissions using the following equations: VOC (tons/month) = V - W V = (A1 x B1) + (A2 x B2) + (A3 x B3) + ... W = (C1 x D1) + (C2 x D2) + C3 x D3) + ...	Minn. R. 7007.0800, subps. 4 and 5
Monthly Calculation -- VOC Emissions Continued where: V = total VOC used in tons/month; A# = amount of each VOC-containing material used, in tons/month; B# = weight percent VOC in A#, as a fraction; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of VOC in C#, as a fraction.	Minn. R. 7007.0800, subps. 4 and 5
HAP LIMITS: FIRST 12 MONTHS AFTER PERMIT ISSUANCE	hdr
For the first 12 months after permit issuance, the Permittee shall comply with the following limits HAPs - Total: less than or equal to 1*n tons/year HAPs - Single: less than or equal to 8.5/12*n tons/year Where: n = number of months since permit issuance The first month, n=1, shall represent the period of time from permit issuance to the last day of the month in which the permit was issued. All subsequent months shall be calendar months. All references to calendar months in GP 001 shall, for the first month of operation, meet the definition above. The Permittee shall determine compliance with these limits according to the procedure below.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2; To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
HAP LIMITS: 12 MONTHS AFTER PERMIT ISSUANCE	hdr

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HAPs - Total: less than or equal to 12 tons/year using 12-month Rolling Sum	Title I Condition: To avoid major source classification under 40 CFR Section 63.2; To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
HAP-Single: less than or equal to 8.5 tons/year using 12-month Rolling Sum	Title I Condition: To avoid major source classification under 40 CFR Section 63.2; To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
MONTHLY HAP RECORDKEEPING AND CALCULATIONS	hdr
Monthly Recordkeeping - HAP Emissions. By the last day of the calendar month, the Permittee shall calculate and record the following using the formulas specified in this permit: 1). The total HAP-containing materials used in the previous calendar month using the daily usage records. This record shall also include the individual and total HAP contents of each HAP-containing material used in the previous month, as determined by the Material Content requirement of this permit; 2). The total and individual HAP emissions for the previous calendar month using the formulas specified in this permit; and 3) for the first 12 months after permit issuance: - the sum of total and individual HAP emissions for all months since permit issuance by summing the monthly emissions data for those months. - the total and individual HAP emissions limit using the formulas in GP 003 under "HAP LIMITS: FIRST 12 MONTHS AFTER PERMIT ISSUANCE	Minn. R. 7007.0800, subps. 4 and 5
Monthly Recordkeeping - HAP Emissions Continued. 4) For all months after the first 12 months after permit issuance, the 12-month rolling sum individual and total HAP emissions for the previous 12-month period by summing the monthly HAP emissions data for the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5
Monthly Calculation -- HAP Emissions. The Permittee shall calculate each individual HAP and total HAP emissions using the following equations: HAP Emissions (tons/month) = H - W H = (A1 x B1) + (A2 x B2) + (A3 x B3) + ... W = (C1 x D1) + (C2 x D2) + (C3 x D3) + ...	Minn. R. 7007.0800, subps. 4 and 5
Monthly HAP Emissions Calculation Continued: Where: H = the amount of each pollutant (either total HAP or each individual HAP), used, in tons/month. A# = Amount of each HAP-containing material used in the previous month, in tons/month. B# = weight percent of each individual or total HAP in A#, as a fraction (e.g., 50% is 0.50). W = the amount of each pollutant (either total HAP or each individual HAP) shipped in waste, in tons/month. C# = amount, in tons/month, of each HAP-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero. D# = weight percent of each individual or total HAP in C#, as a fraction.	Minn. R. 7007.0800, subps. 4 and 5
PARTICULATE MATTER LIMITS, MONTHLY RECORDKEEPING, AND CALCULATIONS	hdr
Total Particulate Matter: less than or equal to 5 tons/year using 12-month Rolling Sum	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
PM < 10 micron: less than or equal to 5 tons/year using 12-month Rolling Sum	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
PM < 2.5 micron: less than or equal to 5 tons/year using 12-month Rolling Sum	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - PM/PM10/PM2.5 Emission. By the last day of the calendar month, the Permittee shall calculate and record the following: 1) The total usage of each solids-containing material for the previous calendar month using the daily usage records. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit; 2) The PM, PM10, and PM2.5 emissions for the previous month using the formulas specified in this permit; and 3) The 12-month rolling sum PM, PM10, PM2.5 emissions for the previous 12-month period by summing the monthly PM, PM10, PM2.5 emissions data resepctively for the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5

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Monthly Calculation -- PM/PM10/PM2.5 Emissions. The Permittee shall calculate PM/PM10/PM2.5 emissions from the spray booths using the following equations: PM, PM10, or PM2.5 (tons/month) = S(1-CE)(1-TE) - W S = (A1 x B1) + (A2 x B2) + (A3 x B3) + ... W = (C1 x D1) + (C2 x D2) + (C3 x D3) + ...	Minn. R. 7007.0800, subps. 4 and 5
Monthly PM/PM10/PM2.5 Emissions Calculation Continued: Where: S = total solids used in tons/month; CE = overall control efficiency, as a fraction. This value shall correspond to limit listed in this permit under CE 003, CE 004, and CE 007 for the appropriate pollutant and the appropriate panel filter and as listed requirement below; TE = transfer efficiency, as a fraction. This shall be 0.75, unless otherwise approved by the MPCA in writing. A# = amount of each solids-containing material sprayed, in tons/month; B# = weight percent solids in A#, as a fraction; W = the amount of solids shipped in waste, in tons/month; C# = amount, in tons/month, of each solids-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of solids in C#, as a fraction.	Minn. R. 7007.0800, subps. 4 and 5
Monthly PM/PM10/PM2.5 Emissions Calculation Continued - The Permittee shall use the following for the values of the variable "CE" when calculating particulate matter, particulate matter less than 10 microns, and particulate matter less than 2.5 microns emissions from the paint booths in GP 003. Emissions from EU 039 (CE 003) CE = 0.68 Emissions from EU 040 (CE 004) CE = 0.85 Emissions from EU 043 (CE 007) CE = 0.68	Minn. R. 7007.0800, subps. 4 and 5
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall vent emissions from all spray booths to control equipment meeting the requirements of CE 003, CE 004, and CE 007 as described below. The units shall be vented as follows: EU 039 shall be vented to a panel filter meeting the requirements of CE 003 EU 040 shall be vented to a panel filter meeting the requirements of CE 004 EU 043 shall be vented to a panel filter meeting the requirements of CE 007	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Material Content - VOC, HAPs, and Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coating and solvent materials shall be determined by either 1) the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. When using the MSDS as the basis of calculating particulate emissions, the conservative assumption is made that PM consists entirely of PM less than 10 microns or less than 2.5 microns; or 2) A method for determining VOC, HAP, or solids content that is specified by 40 CFR pt. 63, subp. MMMM and contained under GP 004 of this permit. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.	Minn. R. 7007.0800, subps. 4 and 5
Material Content Continued - Other alternative methods approved by the MPCA may be used to determine the VOC, HAPs, and solids contents. The Commissioner reserves the right to require the Permittee to determine the VOC, HAP, and solids contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.	Minn. R. 7007.0800, subps. 4 and 5
Waste Credit: If the Permittee elects to obtain credit for HAPs, solids, and/or VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC, solids, and/or total and individual HAP content for each credited shipment. 1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, solids, total HAP, and each individual HAP, excluding water. 2) The Permittee may use supplier data for raw materials to determine the VOC, solids, and total and individual HAP contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC, solids, and total and individual HAP content of any of the materials.	Minn. R. 7007.0800, subps. 4 and 5

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Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP003. These assumptions are listed in Appendix C of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
The Permittee shall not use any halogenated solvents in the degreaser, EU 044. At all times, the Permittee shall maintain on-site records of the type of degreaser solvent in use.	Minn. R. 7007.0800, subp. 2

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Subject Item: **GP 004 Miscellaneous Process Equipment**

Associated Items: EU 039 Paint Booth #1 (main plant open)

EU 040 Paint Booth #2 (main plant closed)

EU 043 Paint Booth #5 (Main open)

EU 044 Degreaser

EU 045 Sandblaster

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall vent emissions from EU 045 to a filter meeting the requirements of CE 001 at all times that EU 045 is in operation.	Minn. R. 7007.0800, subp. 2 and 14; Minn. R. 7011.0715, subp. 1(A)
LIMITS The limits below apply individually to each unit in GP 004.	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

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Subject Item: **GP 005 Panel Filters**

Associated Items: CE 003 Mat or Panel Filter

CE 004 Mat or Panel Filter

CE 007 Mat or Panel Filter

What to do	Why to do it
The requirements in GP 005 apply individually to each panel filter. See CE 003, CE 004, and CE 007 for additional requirements associated with the panel filters	hdr
LIMITS AND OPERATIONAL REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 0.01 inches of water column and less than or equal to 0.40 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop Recordkeeping. At least once each each 24 hours when in operation, the Permittee shall read and record the pressure drop across the panel filter. The Permittee shall record the time and date of each pressure drop reading and whether or not the observed pressure drop was within the range specified in this permit.	MInn. R. 7007.0800, subps. 4 and 5
Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each panel filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections.	Minn. R. 7007.0800, subps. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining necessary parts for routine repairs of the monitoring equipment, when the monitored filter is in operation.	Minn. R. 7007.0800, subp. 4
The Permittee shall calibrate each pressure gauge at least once every 12 months and shall maintain a written record of any action resulting from the calibration.	Minn. R. 7007.0800, subp. 4
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

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Subject Item: **GP 006 Process Heaters Subject to NESHAP Subpart DDDDD**

Associated Items: EU 047 Heater 1

EU 048 Heater 2

EU 049 Drying Oven

EU 050 PC Curing Oven

EU 051 Curing Ovens

EU 052 Burn Off Oven

EU 053 Heater 3

What to do	Why to do it
The requirements of GP 009 apply individually to each unit in GP 009.	hdr
WORK PRACTICE STANDARDS	hdr
The Permittee shall complete a tune-up, as specified below, once every 5 years for each process heater in GP 006.	40 CFR Section 63.7500(e) and Table 3 to subp. DDDDD of 40 CFR pt. 63
Each 5-year tune-up specified in Section 63.7540(a)(12) shall be conducted no more than 61 months after the previous tune-up. The first tune-up shall be no later than 61 months after the initial startup of each new affected source.	40 CFR Section 63.7515(d)
For units that are not operating at the time of their scheduled tune-up, the Permittee shall complete a subsequent tune-up following the procedures of Section 63.7540(a)(10)(i) through (vi) and the schedule described in Section 63.7540(a)(13), described below.	40 CFR Section 63.7515(g)
If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.	40 CFR Section 63.7540(a)(13)
The Permittee shall be incompliance with the work practice standards at all times the affected units is operating other than periods of startup, shutdown, or malfunction.	40 CFR Section 63.7505(a) and 63.7500(f)
CONTINUOUS COMPLIANCE DEMONSTRATION	hdr
Unit Tune-up Procedures The Permittee shall i) As applicable, inspect the burner, and clear or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled or unscheduled unit shutdown, but the Permittee shall inspect each burner at least once every 72 months. At units where entry into a piece of process equipment or into a storage vessel is required to compete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment; ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; iii) Inspect the system controlling to air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The Permittee may delay the inspection until the next scheduled unit shutdown;	40 CFR Section 63.7540(a)(12) and 40 CFR Section 63.7540(a)(10)(i)-(vi)
Unit Tune-up Procedures Continued iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOx requirement to which the unit is subject; v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent before and after the adjustments are made. Measurements may be either on a dry or wet bases, as long as it is the same basis before and after the adjustments are made. Measurements may be taken using a portable CO analyzer; and vi) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (a)(10)(vi)(A) through (C) of this section, as listed below A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;	40 CFR Section 63.7540(a)(12) and 40 CFR Section 63.7540(a)(10)(i)-(vi)
Unit Tune-up Procedures Continued B) A description of any corrective actions taken as part of the tune-up; and C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.	40 CFR Section 63.7540(a)(12) and 40 CFR Section 63.7540(a)(10)(i)-(vi)

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NOTIFICATIONS (see Table B)	hdr
REPORTS (see also Table B)	hdr
Content of Compliance Status Report: i) Company and Facility name and address; ii) Process units information; iii) Date of report and beginning and ending dates of the reporting period; iv) The total operating time during the reporting period; and v) The date of the most recent tune-up for each unit subject to only the requirement to conduct a 5-year tune-up. Indclude the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. vi) If there are no deviations from the applicable requirements for work practice standards in Table to this subpart, a statement that there were no deviations from the work practice standards during the reporting period. vii) if there was a deviation from an applicable work practice standard during the reporting period, the report must contain the following information	40 CFR Section 63.7550(c)(1) and Table 9 to subp. DDDDD of 40 CFR pt. 63
1) A description of the deviation and which work practice standard from which you deviated 2) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken	40 CFR Section 63.7550(c)(1) and (d) and Table 9 to subp. DDDDD of 40 CFR pt. 63
The Permittee shall submit the Compliance Status Report electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due the Permittee shall submit the report to the Administrator at the appropriate address listed in 40 CFR Section 63.13.	40 CFR Section 63.7550(h)(3)
RECORDKEEPING	hdr
The Permittee shall maintain the following records i) a copy of each notification and report submitted to comply with this subpart; ii) records of each compliance demonstration (tune-up); iii) records of the calendar date, time, occurrence and duration of each startup and shutdown; iv) records of the types(s) and amount(s) of fuels used during each startup and shutdown.	40 CFR Section 63.7555
The Permittee shall maintain each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee shall keep each record on site, or they must be accessible from on site (e.g. through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. Records may be kept off site for the remaining 3 years.	40 CFR Section 63.7560 and Table 8 to subp. DDDDD of 40 CFR pt. 63
GENERAL PROVISIONS	hdr
The Permittee shall comply with the applicable General Provisions contained in Table 10 to subpart DDDDD of 40 CFR pt. 63.	40 CFR Section 63.7565 and Table 10 to subp. DDDDD of 40 CFR pt. 63

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

Associated Items: EU 045 Sandblaster

What to do	Why to do it
The Permittee shall operate and maintain the fabric filter, CE 001 such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the fabric filter, CE 001 such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 93 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the fabric filter, CE 001 such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 93 percent control efficiency	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the fabric filter, CE 001 at all times that any emission unit controlled by the fabric filter, CE 001 is in operation. The Permittee shall document periods of non-operation of the fabric filter, CE 001.	Minn. R. 7007.0800, subps. 2 and 14
Pressure Drop: greater than or equal to 0.01 inches of water column and less than or equal to 0.50 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7007.0800, subps. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the pressure drop at least once every 24 hours when the fabric filter, CE 001 is in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Minn. R. 7007.0800, subps. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the fabric filter, CE 001 components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter, CE 001 or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter, CE 001. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter, CE 001 is in operation.	Minn. R. 7007.0800, subp. 4
The Permittee shall calibrate the pressure gauge at least once every 12 months and shall maintain a written record of any action resulting from the calibration.	Minn. R. 7007.0800, subps. 4 and 5
The Permittee shall operate and maintain the fabric filter, CE 001 in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 003 Mat or Panel Filter**

Associated Items: EU 039 Paint Booth #1 (main plant open)

GP 005 Panel Filters

What to do	Why to do it
LIMITS AND OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain the CE 003 any time that EU 039, the equipment controlled by the panel filter, is in operation. The Permittee shall document periods of non-operation of CE 003.	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 68 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 10 micron: greater than or equal to 68 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 68 percent collection efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
HOOD EVALUATION AND CERTIFICATION	hdr
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. There shall not be more than 12 months between each annual hood evaluation.	Minn. R. 7007.0800, subps. 4, 5 and 14

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 004 Mat or Panel Filter**

Associated Items: EU 040 Paint Booth #2 (main plant closed)

GP 005 Panel Filters

What to do	Why to do it
LIMITS AND OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain CE 004 any time that EU 040, equipment controlled by the panel filter, is in operation. The Permittee shall document periods of non-operation of the control equipment.	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 85 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 10 micron: greater than or equal to 85 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 85 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 007 Mat or Panel Filter**

Associated Items: EU 043 Paint Booth #5 (Main open)

GP 005 Panel Filters

What to do	Why to do it
LIMITS AND OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain CE 007 any time that EU 043, the equipment controlled by the panel filter, is in operation. The Permittee shall document periods of non-operation of the control equipment.	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 68 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 10 micron: greater than or equal to 68 percent control efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 68 percent collection efficiency	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
HOOD EVALUATION AND CERTIFICATION	hdr
Initial Hood Certification and Evaluation: Within 180 days after permit issuance, the Permittee shall certify that the control device hood conforms to the requirements listed in Minn. R. 7011.0072, subp. 2(B). The certification shall meet the requirements of Minn. R. 7011.0072, subps. 2 and 3. The Permittee shall maintain a copy of the evaluation and certification on site.	Minn. R. 7007.0800, subps. 4, 5 and 14
Initial Hood Certification and Evaluation Continued: If the Permittee is unable to certify that the hood conforms to the requirements listed in Minn. R. 7011.0072, subp. 2(B), the Permittee shall complete one of the following within 180 days of permit issuance: 1 Make any needed changes to the hood to bring it into compliance with the design and operating practives of "Industrial Ventilation - A Manual of Recommended Practices", 21st ed. Once the hood is in compliance, complete the evaluation and certification according to the requirement above; 2. Test the hood capture efficiency in accordance with Minn. R. 7017.2001 to 7017.2060. If the test shows that the hood achieves a capture efficiency of less than 80%, the Permittee shall apply for an amendment to revise the capture efficiency in the permit within 60 days of receipt of a Notification of Noncompliance from the MPCA; or	Minn. R. 7007.0800, subps. 4, 5 and 14
Initial Hood Certification and Evaluation Continued: 3. Submit a permit application to propose an alternative capture efficiency based on engineering calculations prepared by an engineer or Certified Industrial Hygenist.	Minn. R. 7007.0800, subps. 4, 5 and 14
Annual Hood Evaluation: At least once every 12 months after the initial hood certification and evaluation, the Permittee shall measure and record the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. There shall not be more than 12 months between each annual hood evaluation.	Minn. R. 7007.0800, subps. 4, 5 and 14

TABLE B: SUBMITTALS

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:
- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup. Submit the name and number of each unit and the actual date of initial startup each unit.	GP006
Notification	due before 05/30/2013. The Permittee shall submit an initial notification according to 40 CFR Section 63.9(b)(2) for affected sources for which startup was before January 31, 2013.	GP006

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

What to send	When to send	Portion of Facility Affected
Semiannual Compliance Report	due 31 days after end of each calendar half-year starting 02/01/2008. The report shall contain the information specified in Table A of this permit, under GP002. Each semiannual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. This report may be submitted with the Semiannual Deviations Report also listed in Table B of this permit. See Table A for the requirements of the content of this report.	GP002
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility
Compliance Status Report	due 31 days after end of each calendar 60 months starting 01/01/2013. The first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR Section 63.7591 and ending on January 1, 2018. Each subsequent report shall cover the subsequent 5-year period from January 1 to December 31. See Table A for content of the report and how to submit the report.	GP006

Appendix A: Insignificant Activities and General Applicable Requirements
Facility Name: Winona Lighting Inc
Permit Number: 169000092-001

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R.	Rule Description of the Activity	General Applicable Requirement
7007.1300 subp. 3(B)(1)	Infrared electric ovens: *Infrared electric ovens are used for paint drying and curing at Winona Lighting.*	Minn. R. 7011.0710/0715 PM & Opacity
7007.1300 subp. 3(E)(2)	Nonhazardous air pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of nonhazardous air pollutant VOCs and with a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit: *Winona Lighting has aqueous cleaner tanks that may contain very low percentages of non-HAP VOCs.*	Minn. R. 7011.0710/0715 PM & Opacity
7007.1300 subp.3(H)(3)	Miscellaneous brazing, soldering, or welding equipment: *Winona Lighting uses this type of equipment in its fabrication area.*	Minn. R. 7011.0710/0715 PM & Opacity
7007.1300 subp. 3(H)(7)	Miscellaneous cleaning operations: *Winona Lighting has parts cleaning and rinsing operations that use alkaline and phosphate cleaners*	Minn. R. 7011.0710/0715 PM & Opacity
7007.1300 subp. 3(K)	Plant housekeeping/upkeep spray painting activities	Minn R. 7011.0710/715 PM & Opacity
7008.4110	Conditionally Insignificant Activities – Emission from equipment venting PM or PM10 inside a building that is filtered through an air cleaning system and vented inside the building 100 percent of the time: *Winona Lighting has buffing and sanding operations that qualify under this subpart*	Minn. R. 7011.070/0715 PM & Opacity

Appendix B: Part 63 Subpart MMMM Compliance Equations
Facility Name: Winona Lighting Inc
Permit Number: 169000092-001

All equation numbers correspond to the equation numbers used in 40 CFR § 63.3951.

EQUATION 1

$H_e = A + B + C - R_w$

Where:

H_e = Total mass of organic HAP emissions during the month, kg.

A = Total mass of organic HAP in the coatings used during the month, kg, as calculated in Equation 1A.

B = Total mass of organic HAP in the thinners and/or other additives used during the month, kg, as calculated in Equation 1B.

C = Total mass of organic HAP in the cleaning materials used during the month, kg, as calculated in Equation 1C.

R_w = Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF for treatment or disposal during the month, kg, determined according to 40 CFR § 63.3951(e)(4). (The Permittee may assign a value of zero to R_w if the Permittee does not wish to use this allowance.)

EQUATION 1A

$$A = \sum_{i=1}^{m} (Vol_{c,i})(D_{c,i})(W_{c,i})$$

Where:

A = Total mass of organic HAP in the coatings used during the month, kg.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$D_{c,i}$ = Density of coating, i, kg coating per liter coating.

$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating. For reactive adhesives as defined in 40 CFR § 63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to 40 CFR pt. 63, subp. PPPP.

m = Number of different coatings used during the month.

EQUATION 1B

$$B = \sum_{j=1}^{n} (Vol_{i,j})(D_{i,j})(W_{i,j})$$

Where:

B = Total mass of organic HAP in the thinners and/or other additives used during the month, kg.

$Vol_{i,j}$ = Total volume of thinner and/or other additive, j, used during the month, liters.

$D_{i,j}$ = Density of thinner and/or other additive, j, kg per liter.

$W_{i,j}$ = Mass fraction of organic HAP in thinner and/or other additive, j, kg organic HAP per kg thinner and/or other additive. For reactive adhesives as defined in 40 CFR § 63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to 40 CFR pt. 63, subp. PPPP.

n = Number of different thinners and/or other additives used during the month.

EQUATION 1C

$$C = \sum_{k=1}^{p} (Vol_{s,k})(D_{s,k})(W_{s,k})$$

Where:

C = Total mass of organic HAP in the cleaning materials used during the month, kg.

$Vol_{s,k}$ = Total volume of cleaning material, k, used during the month, liters.

$D_{s,k}$ = Density of cleaning material, k, kg per liter.

$W_{s,k}$ = Mass fraction of organic HAP in cleaning material, k, kg organic HAP per kg material.

p = Number of different cleaning materials used during the month.

EQUATION 2

$$V_{st} = \sum_{i=1}^{m} (Vol_{c,i})(V_{s,i})$$

Where:

V_{st} = Total volume of coating solids used during the month, liters.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$V_{s,i}$ = Volume fraction of coating solids for coating, i, liter solids per liter coating, determined according to 40 CFR § 63.3941(b).

m = Number of coatings used during the month.

EQUATION 3

$$H_{yr} = \frac{\sum_{y=1}^{n} H_e}{\sum_{y=1}^{n} V_{st}}$$

Where:

H_{yr} = Average organic HAP emission rate for the compliance period, kg organic HAP emitted per liter coating solids used.

H_e = Total mass of organic HAP emissions from all materials used during month, y, kg, as calculated by Equation 1.

V_{st} = Total volume of coating solids used during month, y, liters, as calculated by Equation 2.

y = Identifier for months.

n = Number of full or partial months in the compliance period (for the initial compliance period, n equals 12 if the compliance date falls on the first day of a month; otherwise n equals 13; for all following compliance periods, n equals 12).

Appendix C: Maximum[+] Contents of Materials and Coating Rate
Facility Name: Winona Lighting Inc
Permit Number: 169000092-001

The tables below gives the maximum contents of materials and coating rate used in calculating potential to emit for EUs 039, 040, and 043. These numbers are not limits; however, changing to a coating with a higher material content or increasing spray gun capacity is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn R. 7007.1150.

Parameter	Value
Maximum[+] VOC Content (lb VOC/gal coating applied)	6.48
Maximum[+] Solids Content (lb solids/gal coating applied)	8.49
Maximum[+] coating rate (gal/hr/gun)	2.81

[+] Maximums at the time of permit issuance

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 16900092-001

This technical support document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 3648)
Owner: Acuity Brands Lighting Inc. 1170 Peachtree Street NE Atlanta, GA 30309-7676 Operator: Acuity Brands Lighting 1400 Lester Road Conyers, GA 30012	Winona Lighting Inc. 3760 West 4th Street Winona, MN 55987 Winona County
	Contact: K. R. Young Phone: 770-860-3520

1.2 Facility Description

Winona Lighting ("Permittee" or "facility") manufactures specialized decorative electrical lighting fixtures. The emissions sources from the facility include: spray paint booths, a solvent degreaser, aqueous cleaners, welding and soldering operations, metal grinding and buffing, abrasive blasting, incidental woodworking, and small natural gas combustion units. The main emissions from the facility are volatile organic compound (VOC) and particulate matter emissions from the spray paint booths. The facility uses particulate matter control devices to control emissions from the spray booths and abrasive blasting operations. The facility has accepted limits on potential to emit (PTE) such that it avoids major source classification under the Prevention of Significant Deterioration (PSD) program, the Part 70 program, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) program.

1.3 Facility Emissions:

Table 2. Total Facility Potential to Emit Summary (not Including Insignificant Activities)

	PM tpy	**PM_{10}** tpy	**$PM_{2.5}$** tpy	**SO_2** tpy	**NO_x** tpy	**CO** tpy	**CO_2e** tpy	**VOC** tpy	**Single HAP** tpy	**All HAPs** tpy
Total Facility Limited Potential Emissions	6.15	6.15	6.15	0.06	9.72	7.35	11,900	48.5	8.5	12.2
2012 Actual Emissions	0.48	0.36	0.36	<0.01	0.56	0.42	685	16	0.98	3.72

Table 3. Facility Classification

Classification	**Major/Affected Source**	**Synthetic Minor/Area**	**Minor/Area**
PSD		VOC	PM, PM_{10}, $PM_{2.5}$, CO, SO_2, NO_x
Part 70 Permit Program		VOC, PM, PM_{10}, $PM_{2.5}$, HAPs	CO, SO_2, NO_x
Part 63 NESHAP		HAPs	

2. Regulatory and/or Statutory Basis

New Source Review

The facility has accepted limits such that it remains below PSD major source thresholds. Prior to Acuity Brands Lighting, Inc acquiring the facility, the previous owner/operator did not obtain the appropriate air permits for construction, operation, and modification of the facility. As summarized in Table 4 below, the facility's potential emissions exceeded VOC, PM_{10}, and $PM_{2.5}$ PSD significance thresholds with the installation of paint booth 5 (EU 043) in 1999 and the installation of paint booths 3 and 4 (EUs 041 and 042) in 2001. However, major NSR permitting was not completed prior to these modifications. Thus, in addition to failing to obtain a permit for these actions, the owners/operators of the facility violated New Source Review requirements. The facility's actual emissions have never exceeded major source thresholds. In this situation (PTE above PSD major source thresholds, actuals below PSD major source thresholds) a facility is required to achieve BACT-equivalent reductions. The MPCA can exercise discretion in whether or not to allow a facility to obtain a synthetic minor permit after it achieves BACT-equivalent reductions.

Given the fact that the facility's actual emissions are low, the MPCA finds it reasonable to allow the Permittee to obtain a permit with "synthetic" minor limits. (See "Injunctive Relief" under Section 3 "Technical Information" for further discussion.)

Table 4. Evaluation of Unpermitted Modifications

Year	Description	Uncontrolled VOC PTE (tpy)	Uncontrolled PM/PM_{10}/ $PM_{2.5}$ PTE (tpy)	Uncontrolled VOC 2011 actuals (tpy)	Uncontrolled PM/PM_{10}/ $PM_{2.5}$ 2011 actuals (tpy)	Triggered PSD?
Prior to 1999	Facility PTE (Includes Paint Booths 1 & 2; EU 039 & EU 040)	310	36	NA	NA	No
1999	Installation of Paint Booth 5 (EU 043)	160	18	2.4	0.2	Yes (VOC/PM_{10}/ $PM_{2.5}$)
2000	Installation of Degreaser (EU 044)	36	0	0.0	0.0	No
2001	Installation of Paint Booths 3 & 4 (EU 041 & EU 042)	230	38	3.6	0.2	Yes (VOC/PM/ PM_{10}/$PM_{2.5}$)

Part 70 Permit Program

The facility has taken limits on VOC, combined and single HAPs, PM, PM_{10}, and $PM_{2.5}$ emissions such that its potential to emit is below all Part 70 major source thresholds. Additionally, the facility does not meet any other criteria listed in Minn. R. 7007.0200 that would require the source to obtain a Part 70 permit.

New Source Performance Standards (NSPS)

The Permittee has stated that there are no New Source Performance Standards applicable to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Upon issuance of this permit, the facility is an area source of HAPs because this permit action establishes limits on both combined and single HAPs below the major source thresholds. However, prior to the issuance of this permit, Winona Lighting had a PTE of both combined and single HAP above 25 tpy and 10 tpy respectively and therefore was a major source of HAPs. Winona Lighting is subject to all applicable major source NESHAPs for which the compliance date has already passed as of the date of permit issuance. For all applicable NESHAPs with compliance dates after the issuance date of this permit, Winona Lighting is an area source of HAPs. Based on this criteria, Winona Lighting is subject to 40 CFR pt. 63, subp. MMMM, National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products (compliance date: January 2, 2007) and 40 CFR pt. 63, subp. DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Source: Industrial, Commercial, and Institutional Boilers and Process Heaters (compliance date: January 31, 2013 or startup, whichever is later).

The facility is not subject to 40 CFR pt. 63, subp. T, National Emission Standards for Hazardous Air Pollutants for Halogenated Solvent Cleaning because the facility no longer uses a halogenated solvent in the degreaser. The permit also contains a requirement prohibiting Winona Lighting from using any halogenated solvent in the degreaser.

The facility is not subject to 40 CFR pt. 63, subp. 6J, National Emission Standards for Hazardous Air pollutants for Industrial, Commercial, and Institutional Boilers at Area sources. Gas-fired boilers are not subject to this subpart. The boilers at Winona Lighting meet the definition of gas-fired boilers in 40 CFR Section 63.11237.

Compliance Assurance Monitoring (CAM)

Winona Lighting is not subject to CAM because CAM is only applicable to Part 70 sources.

Environmental Review & Air Emissions Risk Analysis (AERA)

The facility and this permit do not trigger any of the mandatory Environmental Review categories in Minn. R. 4410.4400; therefore an Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) are not required and the facility is not required to perform an AERA.

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

Table 5. Regulatory Overview of Facility

Level*	Applicable Regulations	Comments:

Level*	Applicable Regulations	Comments:
GP 001: Combustion Equipment	Minn. R. 7011.0515	Standards of Performance for New Indirect Heating Equipment: The units in GP 001, are subject to his standard because - The units are indirect heating equipment for which a standard of performance has not been promulgated in a specific rule - All units in GP 001 were constructed or modified after January 31, 1977 Applicable limits were determined based on the following: - The facility is outside the Mpls-St. Paul Air Quality Control Region and outside of Duluth - The rated heat input of each piece of equipment is less than 250 MMBtu/hr - The rated heat input of all indirect heating equipment on site is less than 250 MMBtu/hr - The facility burns gaseous fuels
GP 002: Misc. Metal Parts Coating	40 CFR pt. 63, subp. MMMM & Minn. R. 7011.8090	NESHAP for Surface Coating of Miscellaneous Metal Parts and Products: The facility is subject to this standard because it coats metal parts and products and uses ≥ 250 gal/yr HAP-containing coatings and, upon the compliance date of the standard, the facility was a major source of HAPs. The facility falls into the general use coating subcategory (for all surface coating operations that are not high performance, magnet wire, rubber-to-metal, or extreme performance fluoropolymer coating operations). The facility has chosen to comply with the emission rate without add-on control option.
GP 003: Group Limits	Title I Condition: to avoid major source classification under 40 CFR § 52.21 & Minn. R. 7007.3000; 40 CFR § 70.2 & Minn. R. 7007.0200; 40 CFR pt. 63	PSD, Part 70, and NESHAPs: Limits on VOC to avoid classification as a major source under PSD and Part 70; limits on total HAPs, and single HAP to avoid classification as a major source under Part 70 and the NESHAP program; and limits on PM, PM_{10}, and $PM_{2.5}$, to avoid classification as a major source under Part 70.
GP 004: Misc. Process Equip.	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment: The units in GP 004 are subject to this standard because they meet the definition of "industrial process equipment" in Minn. R. 7011.0700 for which a standard of performance has not been promulgated in a specific rule.

Level*	Applicable Regulations	Comments:
CE 003, 004, & 007: Panel Filters	Limit to avoid major source classification under 40 CFR § 70.2 & Minn. R.7007.0200	Part 70: The control efficiency from these panel filters is claimed in order to keep the facility's PM, PM_{10}, and $PM_{2.5}$ PTE below Part 70 major source thresholds (but the control is not needed to maintain the source below PSD major source thresholds).
GP 006: Process Heaters	40 CFR pt. 63, subp. DDDDD	NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters: Process heaters at the facility that qualify as "new units" (units for which construction commenced after June 4, 2010) are subject to the standard because upon the compliance date of the standard for these units (January 31, 2013 or startup, whichever was later) the source was a major source of HAPs. The facility is not subject to any limits, only work practice standards from this subpart.
CE 001: Fabric Filter	Minn. R. 7007.0800 & Minn. R. 7011.0715	Permit Content – emission limitations and standards, monitoring, recordkeeping, and operation of pollution control equipment & Industrial Process Equipment Rule: CE 001 is required for ensuring compliance with the Industrial Process Equipment Rule (IPER) limit for EU 045, but the control efficiency is no required to limit PTE below major source thresholds for PSD, Part 70, or the NESHAP program.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3. Technical Information

NESHAP information

In 2012 the facility made several changes including transitioning to the use of non-HAP containing solvents, reducing the use of materials with a high HAP content, and increasing the use of high solids content coatings. With these changes the facility is able to maintain its HAP emissions below major source thresholds going forward.

Injunctive Relief and BACT Equivalency Analysis

For the reasons described under Section 2 "New Source Review", the Permittee is subject to injunctive relief because of violations of NSR. The Permittee was required, by a consent decree, to conduct a "BACT-like" analysis on EU 043 (Paint Booth 5), EU 041 (Paint Booth 3), and EU 042 (Paint Booth 4). Since the consent decree and submittal of the permit application, the Permittee has removed EU 041 and EU 042 from the facility. The BACT-like analysis was performed for VOC, PM_{10}, and $PM_{2.5}$ emissions using the "top-down" BACT methodology. The analysis included:

- Review of the BACT/RACT/LAER Clearinghouse for similar operations (for which there are few results in the database for this type of equipment);
- Evaluation of the categories of VOC, PM_{10}, and $PM_{2.5}$ control technology;

- Evaluation of converting a 3-sided booth to a total enclosure; and
- Evaluation of reducing the VOC content of coatings.

The analysis found that add-on control equipment, beyond the panel filters currently installed at the facility, is economically infeasible.

The MPCA revised the analysis to ensure that it conservatively estimated the cost of installing additional control equipment and/or enclosing the booth. This analysis is included in Attachment 3. The MPCA's analysis yielded the same result - that add-on control equipment or enclosing the booth are both not cost effective. The MPCA's changes to the analysis included the following:

- Using the minimum value of the annualized cost range rather than the mean value
- Using the GP 003 VOC and PM/PM_{10}/$PM_{2.5}$ emission limits to calculate emission reductions rather than the actual reduction for just Paint Booth 5
- Using a more conservative estimate of the ratio of 2012 to 2002 dollars

As described in USEPA's *Guidance on the Appropriate Injunctive Relief for Violations of Major New Source Review Requirements Memorandum* (November 17, 1998) the appropriate injunctive relief is subject to "consideration of compelling circumstances…[and is] a case specific, fact-intensive determination…" The compelling circumstances in the case of Winona Lighting that justify allowing the source to maintain a "synthetic" minor classification going forward are:

1) The facility has low actual emissions
2) The facility has permanently removed two traditional spray booths (EU 041 and EU 042) and replaced them with a low-emitting powder coating operation. (Note that the removal of EU 041 and EU042 does not affect the outcome of the BACT-like analysis. In other words, the MPCA is not allowing the facility to "correct" a violation to avoid installing add-on controls.)
3) As part of the enforcement and permitting process, the Permittee switched to coatings with lower HAP and VOC contents

The results of the BACT-like analysis show that with the limits Winona Lighting has proposed for VOC, PM_{10}, and $PM_{2.5}$ in place, the installation of additional add-on control equipment would be economically infeasible (unreasonable $/ton VOC and $/ton $PM_{2.5}$ or PM_{10}). The facility also already uses panel filters to control particulate matter emissions from all spray booths. The requirements to properly operate and maintain these filters will be made enforceable through this permit action. The BACT-equivalent reductions are achieved by these limits proposed by Winona Lighting. These limits, contained in GP 003 of the permit, are not cited as BACT because the limits are not the result of a PSD permitting action, but rather the result of a BACT-like analysis performed as required by injunctive relief.

The permitting authority also has discretion when applying BACT-like limits in an injunctive relief situation. For Winona Lighting, rather than only applying the BACT-like limits on VOC, PM_{10}, and $PM_{2.5}$ to EU 043, and having a separate limit on all spray booths to avoid PSD and Part 70, the Permittee

proposed that all paint booths are subject to these limits and that these limits will also serve as limits to avoid major source classification under PSD and Part 70. Given the nature of this equipment and these emissions limits, the MPCA agrees that this is a much more streamlined and practical approach that still achieves BACT-equivalent reductions.

3.1 Calculations of Potential to Emit

Attachment 1 contains detailed spreadsheets and supporting information prepared by the MPCA and the Permittee. A summary of the calculation methods is presented below.

Sand Blasting (EU 045) – The Permittee has calculated PTE for the sandblaster using STAPPA/ALAPCO emissions factors. The Permittee used the spreadsheet provided on the MPCA's Small Business Environmental Assistance Program website to calculate emissions from this unit http://www.pca.state.mn.us/index.php/view-document.html?gid=16355. For this operation, the Permittee conservatively assumed that $PM_{10} = PM_{2.5}$. A control efficiency for fabric filters, consistent with the efficiencies listed in Minn. R. 7011.0070 (99% for PM and 93% for PM10), was applied to the uncontrolled emission rates to determine the controlled emission rate. A control efficiency of 93% was also used for $PM_{2.5}$. It is unlikely that the control efficiency for PM_{10} and $PM_{2.5}$ is the same; however, given the fact that uncontrolled $PM_{2.5}$ emissions are greatly overestimated by assuming that $PM_{10} = PM_{2.5}$ (AP-42 Section 13.2.6, Table 13.2.6-1 indicates that for certain types of sandblasting operations the ratio of PM_{10} to $PM_{2.5}$ is 10 to 1) the MPCA finds it reasonable to use a control efficiency of 93% for $PM_{2.5}$ and reasonable to conclude that $PM_{2.5}$ potential controlled emissions are not underestimated. Similarly, it should be noted that the $PM_{2.5}$ control efficiency for CE 001 is not need to comply with any applicable requirements.

Combustion Equipment – The PTE of all criteria pollutants and GHGs from combustion processes are calculated based on AP-42 emission factors for natural gas combustion and the rated capacity of the equipment.

Surface Coating Operations – The PTE from the spray booths are based on worst case VOC, solids, single HAP, and combined HAP content for two different types of coating processes, "single pass" and "three step" and the maximum application rate for each booth.

Degreaser (EU 044) – The uncontrolled PTE of the degreaser is based on worst-case VOC content of the solvent and maximum usage of material. All VOC used is considered emitted. The maximum usage of material is based on actual 2011 usage and actual hours of operation scaled to 8760 hrs/yr with a safety factor of 2 applied. It should be noted that the degreaser is included in the ton/yr VOC limit at GP 003, so the uncertainty associated with this calculation method does not affect the calculation of limited PTE used to determine the facility's standing under PSD and Part 70.

3.3 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of the facility violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 6 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate

Table 6. Periodic Monitoring

Level*	Requirement (basis)	Additional Monitoring	Discussion
GP 001: Combustion Equipment	Opacity ≤ 20% With exceptions PM ≤ 0.40 lb/MMBtu (Minn. R. 7011.0515)	Monthly records of fuel type	All units use natural gas; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition. Design based PTE for each unit, using AP-42, is 0.0072 compared to the rule limit of 0.40 lb/MMBtu.
GP 002: Misc. Metal Parts Coating	Organic HAPs ≤ 2.6 lb/gallon coating solids (40 CFR pt. 63, subp. MMMM & Minn. R. 7011.8090)	No additional monitoring	The monitoring associated with the NESHAP is sufficient to provide a reasonable assurance of compliance with the NESHAP limits.

Level*	Requirement (basis)	Additional Monitoring	Discussion
GP 003: VOC, HAP, and PM Limits	VOC ≤ 48 tpy (Title I limit to avoid 40 CFR § 52.21 & Minn. R. 7007.3000); Single HAP ≤ 8.5 tpy; Combined HAPs ≤ 12 tpy (Title I limit to avoid, 40 CFR § 63.2 and 40 CFR § 70.2 & Minn. R. 7007.0200 $PM/PM_{10}/PM_{2.5}$ ≤ 5 tpy (limit to avoid 40 CFR § 70.2 & Minn. R. 7007.0200 (all 12-mo. rolling sum)	Daily records of paint and solvent usage, ongoing records of VOC, HAP, and solids content, 12-mo. rolling sum calculations, records associated with control equipment at CE 003, 004, and 007.	Credit can be taken for waste materials collected and shipped off-site (dispensed - waste = emissions). Since this is done at most monthly, calculating emissions more frequently than monthly would result in large spikes (while waste is accumulating) and dips (when waste is shipped) – resulting in possible paperwork violations and days with negative emissions. For these reasons, 12 month rolling limits are reasonable for this Facility

Level*	Requirement (basis)	Additional Monitoring	Discussion
GP 004: Misc. Process Equip.	PM ≤ 0.30 gr/dscf Opacity ≤ 20% (Minn. R. 7011.0715)	Monitoring associated with control equipment at CE 001, 003, 004, and CE 007 of the permit	If operating at maximum capacity, EUs 039, 040, 043, and 045 require the operation of control equipment to meet the grain loading limit of Minn. R. 7011.0715. Therefore, the Permittee is required to operate the control equipment at all times that EUs 039, 040, 043, and 045 are operating. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition. Monitoring associated with CE 001, 003, 004, and 007 ensure that the control equipment is operating properly and ensures that the emission units are in compliance with the grain loading limit at all times. EU 044 is not expected to generate more than incidental amounts of particulate matter.
CE 003/CE 007: Panel Filters	Control Efficiency: $PM/PM_{10}/PM_{2.5}$ ≥ 68%; Pressure Drop: $0.05 \leq \Delta P \leq 0.40$ in H_2O (Limit to avoid 40 CFR § 70.2 & Minn. R. 7007.0200)	Daily records of pressure drop, periodic inspections, corrective actions, O&M plan; annual hood evaluations	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.

Level*	Requirement (basis)	Additional Monitoring	Discussion
CE 004: Panel Filter	Control Efficiency: $PM/PM_{10}/PM_{2.5}$ ≥ 85 %; Pressure Drop: 0.05 ≤ ΔP ≤ 0.40 in H_2O (Limit to avoid 40 CFR § 70.2 & Minn. R. 7007.0200)		
CE 001: Fabric Filter	Control Efficiency: PM ≥ 99%; $PM_{10}/PM_{2.5}$ ≥ 93% Pressure Drop: 0.01 ≤ ΔP ≤ 0.50 in H_2O (Minn. R. 7007.0800 & Minn. R. 7011.0715)	Daily records of pressure drop, periodic inspections, corrective actions, O&M plan	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3.4 Insignificant Activities

Winona Lighting Inc has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix A to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 1 of this TSD for PTE information for the insignificant activities.

Table 6. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
Infrared electric ovens Minn. R. 7007.1300, subp. 3(B)(1)	Opacity ≤ 20% (Minn. R. 7011.0105 or 7011.0110)	These units are not likely to have any emissions of particulate matter at this site (used to dry paint). It is highly unlikely that they could violate the applicable requirement.
Nonhazardous air pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of nonhazardous air pollutant VOCs and with a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit: Minn. R. 7007.1300, subp. 3(E)(2)	PM & Opacity (Minn. R. 7011.0710/0715)	Winona Lighting has aqueous cleaner tanks that may contain very low percentages of non-HAP VOCs. These units are not likely to have any emission of particulate matter.
Brazing, soldering or welding equipment Minn. R. 7007.1300, subp. 3(H)(3)	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/715)	For these units, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Miscellaneous cleaning operations Minn. R. 7007.1300(H)(7)	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0610+ Minn. R. 7011.0710/715)	Winona Lighting has parts cleaning and rinsing operations that use alkaline and phosphate cleaners. For these units, there are some factors available for the burners, but very little information regarding the cleaning operation itself. However, based on general knowledge of how they operate, it is highly unlikely that they could violate the applicable requirement or that testing would be feasible.
Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source	PM, variable depending on airflow or process weight rate Opacity ≤ 20% (Minn. R. 7011.0715)	While spray equipment will have the potential to emit particulate matter, these particular activities are those not associated with production, so they would be infrequent and usually occur outdoors. Testing or monitoring is not feasible.

Insignificant Activity	General Applicable Emission limit	Discussion
Minn. R. 7007.1300, subp. 3(K)		
Equipment venting PM/PM_{10} inside a building, provided that emissions from the equipment are: a). filtered through an air cleaning system; and b). vented inside of the building 100% of the time Minn. R. 7008.4110	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0715)	Winona Lighting has buffing and sanding operations that qualify under this subpart. For these units, it is highly unlikely that they could violate the applicable requirement. In addition, these units are vented inside a building, so testing for PM or opacity is not feasible.

3.5 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. There are a few areas in the permit that deviate slightly from Delta guidance. These areas are described below.

GP 007 does not appear in the permit as a group of units with common requirements. It is used only for purposes of reporting HAP emissions from combustion of natural gas. It is allowable to report HAP emissions as a group because the facility is not a major source of HAPs.

Although this is a first-time permit, some EU and CE numbers are missing in the facility description. These numbers are missing because since the submittal of the original permit application, the facility has removed some emission units and control equipment.

Finally, some requirements are contained in Appendices rather than the CD-01. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be electronically tracked (e.g., limits, submittals, etc.), should be in Table A or B of the permit. The main reason is that the appendices are word processing sections and are not part of the electronic tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Instead, staff must generate these.

3.6 Comments Received

Public Notice Period: August 5, 2013 – September 3, 2013
EPA 30-day Review Period: August 5, 2013 – September 3, 2013

No comments were received during the public notice period or the EPA 30-day review period.

4. Permit Fee Assessment

Attachment 2 to this TSD contains the MPCA's assessment of Application and Additional Points used to determine the permit application fee for this permit action as required by Minn. R. 7002.0019. Although this permit action is the issuance of a first-time state individual operating permit, the application received on August 31, 2012 was for a first-time Part 70 permit. The Permittee was assessed an application fee for a first-time Part 70 application under Minn. R. 7002.0019, subp. 1A because, per MPCA policy, application fees are based on the type of permit for which a Permittee applies and not the type of permit that is issued to the Permittee.

Under Minn. R. 7002.0019, subp. 2 the Permittee is assessed additional points for the incorporation of two NESHAP standards (charged per NESHAP) and limits to remain below the NESHAP, Part 70, and PSD programmatic regulatory threshold (charged per program avoided). The Permittee is not charged for the BACT-like analysis of $PM_{2.5}$, PM_{10}, and VOC for Paint Boot #5 as Minn. R. 7002.0019, subp. 2B only applies to BACT analyses conducted as part of a PSD permit action.

5. Conclusion

Based on the information provided by Winona Lighting, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 16900092-001 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Kelsey Suddard (permit writer/engineer)
Brent Rohne (enforcement team member)
Hassan Bouchareb (peer reviewer)

AQ File No. 4510A; DQ 4099

Attachments:
1. PTE Summary and Calculation Spreadsheets
2. Points Calculator
3. MPCA BACT-Like Cost Analysis
4. Facility Description and CD-01 Forms

Attachment 1: PTE Summary and Calculation Spreadsheet

SUMMARY OF 2012 POTENTIAL FACILITY EMISSIONS
FROM PROPOSED MODIFICATION
(UNCONTROLLED)
WINONA LIGHTING - WINONA, MINNESOTA

Emission Unit No.	*Operator's Description*	*Year Installed*	*Heat Input (MMBTU/hr)*	*Nitrogen Oxides (tons/yr)*	*Carbon Monoxide (tons/yr)*	*Particulate Matter (tons/yr)*	*PM-10 (tons/yr)*	*PM-2.5 (tons/yr)*	*VOC (tons/yr)*	*Sulfur Dioxide (tons/yr)*	*Total HAPS (tons/yr)*	*Carbon Dioxide (tons/yr)*	*Nitrogen Dioxide (tons/yr)*	*Methane (tons/yr)*	*CO_2 Equivalent (tons/yr)*
001	Space Heater UH-1	1/15/2007	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
002	Space Heater UH-2	6/1/1999	0.225	0.09	0.04	0.01	0.01	0.01	0.01	0.00	0.00	112.63	0.00	0.00	113.31
003	Space Heater UH-3	1/1/1998	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
004	Space Heater UH-4	1/1/1998	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
005	Space Heater UH-5	9/1/1999	0.225	0.09	0.04	0.01	0.01	0.01	0.01	0.00	0.00	112.63	0.00	0.00	113.31
006	Space Heater UH-6	12/21/1999	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
007	Space Heater UH-7	12/23/2011	0.250	0.10	0.04	0.01	0.01	0.01	0.01	0.00	0.00	125.14	0.00	0.00	125.90
008	Space Heater UH-8	9/1/1999	0.250	0.10	0.04	0.01	0.01	0.01	0.01	0.00	0.00	125.14	0.00	0.00	125.90
009	Space Heater UH-9	9/1/1999	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
010	Space Heater UH-10	9/1/2005	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
011	Space Heater UH-11	9/1/2005	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
012	Space Heater UH-12	9/1/2005	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
013	Space Heater UH-13	9/1/2007	0.060	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	30.03	0.00	0.00	30.22
014	Space Heater UH-14	6/1/2000	0.075	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	37.54	0.00	0.00	37.77
015	Space Heater UH-15	6/1/2000	0.160	0.06	0.03	0.01	0.01	0.01	0.00	0.00	0.00	80.09	0.00	0.00	80.58
016	Space Heater UH-16	1/1/2008	0.250	0.10	0.04	0.01	0.01	0.01	0.01	0.00	0.00	125.14	0.00	0.00	125.90
019	Space Heater TR-1	9/1/2007	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
020	Space Heater TR-2	9/1/2007	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
021	Space Heater TR-3	2/1/1996	0.150	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	75.09	0.00	0.00	75.54
022	Space Heater TR-4	9/1/2007	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
023	Space Heater TR-5	9/1/2007	0.200	0.08	0.03	0.01	0.01	0.01	0.00	0.00	0.00	100.11	0.00	0.00	100.72
024	Space Heater TR-6	1/1/1998	0.080	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	40.05	0.00	0.00	40.29
025	Roof-Top Unit RTU-1	9/1/2005	0.115	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	57.57	0.00	0.00	57.92
026	Roof-Top Unit RTU-2		0.115	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	57.57	0.00	0.00	57.92
027	Roof-Top Unit RTU-3	8/1/1998	0.250	0.10	0.04	0.01	0.01	0.01	0.01	0.00	0.00	125.14	0.00	0.00	125.90
028	Roof-Top Unit RTU-4	9/1/2007	0.250	0.10	0.04	0.01	0.01	0.01	0.01	0.00	0.00	125.14	0.00	0.00	125.90
029	Furnace F-1	6/1/1984	0.056	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	28.03	0.00	0.00	28.20
030	Furnace F-2	5/1/1999	0.044	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	22.03	0.00	0.00	22.16
031	Boiler #1	11/1/1999	0.400	0.17	0.14	0.01	0.01	0.01	0.01	0.00	0.00	200.23	0.00	0.00	201.45
032	Boiler #2	11/1/1999	0.300	0.13	0.11	0.01	0.01	0.01	0.01	0.00	0.00	150.17	0.00	0.00	151.09
033	Boiler #3	11/1/1999	0.300	0.13	0.11	0.01	0.01	0.01	0.01	0.00	0.00	150.17	0.00	0.00	151.09
034	Boiler #4	11/1/1999	0.300	0.13	0.11	0.01	0.01	0.01	0.01	0.00	0.00	150.17	0.00	0.00	151.09
035	Make-Up Air Unit MAU-1	3/1/1994	0.918	0.38	0.32	0.03	0.03	0.03	0.02	0.00	0.01	459.52	0.01	0.01	462.32
037	Make-Up Air Unit MAU-3	3/1/1999	2.160	0.90	0.76	0.07	0.07	0.07	0.05	0.01	0.02	1081.23	0.02	0.02	1087.81
038	Water Heater	11/1/2010	0.043	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	21.27	0.00	0.00	21.40
039	Paint Booth 1 [1]	1/1/1978				52.27	52.27	52.27	161.42		81.71				
040	Paint Booth 2 [1]	3/1/1998				52.27	52.27	52.27	161.42		81.71				
043	Paint Booth 5 [1]	3/1/1999				34.85	34.85	34.85	107.61		54.47				
044	Degreaser	4/1/2000							22.57						
045	Sand Blaster	9/1/1997				8.11	5.67	5.67							
046	Timesaver (INSIGNIFICANT)	10/1/1991													
047	Heater 1	New Project	2.500	1.04	0.88	0.08	0.08	0.08	0.06	0.01	0.02	1251.43	0.02	0.02	1259.04
048	Heater 2	New Project	2.500	1.04	0.88	0.08	0.08	0.08	0.06	0.01	0.02	1251.43	0.02	0.02	1259.04
049	Drying Oven	New Project	1.000	0.42	0.35	0.03	0.03	0.03	0.02	0.00	0.01	500.57	0.01	0.01	503.62
050	PC Curing Oven	New Project	1.500	0.63	0.53	0.05	0.05	0.05	0.03	0.00	0.01	750.86	0.01	0.01	755.43
051	Curing Oven	New Project	1.500	0.63	0.53	0.05	0.05	0.05	0.03	0.00	0.01	750.86	0.01	0.01	755.43
052	Burn Off Oven	New Project	0.800	0.33	0.28	0.03	0.03	0.03	0.02	0.00	0.01	400.46	0.01	0.01	402.89
053	Heater 3	New Project	2.500	1.04	0.88	0.08	0.08	0.08	0.06	0.01	0.01	1251.43	0.02	0.02	1259.04
	Welding (INSIGNIFICANT)					0.06	0.06	0.06							
FACILITY WIDE TOTALS			**21.68**	**8.92**	**6.68**	**148.24**	**145.81**	**145.81**	**453.52**	**0.05**	**218.04**	**10850.14**	**0.20**	**0.21**	**10916.17**
"PROPOSED NEW EQUIPMENT EMISSIONS"			12.30	5.13	4.31	0.45	0.45	0.45	0.28	0.03	0.08	6157.03	0.11	0.12	6194.50
Existing Equipment			9.38	3.79	2.37	147.79	145.36	145.36	453.24	0.02	217.96	4693.11	0.09	0.09	4721.67
Natural Gas Combustion Group (EU001-038, 047-053)			21.68	8.92	6.68	0.74	0.74	0.74	0.50	0.05	0.16	10850.14	0.20	0.21	10916.17
Paint and Solvent Group (EU039-044)			0.00	0.00	0.00	139.39	139.39	139.39	453.02	0.00	217.89	0.00	0.00	0.00	0.00
Sandblaster and Timesaver (EU045-046)			0.000	0.000	0.000	8.105	5.674	5.674	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes:
(1) - Additional HAP emissions provided on separate summary table

SUMMARY OF 2012 POTENTIAL FACILITY EMISSIONS
FROM PROPOSED MODIFICATION
(CONTROLLED/LIMITED)
WINONA LIGHTING - WINONA, MINNESOTA

Emission Unit No.	*Operator's Description*	*Heat Input (MMBTU/hr)*	*Nitrogen Oxides (tons/yr)*	*Carbon Monoxide (tons/yr)*	*Particulate Matter (tons/yr)*	*PM-10 (tons/yr)*	*VOC (tons/yr)*	*Sulfur Dioxide (tons/yr)*	*Total HAPS (tons/yr)*	*Carbon Dioxide (tons/yr)*	*Nitrogen Dioxide (tons/yr)*	*Methane (tons/yr)*	*CO_2 Equivalent (tons/yr)*
001	Space Heater UH-1	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
002	Space Heater UH-2	0.225	0.09	0.04	0.01	0.01	0.01	0.00	*0.00*	112.63	0.00	0.00	113.31
003	Space Heater UH-3	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
004	Space Heater UH-4	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
005	Space Heater UH-5	0.225	0.09	0.04	0.01	0.01	0.01	0.00	*0.00*	112.63	0.00	0.00	113.31
006	Space Heater UH-6	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
007	Space Heater UH-7	0.250	0.10	0.04	0.01	0.01	0.01	0.00	*0.00*	125.14	0.00	0.00	125.90
008	Space Heater UH-8	0.250	0.10	0.04	0.01	0.01	0.01	0.00	*0.00*	125.14	0.00	0.00	125.90
009	Space Heater UH-9	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
010	Space Heater UH-10	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
011	Space Heater UH-11	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
012	Space Heater UH-12	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
013	Space Heater UH-13	0.060	0.02	0.01	0.00	0.00	0.00	0.00	*0.00*	30.03	0.00	0.00	30.22
014	Space Heater UH-14	0.075	0.03	0.01	0.00	0.00	0.00	0.00	*0.00*	37.54	0.00	0.00	37.77
015	Space Heater UH-15	0.160	0.06	0.03	0.01	0.01	0.00	0.00	*0.00*	80.09	0.00	0.00	80.58
016	Space Heater UH-16	0.250	0.10	0.04	0.01	0.01	0.01	0.00	*0.00*	125.14	0.00	0.00	125.90
019	Space Heater TR-1	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
020	Space Heater TR-2	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
021	Space Heater TR-3	0.150	0.06	0.03	0.00	0.00	0.00	0.00	*0.00*	75.09	0.00	0.00	75.54
022	Space Heater TR-4	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
023	Space Heater TR-5	0.200	0.08	0.03	0.01	0.01	0.00	0.00	*0.00*	100.11	0.00	0.00	100.72
024	Space Heater TR-6	0.080	0.03	0.01	0.00	0.00	0.00	0.00	*0.00*	40.05	0.00	0.00	40.29
025	Roof-Top Unit RTU-1	0.115	0.05	0.02	0.00	0.00	0.00	0.00	*0.00*	57.57	0.00	0.00	57.92
026	Roof-Top Unit RTU-2	0.115	0.05	0.02	0.00	0.00	0.00	0.00	*0.00*	57.57	0.00	0.00	57.92
027	Roof-Top Unit RTU-3	0.250	0.10	0.04	0.01	0.01	0.01	0.00	*0.00*	125.14	0.00	0.00	125.90
028	Roof-Top Unit RTU-4	0.250	0.10	0.04	0.01	0.01	0.01	0.00	*0.00*	125.14	0.00	0.00	125.90
029	Furnace F-1	0.056	0.02	0.01	0.00	0.00	0.00	0.00	*0.00*	28.03	0.00	0.00	28.20
030	Furnace F-2	0.044	0.02	0.01	0.00	0.00	0.00	0.00	*0.00*	22.03	0.00	0.00	22.16
031	Boiler #1	0.400	0.17	0.14	0.01	0.01	0.01	0.00	*0.00*	200.23	0.00	0.00	201.45
032	Boiler #2	0.300	0.13	0.11	0.01	0.01	0.01	0.00	*0.00*	150.17	0.00	0.00	151.09
033	Boiler #3	0.300	0.13	0.11	0.01	0.01	0.01	0.00	*0.00*	150.17	0.00	0.00	151.09
034	Boiler #4	0.300	0.13	0.11	0.01	0.01	0.01	0.00	*0.00*	150.17	0.00	0.00	151.09
035	Make-Up Air Unit MAU-1	0.918	0.38	0.32	0.03	0.03	0.02	0.00	*0.01*	459.52	0.01	0.01	462.32
037	Make-Up Air Unit MAU-3	2.160	0.90	0.76	0.07	0.07	0.05	0.01	*0.02*	1081.23	0.02	0.02	1087.81
038	Water Heater	0.043	0.02	0.01	0.00	0.00	0.00	0.00	*0.00*	21.27	0.00	0.00	21.40
039	Paint Booth 1 [(1)]				2.39	2.39	12.67		*81.71*				
040	Paint Booth 2 [(1)]				0.79	0.79	12.67		*81.71*				
043	Paint Booth 5 [(1)]				3.10	3.10	12.67		*54.47*				
044	Degreaser						10.00		*0.00*				
GP007					**5.00**	**5.00**	**48.00**		*12.00*				
045	Sand Blaster				0.40	0.40			*0.00*				
046	Timesaver (INSIGNIFICANT)								*0.00*				
047	Heater 1	2.500	1.04	0.88	0.08	0.08	0.06	0.01	*0.02*	1251.43	0.02	0.02	1259.04
048	Heater 2	2.500	1.04	0.88	0.08	0.08	0.06	0.01	*0.02*	1251.43	0.02	0.02	1259.04
049	Drying Oven	1.000	0.42	0.35	0.03	0.03	0.02	0.00	*0.01*	500.57	0.01	0.01	503.62
050	PC Curing Oven	1.500	0.63	0.53	0.05	0.05	0.03	0.00	*0.01*	750.86	0.01	0.01	755.43
051	Curing Oven	1.500	0.63	0.53	0.05	0.05	0.03	0.00	*0.01*	750.86	0.01	0.01	755.43
052	Burn Off Oven	0.800	0.33	0.28	0.03	0.03	0.02	0.00	*0.01*	400.46	0.01	0.01	402.89
053	Heater 3	2.500	1.04	0.88	0.08	0.08	0.06	0.01	*0.01*	1251.43	0.02	0.02	1259.04
	Welding (INSIGNIFICANT)				0.06	0.06			*0.00*				
FACILITY WIDE TOTALS (tons/year)		**21.68**	**8.92**	**6.68**	**6.08**	**6.08**	**48.50**	**0.05**	**12.16**	**10850.14**	**0.20**	**0.21**	**10916.17**

Notes:
(1) - Additional HAP emissions provided on separate summary tab

Summary of 2012 Potential and Limited Facility HAP Emissions

Winona Lighting - Winona, Minnesota

Potential HAP Emissions

Emission Unit No.	*Operator's Description*	*Total HAPs (tons/yr)*	*Xylene (tons/yr)*	*Ethylbenzene (tons/yr)*	*Toluene (tons/yr)*	*Methyl isobutyl ketone (tons/yr)*	*Cumene (tons/yr)*	*Methanol (tons/yr)*	*Hexane (tons/yr)*	*Fomaldehyde (tons/yr)*	*Manganese (tons/yr)*	*Chromium (tons/yr)*	*Nickle (tons/yr)*
EU 039	Paint Booth 1	81.71	64.70	0.00	1.23	0.00	0.00	0.61					
EU 040	Paint Booth 2	81.71	64.70	0.00	1.23	0.00	0.00	0.61					
EU 043	Paint Booth 5	54.47	43.13	0.00	0.82	0.00	0.00	0.41					
EU 044	Degreaser												
EU 049	Welding (INSIGNIFICANT)										0.00216	0.014	0.015
	Natural Gas Combustion	0.1707			0.0003				0.1628	0.0068	0.0000	0.0001	0.0002
Total		218.060	172.529	0.013	3.278	0.000	0.000	1.639	0.163	0.007	0.002	0.015	0.015

Limited/Controlled Emissions

Emission Unit No.	*Operator's Description*	*Total HAPs (tons/yr)*	*Xylene (tons/yr)*	*Ethylbenzene (tons/yr)*	*Toluene (tons/yr)*	*Methyl isobutyl ketone (tons/yr)*	*Cumene (tons/yr)*	*Methanol (tons/yr)*	*Hexane (tons/yr)*	*Fomaldehyde (tons/yr)*	*Manganese (tons/yr)*	*Chromium (tons/yr)*	*Nickle (tons/yr)*
EU 039	Paint Booth 1	4.00	3.00	3.00	3.00	3.00	3.00	3.00					
EU 040	Paint Booth 2	4.00	3.00	3.00	3.00	3.00	3.00	3.00					
EU 043	Paint Booth 5	4.00	3.00	3.00	3.00	3.00	3.00	3.00					
EU 049	Welding (INSIGNIFICANT)										0.00216	0.01440	0.01466
	Natural Gas Combustion	0.1707	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.1628	0.0068	0.0000	0.0001	0.0002
Total		12.171	9.000	9.000	9.000	9.000	9.000	9.000	0.163	0.007	0.002	0.015	0.015

Note:
Emissions from related solvent use (see attached worksheet) were added into the paint booth emissions.

ESTIMATED ACTUAL HAZARDOUS AIR POLLUTANT (HAP) EMISSION ESTIMATES
EXPANDED SCOPE - NATURAL GAS

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	21.68	BTU/hr	

2011 Natual Gas Consumption	3,973,143	ft3/yr
2011 Heat Input	9.38	MMBTU/hr
2012 Est Heat Inputl	22	MMBTU/hr
Estimated Actual NG Consumption for permit	9,185,628	ft3/yr

Combustion Products			*Emission Factor*		*Max Emission lb/yr*	*Max Emission ton/yr*	*Basis of Estimate*
	Lead		0.0005	lb/10^6 ft^3	0.005	2.3E-06	AP-42: Table 1.4-2 dated 7/98
91-57-6	2-Methylnaphthalene		2.40E-05	lb/10^6 ft^3	0.000	1.1E-07	AP-42: Table 1.4-3 dated 7/98
56-49-5	3-Methylchloranthrene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
	7,12-Dimethylbenz(a)anthracene	<	1.60E-05	lb/10^6 ft^3	0.000	7.3E-08	AP-42: Table 1.4-3 dated 7/98
83-32-9	Acenaphthene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
203-96-8	Acenaphthylene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
120-12-7	Anthracene	<	2.40E-06	lb/10^6 ft^3	0.000	1.1E-08	AP-42: Table 1.4-3 dated 7/98
56-55-3	Benz(a)anthracene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
71-43-2	Benzene		2.10E-03	lb/10^6 ft^3	0.019	9.6E-06	AP-42: Table 1.4-3 dated 7/98
50-32-8	Benzo(a)pyrene	<	1.20E-06	lb/10^6 ft^3	0.000	5.5E-09	AP-42: Table 1.4-3 dated 7/98
205-99-2	Benzo(b)fluoranthene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
191-24-2	Benzo(g,h,i)perylene	<	1.20E-06	lb/10^6 ft^3	0.000	5.5E-09	AP-42: Table 1.4-3 dated 7/98
205-82-3	Benzo(k)fluoranthene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
218-01-9	Chrysene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
53-70-3	Dibenzo(a,h)anthracene	<	1.20E-06	lb/10^6 ft^3	0.000	5.5E-09	AP-42: Table 1.4-3 dated 7/98
25321-22-6	Dichlorobenzene		1.20E-03	lb/10^6 ft^3	0.011	5.5E-06	AP-42: Table 1.4-3 dated 7/98
206-44-0	Fluoranthene		3.00E-06	lb/10^6 ft^3	0.000	1.4E-08	AP-42: Table 1.4-3 dated 7/98
86-73-7	Fluorene		2.80E-06	lb/10^6 ft^3	0.000	1.3E-08	AP-42: Table 1.4-3 dated 7/98
50-00-0	Formaldehyde		7.50E-02	lb/10^6 ft^3	0.689	3.4E-04	AP-42: Table 1.4-3 dated 7/98
110-54-3	Hexane		1.80E+00	lb/10^6 ft^3	16.534	8.3E-03	AP-42: Table 1.4-3 dated 7/98
193-39-5	Indeno(1,2,3-cd)pyrene	<	1.80E-06	lb/10^6 ft^3	0.000	8.3E-09	AP-42: Table 1.4-3 dated 7/98
91-20-3	Naphthalene		6.10E-04	lb/10^6 ft^3	0.006	2.8E-06	AP-42: Table 1.4-3 dated 7/98
85-01-8	Phenanathrene		1.70E-05	lb/10^6 ft^3	0.000	7.8E-08	AP-42: Table 1.4-3 dated 7/98
129-00-0	Pyrene		5.00E-06	lb/10^6 ft^3	0.000	2.3E-08	AP-42: Table 1.4-3 dated 7/98
108-88-3	Toluene		3.40E-03	lb/10^6 ft^3	0.031	1.6E-05	AP-42: Table 1.4-3 dated 7/98
7440-38-2	Arsenic		2.00E-04	lb/10^6 ft^3	0.002	9.2E-07	AP-42: Table 1.4-4 dated 7/98
7440-41-7	Beryllium	<	1.20E-05	lb/10^6 ft^3	0.000	5.5E-08	AP-42: Table 1.4-4 dated 7/98
7440-43-9	Cadmium		1.10E-03	lb/10^6 ft^3	0.010	5.1E-06	AP-42: Table 1.4-4 dated 7/98
7440-47-3	Chromium		1.40E-03	lb/10^6 ft^3	0.013	6.4E-06	AP-42: Table 1.4-4 dated 7/98
7440-48-4	Cobalt		8.40E-05	lb/10^6 ft^3	0.001	3.9E-07	AP-42: Table 1.4-4 dated 7/98
7439-96-5	Manganese		3.80E-04	lb/10^6 ft^3	0.003	1.7E-06	AP-42: Table 1.4-4 dated 7/98
7439-97-6	Mercury		2.60E-04	lb/10^6 ft^3	0.002	1.2E-06	AP-42: Table 1.4-4 dated 7/98
7440-02-0	Nickel		2.10E-03	lb/10^6 ft^3	0.019	9.6E-06	AP-42: Table 1.4-4 dated 7/98
7782-49-2	Selenium	<	2.40E-05	lb/10^6 ft^3	0.000	1.1E-07	AP-42: Table 1.4-4 dated 7/98

TOTAL HAP EMISSIONS (lb/yr)	17.342	
TOTAL HAP EMISSIONS (tons/yr)		0.009
MAX INDIVIDUAL HAP EMISSION (lb/yr)		16.534
MAX INDIVIDUAL HAP EMISSION (ton/yr)		0.008

POTENTIAL HAZARDOUS AIR POLLUTANT (HAP) EMISSION ESTIMATES
EXPANDED SCOPE - NATURAL GAS

Heater Fuel Type: Natural Gas
Fuel Heat Content 1,050 BTU/ft^3 AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input 21.68 BTU/hr

Maximum Natual Gas Consumption 180,835,600 ft3/yr

Combustion Products			*Emission Factor*		*Max Emission lb/yr*	*Max Emission ton/yr*	*Basis of Estimate*
	Lead		0.0005	lb/10^6 ft^3	0.090	4.5E-05	AP-42: Table 1.4-2 dated 7/98
91-57-6	2-Methylnaphthalene		2.40E-05	lb/10^6 ft^3	0.004	2.2E-06	AP-42: Table 1.4-3 dated 7/98
56-49-5	3-Methylchloranthrene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
	7,12-Dimethylbenz(a)anthracene	<	1.60E-05	lb/10^6 ft^3	0.003	1.4E-06	AP-42: Table 1.4-3 dated 7/98
83-32-9	Acenaphthene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
203-96-8	Acenaphthylene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
120-12-7	Anthracene	<	2.40E-06	lb/10^6 ft^3	0.000	2.2E-07	AP-42: Table 1.4-3 dated 7/98
56-55-3	Benz(a)anthracene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
71-43-2	Benzene		2.10E-03	lb/10^6 ft^3	0.380	1.9E-04	AP-42: Table 1.4-3 dated 7/98
50-32-8	Benzo(a)pyrene	<	1.20E-06	lb/10^6 ft^3	0.000	1.1E-07	AP-42: Table 1.4-3 dated 7/98
205-99-2	Benzo(b)fluoranthene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
191-24-2	Benzo(g,h,i)perylene	<	1.20E-06	lb/10^6 ft^3	0.000	1.1E-07	AP-42: Table 1.4-3 dated 7/98
205-82-3	Benzo(k)fluoranthene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
218-01-9	Chrysene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
53-70-3	Dibenzo(a,h)anthracene	<	1.20E-06	lb/10^6 ft^3	0.000	1.1E-07	AP-42: Table 1.4-3 dated 7/98
25321-22-6	Dichlorobenzene		1.20E-03	lb/10^6 ft^3	0.217	1.1E-04	AP-42: Table 1.4-3 dated 7/98
206-44-0	Fluoranthene		3.00E-06	lb/10^6 ft^3	0.001	2.7E-07	AP-42: Table 1.4-3 dated 7/98
86-73-7	Fluorene		2.80E-06	lb/10^6 ft^3	0.001	2.5E-07	AP-42: Table 1.4-3 dated 7/98
50-00-0	Formaldehyde		7.50E-02	lb/10^6 ft^3	13.563	6.8E-03	AP-42: Table 1.4-3 dated 7/98
110-54-3	Hexane		1.80E+00	lb/10^6 ft^3	325.504	1.6E-01	AP-42: Table 1.4-3 dated 7/98
193-39-5	Indeno(1,2,3-cd)pyrene	<	1.80E-06	lb/10^6 ft^3	0.000	1.6E-07	AP-42: Table 1.4-3 dated 7/98
91-20-3	Naphthalene		6.10E-04	lb/10^6 ft^3	0.110	5.5E-05	AP-42: Table 1.4-3 dated 7/98
85-01-8	Phenanathrene		1.70E-05	lb/10^6 ft^3	0.003	1.5E-06	AP-42: Table 1.4-3 dated 7/98
129-00-0	Pyrene		5.00E-06	lb/10^6 ft^3	0.001	4.5E-07	AP-42: Table 1.4-3 dated 7/98
108-88-3	Toluene		3.40E-03	lb/10^6 ft^3	0.615	3.1E-04	AP-42: Table 1.4-3 dated 7/98
7440-38-2	Arsenic		2.00E-04	lb/10^6 ft^3	0.036	1.8E-05	AP-42: Table 1.4-4 dated 7/98
7440-41-7	Beryllium	<	1.20E-05	lb/10^6 ft^3	0.002	1.1E-06	AP-42: Table 1.4-4 dated 7/98
7440-43-9	Cadmium		1.10E-03	lb/10^6 ft^3	0.199	9.9E-05	AP-42: Table 1.4-4 dated 7/98
7440-47-3	Chromium		1.40E-03	lb/10^6 ft^3	0.253	1.3E-04	AP-42: Table 1.4-4 dated 7/98
7440-48-4	Cobalt		8.40E-05	lb/10^6 ft^3	0.015	7.6E-06	AP-42: Table 1.4-4 dated 7/98
7439-96-5	Manganese		3.80E-04	lb/10^6 ft^3	0.069	3.4E-05	AP-42: Table 1.4-4 dated 7/98
7439-97-6	Mercury		2.60E-04	lb/10^6 ft^3	0.047	2.4E-05	AP-42: Table 1.4-4 dated 7/98
7440-02-0	Nickel		2.10E-03	lb/10^6 ft^3	0.380	1.9E-04	AP-42: Table 1.4-4 dated 7/98
7782-49-2	Selenium	<	2.40E-05	lb/10^6 ft^3	0.004	2.2E-06	AP-42: Table 1.4-4 dated 7/98

TOTAL HAP EMISSIONS (lb/yr)	341.410	
TOTAL HAP EMISSIONS (tons/yr)	0.171	
MAX INDIVIDUAL HAP EMISSION (lb/yr)	325.504	0.000
MAX INDIVIDUAL HAP EMISSION (ton/yr)	0.163	0.000

Natural Gas Combustion Emissions
Space Heater UH1
Emission Unit 001
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000 BTU/hr	
Natural Gas Consumption	1,668,571 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS			0.00158	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH2
Emission Unit 002
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	225,000 BTU/hr	
Natural Gas Consumption	1,877,143 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0882	tpy	0.0201	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0375	tpy	0.0086	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0071	tpy	0.0016	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0071	tpy	0.0016	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0071	tpy	0.0016	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0052	tpy	0.0012	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	112.6286	tpy	25.7143	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0021	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0022	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			113.3140	tpy	25.8708	lb/hr	(3)
Total HAPS			0.00177	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0017	tpy	0.0004	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH3
Emission Unit 003
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000	BTU/hr	
Natural Gas Consumption	1,668,571	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS				0.00158	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH4
Emission Unit 004
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000 BTU/hr	
Natural Gas Consumption	1,668,571 ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS			0.00158	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH5
Emission Unit 005
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	225,000	BTU/hr	
Natural Gas Consumption	1,877,143	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*			*Total Emissions (2)*			*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0882	tpy	0.0201	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0375	tpy	0.0086	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0071	tpy	0.0016	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0071	tpy	0.0016	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0071	tpy	0.0016	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0052	tpy	0.0012	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	112.6286	tpy	25.7143	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0021	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0022	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				113.3140	tpy	25.8708	lb/hr	(3)
Total HAPS				0.00177	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0017	tpy	0.0004	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH6
Emission Unit 006
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000 BTU/hr	
Natural Gas Consumption	1,668,571 ft^3/yr	Calculated [1]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS			0.00158	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH7
Emission Unit 007
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	250,000 BTU/hr	
Natural Gas Consumption	2,085,714 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*			*Total Emissions (2)*			*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0980	tpy	0.0224	lb/hr		AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0417	tpy	0.0095	lb/hr		AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0079	tpy	0.0018	lb/hr		WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0079	tpy	0.0018	lb/hr		WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0079	tpy	0.0018	lb/hr		Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0057	tpy	0.0013	lb/hr		AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0006	tpy	0.0001	lb/hr		AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	125.1429	tpy	28.5714	lb/hr		AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0023	tpy	0.0005	lb/hr		AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0024	tpy	0.0005	lb/hr		AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			125.9045	tpy	28.7453	lb/hr		(3)
Total HAPS			0.00197	tpy	0.0004	lb/hr		
Individual HAPS								
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0019	tpy	0.0004	lb/hr		AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr		AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH8
Emission Unit 008
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	250,000 BTU/hr	
Natural Gas Consumption	2,085,714 ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0980	tpy	0.0224	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0417	tpy	0.0095	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0079	tpy	0.0018	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0057	tpy	0.0013	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	125.1429	tpy	28.5714	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0024	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			125.9045	tpy	28.7453	lb/hr	(3)
Total HAPS			0.00197	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH9
Emission Unit 009
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000 BTU/hr	
Natural Gas Consumption	1,668,571 ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS			0.00158	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH10
Emission Unit 010
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000	BTU/hr	
Natural Gas Consumption	1,668,571	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS				0.00158	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH11
Emission Unit 011
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000	BTU/hr	
Natural Gas Consumption	1,668,571	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*			*Total Emissions (2)*			*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS				0.00158	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH12
Emission Unit 012
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000 BTU/hr	
Natural Gas Consumption	1,668,571 ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS			0.00158	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH13
Emission Unit 013
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	60,000 BTU/hr	
Natural Gas Consumption	500,571 ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0235	tpy	0.0054	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0100	tpy	0.0023	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0019	tpy	0.0004	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0019	tpy	0.0004	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0019	tpy	0.0004	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0014	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0002	tpy	0.0000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	30.0343	tpy	6.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			30.2171	tpy	6.8989	lb/hr	(3)
Total HAPS			0.00047	tpy	0.0001	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH14
Emission Unit 014
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	75,000	BTU/hr	
Natural Gas Consumption	625,714	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0294	tpy	0.0067	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0125	tpy	0.0029	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0024	tpy	0.0005	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0024	tpy	0.0005	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0024	tpy	0.0005	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0017	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0002	tpy	0.0000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	37.5429	tpy	8.5714	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0007	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0007	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				37.7713	tpy	8.6236	lb/hr	(3)
Total HAPS				0.00059	tpy	0.0001	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH15
Emission Unit 015
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	160,000	BTU/hr	
Natural Gas Consumption	1,334,857	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0627	tpy	0.0143	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0267	tpy	0.0061	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0051	tpy	0.0012	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0051	tpy	0.0012	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0051	tpy	0.0012	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0037	tpy	0.0008	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	80.0914	tpy	18.2857	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0015	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				80.5789	tpy	18.3970	lb/hr	(3)
Total HAPS				0.00126	tpy	0.0003	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0012	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater UH16
Emission Unit 016
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	250,000	BTU/hr	
Natural Gas Consumption	2,085,714	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0980	tpy	0.0224	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0417	tpy	0.0095	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0057	tpy	0.0013	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	125.1429	tpy	28.5714	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0024	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				125.9045	tpy	28.7453	lb/hr	(3)
Total HAPS				0.00197	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater TR-1
Emission Unit 019
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000 BTU/hr	
Natural Gas Consumption	1,668,571 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS			0.00158	tpy	0.0004	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater TR-2
Emission Unit 020
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000	BTU/hr	
Natural Gas Consumption	1,668,571	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS				0.00158	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater TR-3
Emission Unit 021
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	150,000	BTU/hr	
Natural Gas Consumption	1,251,429	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0588	tpy	0.0134	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0250	tpy	0.0057	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0048	tpy	0.0011	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0048	tpy	0.0011	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0048	tpy	0.0011	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0034	tpy	0.0008	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	75.0857	tpy	17.1429	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0014	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0014	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				75.5427	tpy	17.2472	lb/hr	(3)
Total HAPS				0.00118	tpy	0.0003	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0011	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater TR-4
Emission Unit 022
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000	BTU/hr	
Natural Gas Consumption	1,668,571	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS				0.00158	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater TR-5
Emission Unit 023
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	200,000	BTU/hr	
Natural Gas Consumption	1,668,571	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0784	tpy	0.0179	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0334	tpy	0.0076	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0063	tpy	0.0014	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0046	tpy	0.0010	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	100.1143	tpy	22.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				100.7236	tpy	22.9962	lb/hr	(3)
Total HAPS				0.00158	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0015	tpy	0.0003	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Space Heater TR-6
Emission Unit 024
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	80,000	BTU/hr	
Natural Gas Consumption	667,429	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0314	tpy	0.0072	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0133	tpy	0.0030	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0025	tpy	0.0006	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0025	tpy	0.0006	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0025	tpy	0.0006	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0018	tpy	0.0004	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0002	tpy	0.0000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	40.0457	tpy	9.1429	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0007	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				40.2894	tpy	9.1985	lb/hr	(3)
Total HAPS				0.00063	tpy	0.0001	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Roof-Top Unit RTU-1
Emission Unit 025
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	115,000	BTU/hr	
Natural Gas Consumption	959,429	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0451	tpy	0.0103	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0192	tpy	0.0044	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0036	tpy	0.0008	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0036	tpy	0.0008	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0036	tpy	0.0008	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0026	tpy	0.0006	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0003	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	57.5657	tpy	13.1429	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0011	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0011	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				57.9160	tpy	13.2228	lb/hr	(3)
Total HAPS				0.00091	tpy	0.0002	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0009	tpy	0.0002	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Roof-Top Unit RTU-2
Emission Unit 026
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	115,000	BTU/hr	
Natural Gas Consumption	959,429	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0451	tpy	0.0103	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0192	tpy	0.0044	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0036	tpy	0.0008	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0036	tpy	0.0008	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0036	tpy	0.0008	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0026	tpy	0.0006	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0003	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	57.5657	tpy	13.1429	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0011	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0011	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				57.9160	tpy	13.2228	lb/hr	(3)
Total HAPS				0.00091	tpy	0.0002	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0009	tpy	0.0002	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Roof-Top Unit RTU-3
Emission Unit 027
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	250,000	BTU/hr	
Natural Gas Consumption	2,085,714	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0980	tpy	0.0224	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0417	tpy	0.0095	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0057	tpy	0.0013	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	125.1429	tpy	28.5714	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0024	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				125.9045	tpy	28.7453	lb/hr	(3)
Total HAPS				0.00197	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Roof-Top Unit RTU-4
Emission Unit 028
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	250,000	BTU/hr	
Natural Gas Consumption	2,085,714	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0980	tpy	0.0224	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0417	tpy	0.0095	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0079	tpy	0.0018	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0057	tpy	0.0013	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0006	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	125.1429	tpy	28.5714	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0024	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				125.9045	tpy	28.7453	lb/hr	(3)
Total HAPS				0.00197	tpy	0.0004	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0019	tpy	0.0004	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Furnace F-1
Emission Unit 029
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	56,000 BTU/hr	Coleman
Natural Gas Consumption	467,200 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0220	tpy	0.0050	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0093	tpy	0.0021	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0018	tpy	0.0004	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0018	tpy	0.0004	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0018	tpy	0.0004	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0013	tpy	0.0003	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	28.0320	tpy	6.4000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			28.2026	tpy	6.4389	lb/hr	(3)
Total HAPS			0.00044	tpy	0.0001	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Furnace F-2
Emission Unit 030
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	44,000 BTU/hr	Bryant
Natural Gas Consumption	367,086 ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094 lb/ft^3	0.0173	tpy	0.0039	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004 lb/ft^3	0.0073	tpy	0.0017	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0014	tpy	0.0003	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0014	tpy	0.0003	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0014	tpy	0.0003	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0010	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	22.0251	tpy	5.0286	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			22.1592	tpy	5.0592	lb/hr	(3)
Total HAPS			0.00035	tpy	0.0001	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0003	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Boiler #1
Emission Unit 031
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	400,000 BTU/hr	Utica Model J-400B1
Natural Gas Consumption	3,337,143 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001 lb/ft^3	0.1669	tpy	0.0381	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084 lb/ft^3	0.1402	tpy	0.0320	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0127	tpy	0.0029	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0127	tpy	0.0029	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0127	tpy	0.0029	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0092	tpy	0.0021	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0010	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	200.2286	tpy	45.7143	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0037	tpy	0.0008	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0038	tpy	0.0009	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			201.4471	tpy	45.9925	lb/hr	(3)
Total HAPS			0.00315	tpy	0.0007	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0030	tpy	0.0007	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Boiler #2
Emission Unit 032
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	300,000 BTU/hr	Utica Model J-300B1
Natural Gas Consumption	2,502,857 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001 lb/ft^3	0.1251	tpy	0.0286	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084 lb/ft^3	0.1051	tpy	0.0240	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0069	tpy	0.0016	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	150.1714	tpy	34.2857	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0028	tpy	0.0006	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0029	tpy	0.0007	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			151.0853	tpy	34.4944	lb/hr	(3)
Total HAPS			0.00236	tpy	0.0005	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Boiler #3
Emission Unit 033
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	300,000 BTU/hr	Utica Model J-300B1
Natural Gas Consumption	2,502,857 ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001 lb/ft^3	0.1251	tpy	0.0286	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084 lb/ft^3	0.1051	tpy	0.0240	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0069	tpy	0.0016	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	150.1714	tpy	34.2857	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0028	tpy	0.0006	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0029	tpy	0.0007	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			151.0853	tpy	34.4944	lb/hr	(3)
Total HAPS			0.00236	tpy	0.0005	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Boiler #4
Emission Unit 034
Winona Lighting

Heater Fuel Type:	Natural Gas	
Fuel Heat Content	1,050 BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	300,000 BTU/hr	Utica Model J-300B1
Natural Gas Consumption	2,502,857 ft^3/yr	Calculated [1]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001 lb/ft^3	0.1251	tpy	0.0286	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084 lb/ft^3	0.1051	tpy	0.0240	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0095	tpy	0.0022	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0069	tpy	0.0016	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	150.1714	tpy	34.2857	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0028	tpy	0.0006	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0029	tpy	0.0007	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			151.0853	tpy	34.4944	lb/hr	(3)
Total HAPS			0.00236	tpy	0.0005	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0023	tpy	0.0005	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Makeup Air Unit MAU-1
Emission Unit 035
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	918,000	BTU/hr	
Natural Gas Consumption	7,658,743	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*			*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	0.3829	tpy	0.0874 lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.3217	tpy	0.0734 lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0291	tpy	0.0066 lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0291	tpy	0.0066 lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0291	tpy	0.0066 lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0211	tpy	0.0048 lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0023	tpy	0.0005 lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	459.5246	tpy	104.9143 lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0084	tpy	0.0019 lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0088	tpy	0.0020 lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				462.3212	tpy	105.5528 lb/hr	(3)
Total HAPS				0.00723	tpy	0.0017 lb/hr	
Individual HAPS							
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0003	tpy	0.0001 lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0069	tpy	0.0016 lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000 lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Makeup Air Unit MAU-3
Emission Unit 037
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	2,160,000	BTU/hr	
Natural Gas Consumption	18,020,571	ft^3/yr	Calculated [1]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	0.9010	tpy	0.2057	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.7569	tpy	0.1728	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0685	tpy	0.0156	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0685	tpy	0.0156	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0685	tpy	0.0156	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0496	tpy	0.0113	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0054	tpy	0.0012	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	1081.2343	tpy	246.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0198	tpy	0.0045	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0207	tpy	0.0047	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				1087.8145	tpy	248.3595	lb/hr	(3)
Total HAPS				0.01702	tpy	0.0039	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0007	tpy	0.0002	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0162	tpy	0.0037	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Water Heater
Emission Unit 038
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	42,500	BTU/hr	
Natural Gas Consumption	354,571	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.000094	lb/ft^3	0.0167	tpy	0.0038	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.00004	lb/ft^3	0.0071	tpy	0.0016	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0013	tpy	0.0003	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0013	tpy	0.0003	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0013	tpy	0.0003	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0010	tpy	0.0002	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0001	tpy	0.0000	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	21.2743	tpy	4.8571	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0004	tpy	0.0001	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				21.4038	tpy	4.8867	lb/hr	(3)
Total HAPS				0.00033	tpy	0.0001	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0003	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Heater 1
Emission Unit 047
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	2,500,000	BTU/hr	
Natural Gas Consumption	20,857,143	ft^3/yr	Calculated (1)

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	1.0429	tpy	0.2381	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.8760	tpy	0.2000	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0793	tpy	0.0181	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0793	tpy	0.0181	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0793	tpy	0.0181	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0574	tpy	0.0131	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0063	tpy	0.0014	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	1251.4286	tpy	285.7143	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0229	tpy	0.0052	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0240	tpy	0.0055	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				1259.0446	tpy	287.4531	lb/hr	(3)
Total HAPS				0.01969	tpy	0.0045	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0188	tpy	0.0043	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Heater 2
Emission Unit 048
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	2,500,000	BTU/hr	
Natural Gas Consumption	20,857,143	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001 lb/ft^3	1.0429	tpy	0.2381	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084 lb/ft^3	0.8760	tpy	0.2000	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0793	tpy	0.0181	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0793	tpy	0.0181	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0793	tpy	0.0181	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0574	tpy	0.0131	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0063	tpy	0.0014	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	1251.4286	tpy	285.7143	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0229	tpy	0.0052	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0240	tpy	0.0055	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			1259.0446	tpy	287.4531	lb/hr	(3)
Total HAPS			0.01969	tpy	0.0045	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0188	tpy	0.0043	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Drying Oven
Emission Unit 049
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	1,000,000	BTU/hr	
Natural Gas Consumption	8,342,857	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	0.4171	tpy	0.0952	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.3504	tpy	0.0800	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0317	tpy	0.0072	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0317	tpy	0.0072	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0317	tpy	0.0072	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0229	tpy	0.0052	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0025	tpy	0.0006	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	500.5714	tpy	114.2857	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0092	tpy	0.0021	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0096	tpy	0.0022	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				503.6178	tpy	114.9812	lb/hr	(3)
Total HAPS				0.00788	tpy	0.0018	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0003	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0075	tpy	0.0017	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Powder Coat Curing Oven
Emission Unit 050
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	1,500,000	BTU/hr	
Natural Gas Consumption	12,514,286	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	0.6257	tpy	0.1429	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.5256	tpy	0.1200	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0476	tpy	0.0109	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0476	tpy	0.0109	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0476	tpy	0.0109	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0344	tpy	0.0079	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0038	tpy	0.0009	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	750.8571	tpy	171.4286	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0138	tpy	0.0031	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0144	tpy	0.0033	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				755.4267	tpy	172.4719	lb/hr	(3)
Total HAPS				0.01182	tpy	0.0027	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0113	tpy	0.0026	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Curing Oven
Emission Unit 051
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	1,500,000	BTU/hr	
Natural Gas Consumption	12,514,286	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	0.6257	tpy	0.1429	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.5256	tpy	0.1200	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0476	tpy	0.0109	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0476	tpy	0.0109	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0476	tpy	0.0109	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0344	tpy	0.0079	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0038	tpy	0.0009	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	750.8571	tpy	171.4286	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0138	tpy	0.0031	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0144	tpy	0.0033	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				755.4267	tpy	172.4719	lb/hr	(3)
Total HAPS				0.01182	tpy	0.0027	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0005	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0113	tpy	0.0026	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Natural Gas Combustion Emissions
Burn Off Oven
Emission Unit 052
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	800,000	BTU/hr	
Natural Gas Consumption	6,674,286	ft^3/yr	Calculated [1]

Combustion Products		*Emission Factor*		*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001	lb/ft^3	0.3337	tpy	0.0762	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084	lb/ft^3	0.2803	tpy	0.0640	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076	lb/ft^3	0.0254	tpy	0.0058	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076	lb/ft^3	0.0254	tpy	0.0058	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076	lb/ft^3	0.0254	tpy	0.0058	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055	lb/ft^3	0.0184	tpy	0.0042	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006	lb/ft^3	0.0020	tpy	0.0005	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12	lb/ft^3	400.4571	tpy	91.4286	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022	lb/ft^3	0.0073	tpy	0.0017	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023	lb/ft^3	0.0077	tpy	0.0018	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent				402.8943	tpy	91.9850	lb/hr	(3)
Total HAPS				0.00630	tpy	0.0014	lb/hr	
Individual HAPS								
Lead		0.0005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075	lb/106 ft3	0.0003	tpy	0.0001	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8	lb/106 ft3	0.0060	tpy	0.0014	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024	lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Notes:
The burn off oven in Cochran has the following:
Manufacturer – Pollution Control Products Co.
Description - Rate Controlled Burn off Furnace
Model # - PRC 308 5355
Stack to outside is 18 inch diameter
¾" incoming gas line
800,000 BTU

Natural Gas Combustion Emissions
Heater 3
Emission Unit 053
Winona Lighting

Heater Fuel Type:	Natural Gas		
Fuel Heat Content	1,050	BTU/ft^3	AP-42: Supplement D, Section 1.4.1 (7-1998)
Total Heat Input	2,500,000	BTU/hr	
Natural Gas Consumption	20,857,143	ft^3/yr	Calculated [(1)]

Combustion Products		*Emission Factor*	*Total Emissions (2)*				*Basis of Estimate*
Nitrogen Oxides		0.0001 lb/ft^3	1.0429	tpy	0.2381	lb/hr	AP-42: Table 1.4-1 dated 7/98
Carbon Monoxide		0.000084 lb/ft^3	0.8760	tpy	0.2000	lb/hr	AP-42: Table 1.4-1 dated 7/98
Particulate Matter		0.0000076 lb/ft^3	0.0793	tpy	0.0181	lb/hr	WebFIRE Database (4-2006)
PM-10		0.0000076 lb/ft^3	0.0793	tpy	0.0181	lb/hr	WebFIRE Database (4-2006)
PM-2.5		0.0000076 lb/ft^3	0.0793	tpy	0.0181	lb/hr	Assumed same as PM-10
Non-methane VOC		0.0000055 lb/ft^3	0.0574	tpy	0.0131	lb/hr	AP-42: Table 1.4-2 dated 7/98
Sulfur Dioxide		0.0000006 lb/ft^3	0.0063	tpy	0.0014	lb/hr	AP-42: Table 1.4-2 dated 7/98
Carbon dioxide		0.12 lb/ft^3	1251.4286	tpy	285.7143	lb/hr	AP-42: Table 1.4-2 dated 7/98
Nitrogen dioxide		0.0000022 lb/ft^3	0.0229	tpy	0.0052	lb/hr	AP-42: Table 1.4-2 dated 7/98
Methane		0.0000023 lb/ft^3	0.0240	tpy	0.0055	lb/hr	AP-42: Table 1.4-2 dated 7/98
CO2 equivalent			1259.0446	tpy	287.4531	lb/hr	(3)
Total HAPS			0.01969	tpy	0.0045	lb/hr	
Individual HAPS							
Lead		0.0005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
2-Methylnaphthalene		0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
3-Methylchloranthrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
7,12-Dimethylbenz(a)anthracene	<	0.000016 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Acenaphthylene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Anthracene	<	0.0000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benz(a)anthracene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzene		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(a)pyrene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(b)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(g,h,i)perylene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Benzo(k)fluoranthene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chrysene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dibenzo(a,h)anthracene	<	0.0000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Dichlorobenzene		0.0012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluoranthene		0.000003 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Fluorene		0.0000028 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Formaldehyde		0.075 lb/106 ft3	0.0008	tpy	0.0002	lb/hr	AP-42: Table 1.4-3 dated 7/98
Hexane		1.8 lb/106 ft3	0.0188	tpy	0.0043	lb/hr	AP-42: Table 1.4-3 dated 7/98
Indeno(1,2,3-cd)pyrene	<	0.0000018 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Naphthalene		0.00061 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Phenanathrene		0.000017 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Pyrene		0.000005 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Toluene		0.0034 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Arsenic		0.0002 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Beryllium	<	0.000012 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cadmium		0.0011 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Chromium		0.0014 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Cobalt		0.000084 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Manganese		0.00038 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Mercury		0.00026 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Nickel		0.0021 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98
Selenium	<	0.000024 lb/106 ft3	0.0000	tpy	0.0000	lb/hr	AP-42: Table 1.4-3 dated 7/98

Explanation of Calculation Methodology

(1) Natural Gas Consumption (ft3/year) = Total Heat Input (BTU/hr) / Fuel Heat Content (BTU/ft3) x Annual Hours of Operation

(2) Pollutant Emission Rate (tpy) = Pollutant Emission factor (lbs/ft3) x Fuel consumption (ft3/yr) / (2000 lbs/ton)

(3) CO2 Equivalent (tpy) = CO2 (tpy) + (310 x N2O (tpy)) + (21 x Methane (tpy))

Evaluation of 2012 Maximum Emissions From Coating Operations
Paint Booths 1 Through 5
Emission Units 039 Through 043
Winona Lighting

The Purpose of this spreadsheet is to determine the coating, whether in three step or single pass mode produces the worse case coating for VOC, HAP and PM on a per gallon basis. Items in yellow show product with highest content.
For example, Stage 1 of the three step process has the highest Total HAP per gallon and would represent the worse case coating for total HAPs
Based on discussions with the Winona Lighting Paint Manager, painting is accomplished in a three step process or a single pass process depending on the material requiring coating
Mixtures of components for each stage were developed in consultation with the painting manager and paint supplier as reasonable product that could be mixed and applied on a product

Basis 1000 Fixtures

		Usage per Fixture (oz)	Volume %	Gallons /fixtures	lb VOC /Fixtures	lb THAP / Fixtures	lb PM / Fixtures	Max lb IHAP / Fixtures	Max IHAP	VOC/ Gallon	THAP/ gallon	Max PM/ gallon	Max IHAP/ gallon
Three Step Coating Process													
Stage													
1A	Washprimer 1KCF	24	100.0%	188	1193.86	608	287	492.80	Xylene				
		24	100.0%	188	1194	608	287	493	Xylene	6.37	3.24	1.53	2.63
2	Autobase Plus MM Q160 Black Toner	0.03	0.2%	0	1.33	0.04	0.58	0.03	Xylene				
	Autobase Plus MM Q065 Connector Toner	2.5	16.6%	20	115.43	26.33	35.37	21.29	Xylene				
	Autobase Plus MM Q811J Toner	2.77	18.4%	22	125.30	22.83	52.77	18.50	Xylene				
	Autobase Plus MM Q811R Toner	5.56	37.0%	43	251.07	24.64	105.92	19.85	Xylene				
	HIGH PERFORMANCE REDUCER FAST	3.95	26.3%	31	225.58	82.82	0.00	67.09	Xylene				
*	Accelerator (2 oz/gallon)	0.23	1.5%	2	13.16	12.90	0.20	10.45	Xylene				
		15.04	100.0%	117.51	731.87	169.57	194.84	137.20	Xylene	6.23	1.44	1.66	1.17
3	Universal Clear Clearcoat	9.94	61.6%	78	264.81	0.00	343.10	0.00					
	Lesonal Clear Hardener	3.1	19.2%	24	70.48	0.21	135.96	0.10	Xylene				
	Clear Fast Activator	3.1	19.2%	24	160.33	97.51	18.77	11.91	Xylene				
		16.14	100.0%	126.09	495.61	97.71	497.83	12.01	Xylene	3.93	0.77	3.95	0.10
Single Pass Coating Process													
	R200 Fast Reducer	3.95	16.5%	31	217.56	0.00	0.00	0.00	MIBK				
	System 200 A200 Activator	3.95	16.5%	31	240.09	123.52	105.11	123.28	MIBK				
	E350 EPOXY HARDENER	3.95	16.5%	31	160.47	6.64	75.84	0.00	MIBK				
	Accelerator (2 oz/gallon)	0.19	0.8%	1	10.53	10.32	0.16	0.00	MIBK				
VOC	Intermix Tint 216 Sparkle Metallic Toner	11.85	49.6%	93	469.37	90.75	313.38	31.45	MIBK				
		23.89	100.0%	186.60	1098.02	231.23	494.49	154.73	MIBK	5.88	1.24	2.65	0.83
Highest VOC	Grip-Flex Stock 266 Solar Clear	24	100.0%	188	1215.00	344.01	179.82	344.01	Toluene				
		24	100.0%	188	1215	344	180	344	Toluene	6.48	1.83	0.96	1.83
Highest HAP	Intermix Tint 214 Glamor Metallic Toner	11.85	49.6%	93	425.86	169.94	371.27	169.14	MIBK				
		23.89	100.0%	186.60	1054.50	310.42	552.38	292.42	MIBK	5.65	1.66	2.96	1.57
Highest total HAPS	Intermix Tint 231 LF Yellow Toner	11.85	49.6%	93	462.89	252.19	544.60	53.87	MIBK				
		23.89	100.0%	186.60	1091.53	392.67	725.71	177.15	MIBK	5.85	2.10	3.89	0.95
Highest PM	Epoxy E350 White	24.00	100.0%	187.50	587.29	11.89	1592.62	9.63	Xylene				
		24.00	100.0%	187.50	587.29	11.89	1592.62	9.63	Xylene	3.13	0.06	8.49	0.05

Emissions Summary
Paint Booths 1 Through 5
Emission Units 039 Through 043
Winona Lighting

1	Maximum VOC emissions occur when coating with the formulation of the 1 step process	6.48	lb/gallon
2	Maximum total HAP (THAP) emissions occur when coating with the Stage 1 formulation of the 3 step process	3.24	lb/gallon
3	Maximum individual HAP (IHAP) emissions occur when coating with the Stage 1 formulation of the 3 step process	2.63	lb/gallon (Xylene)
4	Maximum PM emissions occur when coating with the formulation of the 1 step process	8.49	lb/gallon
	Paint mixing occures in small batches inside the mixing room (SV053).		

Coating Emissions Summary (tons per year, all spray booths)

	VOC	Xylene	Ethylbenzene	Toluene	MIBK	Cumene	Methanol	Total HAP	PM
Max VOC	478.53	0.00	0.00	135.49	0.00	0.00	NA	135.49	17.71
Max THAP	470.20	194.09	45.48	0.00	0.00	0.00	NA	239.57	28.29
Max IHAP	470.20	194.09	45.48	0.00	0.00	0.00	NA	239.57	28.29
Max PM	231.30	3.79	0.89	0.00	0.00	0.00	NA	4.68	156.81
Solvents	5.73	0.01	0.01	3.69	NA	NA	1.84	5.55	NA
Max for Calc	**484.25**	**194.09**	**0.01**	**3.69**	**0.00**	**0.00**	**1.84**	**245.13**	**156.81**

Max Uncontrolled Coating Emissions Summary (tons per year, per Spray Booth)

Emission Unit	Booth		Guns	Max Gallons/hr	VOC	Xylene	Ethylbenzene	Toluene	MIBK	Cumene	Methanol	Total HAP
039	Paint Booth 1	Open (3-Sided)	2	5.62	161.42	64.70	0.00	1.23	0.00	0.00	0.61	81.71
040	Paint Booth 2	Closed	2	5.62	161.42	64.70	0.00	1.23	0.00	0.00	0.61	81.71
043	Paint Booth 5	Open (3-Sided)[2]	2	5.62	107.61	43.13	0.00	0.82	0.00	0.00	0.41	54.47
		Total	6		430.45	172.53	0.01	3.28	0.00	0.00	1.64	217.89

Emission Unit	Booth		Guns	Uncontrolled PM (lb/hr)	Uncontrolled PM	Capture efficiency	Control efficiency [(1)]	Controlled PM (tpy)	Controlled PM (lb/hr)	Air Flow (dscfm)	Process Weight (lb/hr)	Process Weight Limit (lb/hr)	Allowed Concentration (gr/dscf)	Limit Based on Air Flow (lb/hr)
039	Paint Booth 1	Open (3-Sided)	2	11.934	52.27	80%	68%	23.84	5.442	9100	41.81	0.33	0.092	7.16
040	Paint Booth 2	Closed	2	11.934	52.27	100%	85%	7.84	1.790	14200	41.81	0.33	0.080	9.68
043	Paint Booth 5	Open (3-Sided)[2]	2	7.956	34.85	80%	51%	20.63	4.710	30000	41.81	0.33	0.062	16.04
			6	31.8	139.39									

Average Paint Density 7.44 lb/gal

Notes:
(1) - Per MN Rules 7011.0070 for Wall and Panel Filters (85% control for total enclosure, 68% for Certified Hood, 51% for non certified hood)
(2) - Paint Booth 5 (EU043) has a non certified hood.

LIMITED AND ACTUAL EMISSIONS ESTIMATE
Paint Booths 1 Through 5
Emission Units 039 Through 043
Winona Lighting

1	Maximum total VOC emissions occur when coating with the Stage 2 formulation of the 3 step process	6.48 lb/gallon
2	Maximum total HAP (THAP) emissions occur when coating with the Stage 1 formulation of the 3 step process	3.24 lb/gallon
3	Maximum individual HAP (IHAP) emissions occur when coating with the formulation of the 1 step process	2.63 lb/gallon (Xylene)
4	Maximum PM emissions occur when coating with the formulation of the 1 step process	8.49 lb/gallon

Coating Emissions Summary (tons per year, all spray booths)

	VOC	Xylene	Ethylbenzene	Toluene	MIBK	Cumene	Methanol	Total HAP	PM
Max VOC	478.53	0.00	0.00	135.49	0.00	0.00	NA	135.49	17.71
Max THAP	470.20	194.09	45.48	0.00	0.00	0.00	NA	239.57	28.29
Max IHAP	470.20	194.09	45.48	0.00	0.00	0.00	NA	239.57	28.29
Max PM	231.30	3.79	0.89	0.00	0.00	0.00	NA	4.68	156.81
Solvents	5.73	0.01	0.01	3.69	NA	NA	1.84	5.55	NA
Degreaser (EU044)	22.57								
Max for Calc	484.25	194.09	0.01	3.69	0.00	0.00	1.84	245.13	156.81
Proposed Voluntary Limit for Coatings, solvents and degreaser	**48.00**		**(No Indivual HAP can Exceed 9 tons/yr)**					**12.00**	
Estimated Resultant value based on VOC Limit									**15.73**
Estimated Degreaser Maximum Limited usage	**10.00**								
Estimated Resulting limited Emissions from Paint Booths and Mixing	**38.00**							**12.00**	

Limited Emissions

Emission Unit	Booth		Guns	Max Gallons/hr	VOC (tpy)	Xylene	Ethylbenzene	Toluene	MIBK	Cumene	Methanol	Total HAP (tpy)
039	Paint Booth 1	Open (3-Sided)	2	5.62	12.67	3.00	3.00	3.00	3.00	3.00	3.00	4.00
040	Paint Booth 2	Closed	2	5.62	12.67	3.00	3.00	3.00	3.00	3.00	3.00	4.00
043	Paint Booth 5	Open (3-Sided) [2]	2	5.62	12.67	3.00	3.00	3.00	3.00	3.00	3.00	4.00
TOTAL			6		38.00	9.00	9.00	9.00	9.00	9.00	9.00	12.00

Average Paint Density 7.88 lb/gal

Emission Unit	Booth		Guns	Uncontrolled PM	Capture efficiency	Control efficiency [1]	Controlled PM (tpy)	Controlled PM (lb/hr)	Air Flow (dscfm)	Process Weight (lb/hr)	Process Weight Limit (lb/hr)	Allowed Concentration (gr/dscf)	Limit Based on Air Flow (lb/hr)
039	Paint Booth 1	Open (3-Sided)	2	5.24	80%	68%	2.39	0.546	9100	44.26	0.34	0.092	7.16
040	Paint Booth 2	Closed	2	5.24	100%	85%	0.79	0.180	14200	44.26	0.34	0.080	9.68
043	Paint Booth 5	Open (3-Sided) [2]	2	5.24	80%	51%	3.10	0.709	30000	44.26	0.34	0.062	16.04
TOTAL			6	15.73			6.28						

Actual Emissions (based on 2011)

Total Coating/Solvent VOC Emissions 10.8451 tons
Uncontrolled PM emissions 0.72422 Tons

Emission Unit	Booth		Guns	VOC (tpy)	PM Uncontrolled	Capture efficiency	Controll efficiency [1]	Controlled PM (tpy)
039	Paint Booth 1	Open (3-Sided)	2	3.62	0.24	80%	68%	0.11
040	Paint Booth 2	Closed	2	3.62	0.24	100%	85%	0.04
043	Paint Booth 5	Open (3-Sided) [2]	2	3.62	0.24	80%	51%	0.14
			6	10.85	0.72			0.29

Notes:
(1) - Per MN Rules 7011.0070 for Wall and Panel Filters (85% control for total enclosure, 68% for Certified Hood, 51% for non certified hood)
(2) - Paint Booth 5 (EU043) has a non certified hood.

Potential Emissions from 1 Step Coating Process - Highest VOC content

Winona Lighting - Main & Peterson Buildings

Winona Lighting P/N	Product ID	Product Description	2011 Usage gallons	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs	Contain HAPs: Aliphatic Solvent M-Frac	Mineral Spirits M-Frac	Stoddard Solvent M-Frac	Aromatic Naphtha M-Frac	Aromatic Solvent M-Frac
MIXWP1KCF		Washprimer 1KCF	0.00	187.50	7.95	1490.63	6.37	1193.86	80.72	19.28	287.36					
386304		Grip-Flex Stock 266 Solar Clear	0.00	187.50	7.44	1395.00	6.48	1215.00	87.11	12.89	179.82					
U-T399027	399027	Intermix Tint 216 Sparkle Metallic Toner	0.50	92.58	8.45	782.29	5.07	469.37	59.94	40.06	313.38					
U-T391078	391078	E350 EPOXY HARDENER	108.00	30.86	7.68	237.00	5.20	160.47	68.00	32.00	75.84					
SIK384027	384027	Washhardener EM CF Hardener	91.00	0.00	6.83	0.00	6.69	0.00	98.30	1.70	0.00					
U-T399144	399144	R200 Fast Reducer	51.00	30.86	7.05	217.56	7.05	217.56	100.00	0.00	0.00					
U-T399085	399085	System 200 A200 Activator	63.00	30.86	7.78	240.09	7.78	240.09	56.22	43.78	105.11				0.05	
U-T398676	398676	994 Super Accelerator	0.13	1.45	7.28	10.53	7.28	10.53	98.50	1.50	0.16					
U-T399038	399038	Intermix Tint 231 LF Yellow Toner	0.26	92.58	10.92	1010.95	5.00	462.89	46.13	53.87	544.60					
U-T399025	399025	Intermix Tint 214 Glamor Metallic Toner	5.55	92.58	8.63	798.95	4.60	425.86	53.53	46.47	371.27				0.05	
U-T399079	399079	Intermix Tint 410 Blue Mica Toner (powder)	0.25	0.00	27.54	0.00	0.00	0.00	0.00	100.00	0.00					

Potential Emissions from 1 Step Coating Process - Highest VOC content

Winona Lighting - Main & Peterson Buildings

Winona Lighting P/N	Product ID	Product Description	HAPs										Total HAPs
			Xylene		Ethylbenzene		Methyl isobutyl ketone		Toluene		Cumene		
			M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	lbs
MIXWP1KCF		Washprimer 1KCF	0.33	492.80	0.08	115.49	0.00	0.00					608
386304		Grip-Flex Stock 266 Solar Clear							0.25	344.01			344
U-T399027	399027	Intermix Tint 216 Sparkle Metallic Toner	0.06	48.03	0.01	11.26	0.04	31.45					91
U-T391078	391078	E350 EPOXY HARDENER	0.02	5.38	0.01	1.26							7
SIK384027	384027	Washhardener EM CF Hardener					0.10	0.00	0.16	0.00			0
U-T399144	399144	R200 Fast Reducer											
U-T399085	399085	System 200 A200 Activator		0.12			0.51	123.28				0.12	124
U-T398676	398676	994 Super Accelerator	0.79	8.36	0.19	1.96							10
U-T399038	399038	Intermix Tint 231 LF Yellow Toner	0.08	84.22	0.02	19.75	0.15	148.22					252.19
U-T399025	399025	Intermix Tint 214 Glamor Metallic Toner		0.40			0.21	169.14				0.40	170
U-T399079	399079	Intermix Tint 410 Blue Mica Toner (powder)											

Potential Emissions from 3 Step Coating Process
Winona Lighting - Main & Peterson Buildings

Winona Lighting P/N	Product ID	Product Description	2011 Usage gallons	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs	Contain HAPs: Aliphatic Solvent M-Frac	Mineral Spirits M-Frac	Stoddard Solvent M-Frac	Aromatic Naphtha M-Frac	Aromatic Solvent M-Frac
MIXWP1KCF		Washprimer 1KCF	0.00	187.50	7.95	1490.63	6.37	1193.86	80.72	19.28	287.36					
SIK351762	351762	Autobase Plus MM Q160 Black Toner	10.00	0.23	8.16	1.91	5.68	1.33	69.50	30.50	0.58					
SIK389065	389065	Autobase Plus MM Q065 Connector Toner	46.00	19.53	7.74	151.17	5.91	115.43	76.60	23.40	35.37				0.05	
SIK389816	389816	Autobase Plus MM Q811R Toner	10.00	43.44	8.21	356.62	5.78	251.07	70.30	29.70	105.92				0.05	
SIK389827	389827	Autobase Plus MM Q811J Toner	13.00	21.64	8.21	177.67	5.79	125.30	70.30	29.70	52.77					
LES398547	398547	Universal Clear Clearcoat	26.00	77.66	8.08	627.46	3.41	264.81	45.32	54.68	343.10					
SIK384027	384027	Washhardener EM CF Hardener	91.00	0.00	6.83	0.00	6.69	0.00	98.30	1.70	0.00					
LES395734	395734	Lesonal Clear Hardener	50.50	24.22	8.52	206.34	2.91	70.48	34.11	65.89	135.96				0.05	
SIK391059	391059	HIGH PERFORMANCE REDUCER FAST	95.00	30.86	7.29	224.96	7.31	225.58	100.00	0.00	0.00					
LES398549	398549	Clear Fast Activator	57.25	24.22	7.34	177.77	6.62	160.33	89.44	10.56	18.77					
U-T398676	398676	994 Super Accelerator	0.13	1.81	7.28	13.16	7.28	13.16	98.50	1.50	0.20					
		Pounds				3,428	7.31	2,421	100.00	65.89	980					
		Tons				1.71	0.00	1.21			0.49					

Emissions (tons)	Primer/Toner/Tint
VOCs	1.21
Xylene	0.32
Ethylbenzene	0.08
Toluene	0.04
Methyl isobutyl ketone	0.00
Methanol	0.00
Cumene	0.00
Nickel Compounds	0.00
Antimony Compounds	0.00
Total HAPs	0.44
Solids transfer efficiency for HPLV Painting	0.75
Particulate Matter (tons)[1]	0.12
PM10 (tons)[1]	0.12

Note
(1) PM Emissions estimates do not include wall filter control efficiency

From HAP Containing					HAPs																
Xylene	Ethylbenzene	Toluene	Naphthalene	Cumene	Xylene		Ethylbenzene		Methyl isobutyl ketone		Toluene		Cumene		Methanol		Nickel Compounds		Antimony Compounds		Total HAPs
lbs	lbs	lbs	lbs	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	lbs
					0.33	492.80	0.08	115.49	0.00	0.00											608
					0.02	0.03	0.00	0.01													0.0394
0.08				0.08	0.14	21.29	0.03	4.97						0.08							26
0.18				0.18	0.06	19.85	0.01	4.61						0.18							25
					0.10	18.50	0.02	4.34													23
									0.10	0.00	0.16	0.00									0
0.10				0.10		0.10								0.10							0
					0.30	67.09	0.07	15.73													83
					0.07	11.91	0.02	2.79			0.47	82.81									98
					0.79	10.45	0.19	2.45													13
						642		150		0		83		0		0.00		0.00		0.00	876
						0.32		0.08		0.00		0.04		0.00		0.00		0.00		0.00	0.44

Potential VOC Emissions from Coatings

	Total Spray Guns	*Flow Rate - Maximum Tip (gal/hr)*	*Max Time (hrs)*	Max usage (gallons/yr)
Spray Guns	6	2.8	8760	147693.6
TOTAL				147693.6

										Contain HAPs					HAPs										
Product Description	Volume %	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs	Aliphatic Solvent M-Frac	Mineral Spirits M-Frac	Stoddard Solvent M-Frac	Aromatic Naphtha M-Frac	Aromatic Solvent M-Frac	Xylene M-Frac	Xylene lbs	Ethylbenzene M-Frac	Ethylbenzene lbs	Methyl isobutyl ketone M-Frac	Methyl isobutyl ketone lbs	Toluene M-Frac	Toluene lbs	Cumene M-Frac	Cumene lbs	Total HAPs lbs
Grip-Flex Stock 266 Solar Clear	100.0%	147693.60	7.44	1098840.38	6.48	957054.53	87.11	12.89	141640.53						0.00	0.00	0.00	0.00			0.25	270974.04			270,974
		147693.60	7.44																						
Pounds				1,098,840	7.31	957,055	100.00	30.50	141,641							0		0		0		270,974		0	270,974
Tons				549.42	0.00	478.53			70.82							0.00		0.00		0.00		135.49		0.00	135.49

Emissions (tons)	
VOCs	**478.53**
Xylene	**0.00**
Ethylbenzene	**0.00**
Toluene	**135.49**
Methyl isobutyl ketone	**0.00**
Cumene	**0.00**
Total HAPs	**135.49**
Solids transfer efficiency for HPLV Painting	**0.75**
Particulate Matter (tons)[1]	**17.71**
PM10 (tons)[1]	**17.71**

Note
(1) PM Emissions estimates do not include wall filter control efficiency

Potential Emissions from 3 Step Coating Process
Winona Lighting

	Total Spray Guns	*Flow Rate - Maximum Tip (gal/hr)*	*Max Time (hrs)*	Max usage (gallons/yr)
Spray Guns	6	2.8	8760	147693.6
TOTAL				147693.6

Product Description	Volume %	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs	HAPs								Total HAPs lbs
										Xylene		Ethylbenzene		Methyl isobutyl ketone		Toluene		
										M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	M-Frac	lbs	
Washprimer 1KCF	100.0%	147693.60	7.95	1174164.61	6.37	940399.43	80.72	19.28	226351.99	0.33	388178.94	0.08	90969.42		0.00			479,148
Anti-Static Surface Cleaner	14.00		6.53	0.00	6.43	0.00	99.00	1.00	0.00		0.00		0.00				0.00	0.00
M600 Surface Cleaner	11.00		6.30	0.00	4.20	0.00	100.00	0.00	0.00	0.03	0.00	0.08	0.00					0.00
Multi-Purpose Solvent	275.00		6.93	0.00	6.10	0.00	100.00	0.00	0.00							0.60	0.00	0.00
Pounds				1,174,165	6.43	940,399	100.00	19.28	226,352		388,179		90,969		0		0	479,148
Tons				587.08	0.00	470.20			113.18		194.09		45.48		0.00		0.00	239.57

Emissions (tons)

VOCs	470.20
Xylene	194.09
Ethylbenzene	45.48
Toluene	0.00
Methyl isobutyl ketone	0.00
Total HAPs	239.57
Solids transfer efficiency for HPLV Painting	0.75
Particulate Matter (tons)[1]	28.29
PM10 (tons)[1]	28.29

Note
(1) PM Emissions estimates do not include wall filter control efficiency

Potential Individual HAP Emissions from Coatings - NA. MAX IHAP in Total HAP Worksheet

NOt

	Total Spray Guns	*Flow Rate - Maximum Tip (gal/hr)*	*Max Time (hrs)*	Max usage (gallons/ yr)
Spray Guns	6	2.8	8760	147693.6
TOTAL				147694

										Contain HAPs					HAPs										
Product Description	Volume %	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs	Aliphatic Solvent M-Frac	Mineral Spirits M-Frac	Stoddard Solvent M-Frac	Aromatic Naphtha M-Frac	Aromatic Solvent M-Frac	Xylene M-Frac	Xylene lbs	Ethylbenzene M-Frac	Ethylbenzene lbs	Methyl isobutyl ketone M-Frac	Methyl isobutyl ketone lbs	Toluene M-Frac	Toluene lbs	Cumene M-Frac	Cumene lbs	Total HAPs lbs
Intermix Tint 214 Glamor Metallic Toner	49.6%	109911.5163	8.63	948536.3855	4.6	505592.97	53.53	46.47	440784.86				0.05			474.27			0.21	200805.15				474.27	201,754
E350 EPOXY HARDENER	16.5%	24424.78	7.68	187582.32	5.20	127008.86	68.00	32.00	60026.34						0.02	4258.87	0.01	998.65							5257.52
R200 Fast Reducer	16.5%	24424.78	7.05	172194.71	7.05	172194.71	100.00	0.00	0.00																
System 200 A200 Activator	16.5%	24424.78	7.78	190024.80	7.78	190024.80	56.22	43.78	83192.86				0.05			95.01			0.51	97577.73				95.01	97767.76
994 Super Accelerator	0.8%	1144.91	7.28	8334.96	7.28	8334.96	98.50	1.50	125.02						0.79	6617.21	0.19	1551.64							8168.84
	100.0%	184330.77																							
Total Pounds				1,506,673	7.78	1,003,156	100.00	46.47	584,129							11,445		2,550		298,383		0		569	312,948
Tons				753.34	0.00	501.58			292.06							5.72		1.28		149.19		0.00		0.28	156.47

Emissions (tons)	Primer/Toner/Tint
VOCs	501.58
Xylene	5.72
Ethylbenzene	1.28
Toluene	0.00
Methyl isobutyl ketone	149.19
Cumene	0.28
Total HAPs	156.47
Solids transfer efficiency for HPLV Painting	0.75
Particulate Matter (tons)[1]	73.02
PM10 (tons)[1]	73.02

Note
(1) PM Emissions estimates do not include wall filter control efficiency

Potential PM Emissions from Coatings

	Total Spray Guns	*Flow Rate - Maximum Tip (gal/hr)*	*Max Time (hrs)*	Max usage (gallons /yr)
Spray Guns	6	2.8	8760	147694
TOTAL				147694

										Contain HAPs					HAPs										
Product Description	Volume %	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs	Aliphatic Solvent M-Frac	Mineral Spirits M-Frac	Stoddard Solvent M-Frac	Aromatic Naphtha M-Frac	Aromatic Solvent M-Frac	Xylene M-Frac	Xylene lbs	Ethylbenzene M-Frac	Ethylbenzene lbs	Methyl isobutyl ketone M-Frac	Methyl isobutyl ketone lbs	Toluene M-Frac	Toluene lbs	Cumene M-Frac	Cumene lbs	Total HAPs lbs
Epoxy E350 White	1.00	147693.60	11.87	1753441.07	3.13	462608.08	28.45	71.55	1254505.74						0.004	7584.61	0.001	1778.55							9363.16
	100.0%	147693.60																							
Total Pounds				1,753,441	3.79	462,608	47.56	76.65	1,254,506							7,585		1,779		0		0		0	9,363
Tons				876.72	0.00	231.30			627.25							3.79		0.89		0.00		0.00		0.00	4.68

Emissions (tons)	Primer/Toner/Tint
VOCs	231.30
Xylene	3.79
Ethylbenzene	0.89
Toluene	0.00
Methyl isobutyl ketone	0.00
Cumene	0.00
Total HAPs	4.68
Solids transfer efficiency for HPLV Painting	0.75
Particulate Matter (tons)[1]	156.81
PM10 (tons)[1]	156.81

Note
(1) PM Emissions estimates do not include wall filter control efficiency

Potential PM Emissions from Coatings

	Total Spray Guns	*Flow Rate - Maximum Tip (gal/hr)*	*Max Time (hrs)*	Max usage (gallons /yr)
Spray Guns	6	2.8	8760	147694
TOTAL				147694

Product Description	Volume %	Max Usage gallons	Density lbs/gal	Usage lbs	VOCs lbs/gal	VOCs Emitted lbs	Volatiles %wt	Solids %wt	Solids lbs
Epoxy E350 White	1.00	147693.60	11.87	1753441.07	3.13	462608.08	28.45	71.55	1254505.74
	100.0%	147693.60							
Total Pounds				1,753,441	3.79	462,608	47.56	76.65	1,254,506
Tons				876.72	0.00	231.30			627.25

Emissions (tons)	Primer/Toner/Tint
VOCs	231.30
Xylene	3.79
Ethylbenzene	0.89
Toluene	0.00
Methyl isobutyl ketone	0.00
Cumene	0.00
Total HAPs	4.68
Solids transfer efficiency for HPLV Painting	0.75
Particulate Matter (tons)[1]	156.81
PM10 (tons)[1]	156.81

Note
(1) PM Emissions estimates do not include wall filter control efficiency

Potential Solvent Emissions
Winona Lighting

	Unit	Multi-Purpose Solvent	M600 Surface Cleaner	Anti-Static Surface Cleaner	Total
Actual usage in 2011	Gallons/yr	405.00	13.00	14.00	432
2011 hours of operation	Hours	2000	2000	2000	
Max annual hours	Hours	8760	8760	8760	
Estimated Max Annual Usage	Gallons/yr	1774	57	61	1892.16
Specific Gravity					
Density	lb/gallon	6.93	6.3	6.53	
VOC content	lb/gallon	6.10	4.20	6.43	
Total VOCs	tons/yr	5.410	0.120	0.197	**5.73**
HAPs	tons/yr				
Toluene		3.69			**3.69**
Methanol		1.84			**1.84**
Xylene			0.01		**0.01**
Ethylbenzene			0.01		**0.01**
Total HAPs	tons/yr	5.53	0.02	0.00	**5.55**

Note:
These emissions are added to those of the 3 paint booths for this PTE calculation

Emissions Summary
Degreaser
Emission Unit 044
Winona Lighting

	Unit	GENTECH[1]
Actual usage in 2011 [2]	Gallons/yr	550
2011 hours of operation	Hours	1166.7
Max annual hours	Hours	8760
Estimated Potential Annual Usage	Gallons/yr	4130
Specific Gravity		1.31
Density	lb/gallon	10.93
VOC content	lb/gallon	10.93
Total VOCs PTE	tons/yr	22.574
2011 ACTUAL VOC	tons/yr	3.006

Estimated Maximum Usage as part of 48 tpy cap on coatings, solvents and degreasing emissions

Note
(1) GENTECH replaced TCE as a degreaser at the facility in May 2011. Hours of operation in 2011 reflect 7 months of the year.

Potential to Emit Calculation For Abrasive Blasting

Abrasive Blasting: Gun #1

Facility Name	**Winona Lighting**
Date	6/6/2012

GUN 1

Enter the **Internal Nozzle Diameter**	3/16	inches	Per R. Johnson 6-6-12 email
Enter the **Nozzle Pressure**	65	psig	Per R. Johnson 6-6-12 email

Determine the flow rate: Using the values above and the chart below, determine the flow rate of abrasive material through the gun.

Flow Rate (lb of abrasive/hr) of Abrasive through the nozzle*

Internal Nozzle Diameter (in) ↓	Nozzle Pressure (psig) 30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Flow rate (from the chart above):	114.50
Select the type of Abrasive Material	Grit

The flow rates in the above chart are for sand. If you are using steel or aluminum oxide as your abrasive blast material, the spreadsheet will automatically convert the flow rate listed in the blue box above to these other abrasive material types.

	Sand (lb of abrasive/hour)	**Aluminum Oxide Grit** (flow rate of sand x (density of aluminum oxide/density of sand))*	**Steel** (flow rate of sand x (density of steel/density of sand))*
If needed, correct the flow rate from Sand to Aluminum Oxide or Steel:	115	185	563

Calculate Maximimun Emissions (Potential to Emit)

Pollutant	**Flow Rate of Gun**[1] (lb abrasive/hr)	**Emission Factor**[2] (lb pollutant/ lb of abrasive)	**Emission Rate** (flow rate x emission factor) (lb pollutant/hour)	**Potential to Emit (PTE) for Gun 1 (in lbs)** emission rate x 8,760 hours/year (lb pollutant/year)	**Insignificant Activity** [3] **(lbs/year)**	**Potential to Emit (PTE) for Gun 1 (in tons)*** ** PTE in lbs/2000 lb per ton (tons pollutant/year)
PM (Particulate Matter)	185	0.01	1.850505051	**16210.4**	2,000	**8.1**
PM 10 (PM < 10 microns)	185	0.007	1.295353535	**11347.3**	2,000	**5.7**

1 Enter the flow rate of the gun based on the abrasive material used.

2 Pick your emission factors from the choices below.

Emission Factors for Abrasives*	PM (lb PM/lb abrasive)	PM10 (lb PM10/lb of Abrasive)**
Sand	0.041	0.029
Grit	0.010	0.007
Steel Shot	0.004	0.0034
Other	0.01	0.01

3 Per MN Rule 7007.1300, Subpart 3.I, individual emission units at a stationary source, each of which have a potential to emit the following pollutants in amounts less then 4000 pounds per year of carbon monoxide and 2000 pounds per year each of SO2, NOx, VOC, PM, and PM10 are considered insignificant activities. These do not need to be counted toward the PTE calculation unless there are other significant sources of emissions at the site.

***** Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/91)

** PM10 emissions derived from STAPPA/ALAPCO PM10 factors which were based on the amount of PM generated: sand = 0.7 lbs PM10 per lb of PM; grit= 0.7 lb PM10 per lb of PM; Steel shot = 0.86 lb PM10 per lb of PM
For "Other", assume PM10=PM

*** To determine if a permit is needed, add up all potential emissions from the facility. For example, if you are able to operate two blasting guns at the same time, or if you also have a paint spraying booth or other source of emissions at your facility, include these as well. Your total Potential to Emit should be below the levels referenced in the *All About Air Permits* website noted above.

Emissions Summary
Sand Blaster with Fabric Filter Control
Emission Unit 045
Winona Lighting

Totally Enclosed with Fabric Filter Control

Maximum Hrs of operation	8760	
Potential Sandblasting Material	185.05	lbs/hr
Potential Sandblasting Material	1621042	lbs/yr
Air Flow (dscfm)	500	

Calculation of Potential PM Emissions

Pollutant	Annual Uncontrolled Emissions (lb/hr)	Annual Uncontrolled Emissions (tons/year)	Controll efficiency [1]	Annual Controlled Emissions (tons/year)	Annual Controlled Emissions (tons/year)	Controlled Emissions (lb/hr)	Process Weight Limit (lb/hr)	Allowed Concentration (gr/dscf)	Limit based on Air Flow (lb/hr)
PM	1.851	8.11	99.0%	0.397		0.091	0.82	0.100	0.43
PM10	1.295	5.67	93.0%	0.397		0.091			
PM2.5 (assumed same as PM-10)	1.295	5.67	93.0%	0.397		0.091			

Calculation of Actual PM Emissions (2000 hr/yr)

PM	1.85	99.0%	0.019		0.018
PM10	1.30	93.0%	0.091		0.087
PM2.5 (assumed same as PM-10)	1.30	93.0%	0.091		0.087

Notes:
(1) - Per MN Rules 7011.0070 for Total Enclosure with Fabric Filter

Emissions Summary
Timesaver Finishing Machine
Emission Unit 046
Winona Lighting

NOTE: per MN Rules 7008.4110 emissions from equipment venting PM or PM10 for example:
buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding, or turning equipment,
that are filtered through an air cleaning system and vented inside the building 100% of the time are considered conditionally insignificant activities

Total enclosure with Mechanically Aided Separator (see attached figure)

Maximum Hrs of operation	8760		
Maximum Metal Processed Through Timesaver	60	lb/hr	Per R. Johnson 6-6-12 email (Assumes Brass material)
Maximum Metal Processed Through Timesaver	0	Tons/yr	Vent modification so the emissions are routed indoors 100% of the time
Air Flow (dscfm)	1310		

Calculation of Potential PM Emissions

Pollutant	Material Processed (Tons/yr)	Emission Factor [1] (lb/ton)	Control efficiency [2]	Annual Uncontrolled Emissions (tons/year)	Annual Uncontrolled Emissions (lb/hr)	Annual Controlled Emissions (tons/year)	Controlled PM (lb/hr)	Process Weight Limit (lb/hr)	Allowed Concentration (gr/dscf)	Limit Based on Air Flow (lb/hr)
PM	0	17	64.0%	0.00	0.000	0.00	0.000	0.41	0.100	1.12
PM10	0	1.7	5.0%	0.00	0.000	0.00	0.000			
PM2.5 (assumed same as PM-10)	0	1.7	5.0%	0.00	0.000	0.00	0.000			

Calculation of Actual PM Emissions (2000 hr/yr)

PM	0.00	17	64.0%	0.0000	0.000	0.000
PM10	0.00	1.7	5.0%	0.0000	0.000	0.000
PM2.5 (assumed same as PM-10)	0.00	1.7	5.0%	0.0000	0.000	0.000

(1) - Emission factors are based on WebFIRE Database (4-2006) for SCC 3-04-003-40
(2) - Per MN Rules 7011.0070 for Total Enclosure with Mechanically Aided Separator

Operating Emissions
Welding - Insignificant Unit

Winona Lighting

NOTE: per MN Rules 7007.1300 Subpart 3(H) welding, brazing or soldering are considered insignificant activities

2010 Emissions

MANUFACTURER PART #	ANNUAL CONSUMPTION (Approx.-lbs)	Type of Welding	Manganese (%)	Chromium (%)	Nickle (%)	Copper (%)	PM-10 Emission Factor (lb/1000lb welded)	Basis	PM-10 (lb)	Manganese (lb)	Chromium (lb)	Nickle (lb)	Copper (lb)
70S	121	GMAW	1.33	0.04	0.42	0.07	5.2	AP-42	0.629	0.008	0.000	0.003	0.000
308L HiSil	333	GMAW	5	35	37		5.4	AP-42	1.798	0.090	0.629	0.665	0.000
EDM23447435	40	GMAW	2	25	13		5.4	assumed	0.216	0.004	0.054	0.028	0.000
TOTAL ANNUAL EMISSIONS (lb)	494								2.643	0.103	0.684	0.696	0.000
TOTAL ANNUAL EMISSIONS (tons)									0.001	0.000	0.000	0.000	0.000
Average Rate (assuming 2080 hrs of operation) (lb/hr)									0.001	0.000	0.000	0.000	0.000

Number of Welders in 2010	11
Estimated Hrs of operation in 2010	2080
Maximum Hrs of operation	8760
Safety Factor Multiplier	10

Maximum PTE for Facility

MANUFACTURER PART #	ANNUAL CONSUMPTION (Approx.-lbs)	Type of Welding	Manganese (%)	Chromium (%)	Nickle (%)	Copper (%)	PM-10 Emission Factor (lb/1000lb welded)	Basis	PM-10 (lb)	Manganese (lb)	Chromium (lb)	Nickle (lb)	Copper (lb)
70 S	5,096	GMAW	1.33	0.04	0.42	0.07	5.2	AP-42	26.499	0.352	0.011	0.111	0.019
308L HiSil	14,024	GMAW	5	35	37		5.4	AP-42	75.732	3.787	26.506	28.021	0.000
EDM23447435	1,685	GMAW	2	25	13		5.4	assumed	9.097	0.182	2.274	1.183	0.000
TOTAL ANNUAL EMISSIONS (lb)	20,805								111.328	4.321	28.791	29.315	0.019
TOTAL ANNUAL EMISSIONS (tons)									0.056	0.002	0.014	0.015	0.000
Average Rate (assuming 2080 hrs of operation) (lb/hr)									0.054	0.002	0.014	0.014	0.000
Maximum PTE for Single Welder (Tons)									***0.005***	***0.000***	***0.001***	***0.001***	***0.000***

Attachment 2: Points Calculator

1) AQ Facility ID No.:	16900092
2) Facility Name:	Winona Lighting Inc
3) Small business? y/n?	N
4) DQ Numbers (including all rolled) :	
5) Date of each Application Received:	08/31/2012
6) Final Permit No.	16900092-001
7) Permit Staff	Kelsey Suddard
8) "Work completed" in which .xls file (i.e. unit 2b, unit 1a, biofuels)?	NA

Total Points 125

Application Type	**DQ No.**	**Qty.**	*Points*	**Total Points**	**Details**
Administrative Amendment			*1*	0	
Minor Amendment			*4*	0	
Applicability Request			*10*	0	
Moderate Amendment			*15*	0	
Major Amendment			*25*	0	
Individual State Permit (not reissuance)			*50*	0	
Individual Part 70 Permit (not reissuance)	4099	1	*75*	75	
Additional Points					
Modeling Review			*15*	0	
BACT Review			*15*	0	
LAER Review			*15*	0	
CAIR/Part 75 CEM analysis			*10*	0	
NSPS Review			*10*	0	
NESHAP Review	4099	2	*10*	20	4M, 5D
Case-by-case MACT Review			*20*	0	
Netting			*10*	0	
Limits to remain below threshold	4099	3	*10*	30	Pt 70, PSD, NESHAP
Plantwide Applicability Limit (PAL)			*20*	0	
AERA review			*15*	0	
Variance request under 7000.7000			*35*	0	
Confidentiality request under 7000.1300			*2*	0	
EAW review					
Part 4410.4300, subparts 18, item A; and 29			*15*	0	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C			*35*	0	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D			*70*	0	
			Add'l Points	**50**	

NOTES: Facility applied for first time Part 70, but was issued a first time State individual permit. Fee cannot be refuneded, but was applied towards the state permit fee

Attachment 3: MPCA BACT-Like Cost Analysis

Exiting Emission Unit	*EU Number*	*Max Expected Flow Rate (scfm)*	*Actual VOC Emissions* (ton/yr)*	*Limited VOC Emissions** (ton/yr)*
Paint Booth 5	043	30,000.0	2.41	48

	Pollutants	*Control Options*	*Annualized Cost Range ($/scfm/yr)* Minimum	*($/scfm/yr)* Maximum	*($/scfm/yr)* Mean	*Inflation Scalar*	*Upper End of Control Efficiency Range (%)*	*Achievable Emission Reduction (ton/yr)*	*Process Flow Rate (scfm)*	*Annualized Cost ($/yr)* Mean	*Annualized Cost ($/yr)* Minimum	*Incremental Cost ($/ton)*
VOC EMISSIONS CONTROL OPTIONS:												
Paint Booth 5	VOC	Catalytic Incinerator	$ 8.00	$ 50.00	$ 29.00	1.27	99.00	47.52	30,000	$ 1,104,900.00	$ 304,800.00	**$ 6,414**
		Thermal Incinerator	$ 8.00	$ 98.00	$ 53.00	1.27	99.99	48.00	30,000	$ 2,019,300.00	$ 304,800.00	**$ 6,351**
		Recuperative Incinerator	$ 8.00	$ 45.00	$ 26.50	1.27	99.9999	48.00	30,000	$ 1,009,650.00	$ 304,800.00	**$ 6,350**
		Regenerative Incinerator	$ 8.00	$ 33.00	$ 20.50	1.27	99.00	47.52	30,000	$ 781,050.00	$ 304,800.00	**$ 6,414**
		Carbon Adsorption	$ 22.00	$ 33.00	$ 27.50	1.27	99.00	47.52	30,000	$ 2,007,750.00	$ 838,200.00	**$ 17,639**

Note:

* Actual VOC emissions - based on the maximum actual emissions estimated from purchase records in 2011

**Limited VOC emissions - based on GP 003 limit

The carbon adsorption system annual carbon replacement cost is calculated based on $2/lb cost of carbon replacement and a 20% loading rate

Where did the Carbon Adsorption numbers come from?

All other cost numbers represent EPA's Air Pollution Technology Fact Sheets and the ranges given for Annualized Cost ($/scfm)

Additionally, the costs shown in the Control Technology Fact Sheets are in 2002 dollars so they have been scaled using the consumer price index per ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt (the average value from 2002 was used along with the July 2012 value).

2012	229.104
2002	179.9
Ratio	1.27

Exiting Emission Unit	*EU Number*	*Max Expected Flow Rate (dscfm)*	*2011 Uncontrolled PM/PM10 Emissions* (ton/yr)*	*PM/PM10 Limited Emissions (ton/yr)*
Paint Booth 5	043	30,000.0	0.16	5.00

	Pollutants	*Control Options*	*Annualized Cost Range ($/scfm/yr)* Minimum	*($/scfm/yr)* Maximum	*($/scfm/yr)* Mean	*Inflation Scalar*	*Upper End of PM Control Efficiency Range %*	*Maximum Achievable Emission Reduction (ton/yr)*	*Process Flow Rate (scfm)*	*Annualized Cost ($/yr)* mean	*Annualized Cost ($/yr)* minimum	*Incremental Cost ($/ton)*	*Incremental Cost ($/ton)*
PM EMISSIONS CONTROL OPTIONS:													
		Total PM Emissions to be Controlled:											
Paint Booth 5	PM/PM10	Venturi	$ 5.70	$ 193.00	$ 99.35	1.27	99.00	4.95	30,000	$ 3,785,235.00	$ 217,170.00	**$ 764,694**	**$ 43,872.73**
		HEPA Filter	$ 7.00	$ 25.00	$ 16.00	1.27	99.98	5.00	30,000	$ 609,600.00	$ 266,700.00	**$ 121,944**	**$ 53,350.67**
		Baghouse (shaker)	$ 5.00	$ 45.00	$ 25.00	1.27	99.90	5.00	30,000	$ 952,500.00	$ 190,500.00	**$ 190,691**	**$ 38,138.14**
		Dry ESP - Wire-Pipe	$ 9.00	$ 26.00	$ 17.50	1.27	99.90	5.00	30,000	$ 666,750.00	$ 342,900.00	**$ 133,483**	**$ 68,648.65**
		Dry Filter	$ 1.00	$ 3.00	$ 2.00	1.27	85.00	4.25	30,000	$ 76,200.00	$ 38,100.00	**$ 17,929**	**$ 8,964.71**
		Wet Electrostatic Precipitator (Wire-Plate)	$ 9.00	$ 47.00	$ 28.00	1.27	99.90	5.00	30,000	$ 1,066,800.00	$ 342,900.00	**$ 213,574**	**$ 68,648.65**
		Wet Electrostatic Precipitator (Wire-Pipe)	$ 12.00	$ 46.00	$ 29.00	1.27	99.90	5.00	30,000	$ 1,104,900.00	$ 457,200.00	**$ 221,201**	**$ 91,531.53**
		Water Curtains	$ 8.00	$ 20.00	$ 14.00	1.27	85.00	4.25	30,000	$ 533,400.00	$ 304,800.00	**$ 125,506**	**$ 71,717.65**

* Actual PM/PM10 emissions - based on the maximum actual emissions estimated from purchase records in 2011
**Limited PM, PM10, and PM2.5 emissions - based on GP 003 limit

All cost numbers represent EPA's Air Pollution Technology Fact Sheets and the ranges given for Annualized Cost ($/scfm)
Additionally, the costs shown in the Control Technology Fact Sheets are in 2002 dollars so they have been scaled using the consumer price index per ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt (the average value from 2002 was used along with the July 2012 value).

2012	229.104
2002	179.9
Ratio	1.27

All efficiencies come from EPA's Air Pollution Technology Fact Sheets with the exception of Water Curtains and Dry Filter.
The efficiencies for these two types of control equipment are based on Minn. R. 7011.0070

Exiting Emission Unit	*EU Number*	*Max Expected Flow Rate (dscfm)*	*Controlled and Limited PM* (ton/yr)*	*Emission Reduction due Total Enclosure** (ton/yr)*
Paint Booth 5 Existing (Open, 3 sided)	043	30,000.0	5.000	2.66

Capital Cost to Enclose Booth	Amount	Basis
- Contractor - Enclosure and lighting modification	$ 22,900	Quote
- Contractor - Ventilation Modifications	$ 15,000	Quote
- Contractor - Electrical/Controls	$ 5,000	Estimate
- Winona Lighting Resources and Supervision	$ 8,580	Assume 20% of contractor
Total Capital Cost to Enclose Booth	$ 51,480	
Estimated Booth Life (yrs)	15	
Average Capital Cost	$ 3,432.00	
Annual Costs		
- Increased Time for painter (2 min/part, 6 fixtures/hr, 60 hr/wk, 52 wk/yr, $30/hr)	$ 18,720	Facility Estimate
- Increased booth mainenance due to complete enclosure	$ 500	Estimate
Total Annual Cost to Enclose Booth	$ 19,220	
Mean Annualized Cost	$ 22,652	
Total PM Removal Improvement From Total Enclosure (tons/yr)	2.656	
Incremental Cost ($/ton PM removed)	**$ 8,528**	

*Based on PM, PM10, and Pm2.5 limit at GP 003 of 5.0 ton/yr
**Emission Reduction:
Control Efficiency with hood = 68%
Control Efficiency with total enclosure = 85%
Uncontrolled PM emissions back-calculated from PM limit = 5.0/(1-.68) = 15.625
Controlled PM emisions with total enclosure = 15.625*(1-.85) = 2.34
Potential PM emissions reductions by enclosing the booth = 5.0 - 2.34 = 2.66

Attachment 4: CD-01 Forms

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **Total Facility**

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	SOURCE-SPECIFIC REQUIREMENTS
2.0		CD	Minn. R. 7007.0800, subp. 2	Permit Appendices: This permit contains 3 appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.
3.0		CD	hdr	OPERATIONAL REQUIREMENTS
4.0		CD	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080	The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.
5.0		CD	Minn. R. 7011.0020	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.
6.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.
7.0		CD	Minn. R. 7007.0800, subps. 14 and 16(J)	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.
8.0		CD	Minn. R. 7019.1000, subp. 4	Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.
9.0		CD	Minn. R. 7011.0150	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.
10.0		CD	Minn. R. 7030.0010 - 7030.0080	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
11.0		CD	Minn. R. 7007.0800, subp. 9(A)	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).
12.0		CD	Minn. R. 7007.0800, subp. 16	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.
13.0		CD	hdr	PERFORMANCE TESTING
14.0		CD	Minn. R. ch. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

15.0		CD	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2	Performance Test Notifications and Submittals: Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.
16.0		CD	Minn. R. 7017.2025, subp. 3	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.
17.0		CD	hdr	MONITORING REQUIREMENTS
18.0		CD	Minn. R. 7007.0800, subp. 4(D)	Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).
19.0		CD	Minn. R. 7007.0800, subp. 4(D)	Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.
20.0		CD	hdr	RECORDKEEPING
21.0		CD	Minn. R. 7007.0800, subp. 5(C)	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).
22.0		CD	Minn. R. 7007.0800, subp. 5(B)	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.
23.0		CD	Minn. R. 7007.1200, subp. 4	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.
24.0		CD	hdr	REPORTING/SUBMITTALS
25.0		CD	Minn. R. 7019.1000, subp. 3	Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

26.0		CD	Minn. R. 7019.1000, subp. 2	Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.
27.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.
28.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.
29.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	Semiannual Deviations Report: due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.
30.0		CD	Minn. R. 7007.1150 - 7007.1500	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.
31.0		S/A	Minn. R. 7007.0400, subp. 2	Application for Permit Reissuance: due 180 days before expiration of Existing Permit
32.0		CD	Minn. R. 7007.1400, subp. 1(H)	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).
33.0		S/A	Minn. R. 7007.0800, subp. 6(C)	Compliance Certification: due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.
34.0		CD	Minn. R. 7019.3000 - 7019.3100	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.
35.0		CD	Minn. R. 7002.0005 - 7002.0095	Emission Fees: due 30 days after receipt of an MPCA bill.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **GP 001 Combustion Equipment**

Associated Items: EU 001 Space Heater UH-1
EU 002 Space Heater UH-2
EU 003 Space Heater UH-3
EU 004 Space Heater UH-4
EU 005 Space Heater UH-5
EU 006 Space Heater UH-6
EU 007 Space Heater UH-7
EU 008 Space Heater UH-8
EU 009 Space Heater UH-9
EU 010 Space Heater UH-10
EU 011 Space Heater UH-11
EU 012 Space Heater UH-12
EU 013 Space Heater UH-13
EU 014 Space Heater UH-14
EU 016 Space Heater UH-16
EU 019 Space Heater TR-1
EU 020 Space Heater TR-2
EU 021 Space Heater TR-3
EU 022 Space Heater TR-4
EU 023 Space Heater TR-5
EU 024 Space Heater TR-6
EU 025 Roof-top Unit RTU-1
EU 026 Roof-top Unit RTU-2
EU 027 Roof-top Unit RTU-3
EU 029 Furnace F-1
EU 030 Furnace F-2
EU 031 Bolier #1
EU 032 Boiler #2
EU 033 Boiler #3
EU 034 Boiler #4
EU 035 Makeup Air Unit #1
EU 037 Makeup Air Unit #3
EU 038 Water Heater WH-1
EU 047 Heater 1
EU 048 Heater 2
EU 049 Drying Oven
EU 050 PC Curing Oven
EU 051 Curing Ovens
EU 052 Burn Off Oven
EU 053 Heater 3

	NC/ CA	Type	Citation	Requirement

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

1.0		CD	hdr	The limits in GP 001 apply individually to each unit in the group.
2.0		LIMIT	Minn. R. 7011.0515, subp. 1	Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input . The potential to emit from each unit is 0.007 lb/million Btu heat input due to equipment design and allowable fuels.
3.0		LIMIT	Minn. R. 7011.0515, subp. 2	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
4.0		CD	Minn. R. 7005.0100, subp. 35a	Fuel Type: Natural gas only.
5.0		CD	Minn. R. 7007.0800, subp. 5	The Permittee shall keep records of fuel type on-site at all times.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **GP 002 Miscellaneous Metal Parts Coating**

Associated Items: EU 039 Paint Booth #1 (main plant open)

EU 040 Paint Booth #2 (main plant closed)

EU 043 Paint Booth #5 (Main open)

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2, 4, & 5	Employee Training The Permittee shall certify that all new and existing personnel, including contract personnel, who spray apply surface coatings in the units in GP 002 are trained in the proper application of surface coating. The Permittee shall maintain records of certification that each painter has completed the training required by this permit and the content of the training program. The records shall indicate the date of the initial training and most recent refresher training. The training program must include at a minimum: 1) A list of all current personnel by name and job description who are required to be trained; 2) Hands-on and classroom instruction that address, at a minimum, initial and refresher training in the following topics, as applicable:
2.0		CD	Minn. R. 7007.0800, subp. 2, 4, & 5	Employee Training Continued -spray gun equipment selection, set up, and operation, including measuring coating viscosity, selecting the proper fluid tip or nozzle, and achieving the proper spray pattern, air pressure and volume, and fluid delivery rate -spray technique for different types of coatings to improve transfer efficiency and minimize coating usage and overspray, including, as appropriate, maintaining the correct spray gun distance and angle to the part, using proper banding and overlap, and reducing lead and lag spraying at the beginning and end of each stroke - Routine spray booth filter maintenance, including filter selection - Compliance with the requirements of this permit
3.0		CD	Minn. R. 7007.0800, subp. 2, 4, & 5	Employee Training Continued 3) A description of the methods to be used at the completion of initial or refresher training to demonstrate, document, and provide certification of successful completion of the required training. The Permittee may show by documentation or certification that a painter's work experience and/or training has resulted in training equivalent to the training required by this permit are not required to provide initial training to these painters.
4.0		CD	hdr	NESHAP APPLICABILITY
5.0		CD	40 CFR Section 63.3891; Minn. R. 7007.1150; Minn. R. 7011.8090	Based on the current and expected operations of the affected source, this permit only includes the emission rate without add-on controls option specified in 40 CFR Section 63.3891(b). If the Permittee later chooses to switch to or add one or both of the other compliance options allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. MMMM for those options, document the switch as required by 40 CFR Section 63.3930(c), and report the switch in the next semiannual compliance report. In addition, the Permittee shall apply for a permit amendment, as appropriate (e.g., to add applicable NESHAP language, installation of an oxidizer, etc.).
6.0		CD	40 CFR Section 63.3882(b); Minn. R. 7011.8090	The affected source is the collection of all of the items listed below that are used for surface coating of miscellaneous metal parts and products within each subcategory. 1) All coating operations as defined in 40 CFR Section 63.3981; 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.
7.0		CD	Minn. R. 7007.0800, subp. 4 and 5	Unless otherwise noted, all equations for 40 CFR pt. 63, subp. MMMM referenced in the requirements of GP 002 can be found in Appendix B of this permit.
8.0		CD	hdr	EMISSION AND OPERATIONAL LIMITS
9.0		LIMIT	40 CFR Section 63.3890(b)(1); Minn. R. 7011.8090	HAPs - Organic: less than or equal to 2.6 lbs/gallon coating solids used during each 12-month compliance period.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

10.0		CD	40 CFR Section 63.3892(a); Minn. R. 7011.8090	For any coating operation(s) on which the Permittee uses the compliant material option or the emission rate without add-on controls option, the Permittee is not required to meet any operating limits.
11.0		CD	40 CFR Section 63.3893(a); Minn. R. 7011.8090	For any coating operation(s) on which the Permittee uses the compliant material option or the emission rate without add-on controls option, the Permittee is not required to meet any work practice standards.
12.0		CD	hdr	COMPLIANCE REQUIREMENTS
13.0		CD	CFR Section 63.3891; Minn. R. 7011.8090	The Permittee must include all coatings (as defined in 40 CFR Section 63.3981), thinners and/or other additives, and cleaning materials used in the affected source when determining whether the organic HAP emission rate is equal to or less than the applicable emission limit in 40 CFR Section 63.3890 ("HAP emission limit"). To make this determination, the Permittee must use at least one of the three compliance options listed in paragraphs (a) through (c) of 40 CFR Section 63.3891. As stated earlier, this permit only includes the requirements associated with emission rate without add-on controls option specified in 40 CFR Section 63.3891(b).
14.0		CD	CFR Section 63.3891(b); Minn. R. 7011.8090	Emission rate without add-on controls option. The Permittee shall demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s), the organic HAP emission rate for the coating operation(s) is less than or equal to the HAP emission limit, calculated as a rolling 12-month emission rate and determined on a monthly basis. The Permittee must meet all the requirements of 40 CFR Sections 63.3950, 63.3951, and 63.3952 (and documented in GP 002) to demonstrate compliance with the emission limit using this option.
15.0		CD	40 CFR Section 63.3900(a)(1) and (b); Minn. R. 7011.8090	The Permittee must be in compliance with the emission limitations as specified below: 1) Any coating operation(s) for which the Permittee uses the compliant material option or the emission rate without add-on controls option, as specified in 40 CFR Section 63.3891(a) and (b), must be in compliance with the HAP emission limit at all times. 2) The Permittee must always operate and maintain the affected source according to the provisions in 40 CFR Section 63.6(e)(1)(i).
16.0		CD	40 CFR Section 63.3951(a); Minn. R. 7011.8090	Mass Fraction of HAP: The Permittee shall determine the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each month by using one of the following options: 1) Method 311 (appendix A to 40 CFR pt. 63) for determining the mass fraction of organic HAP. Use the procedures specified in 40 CFR Section 63.3941(a)(1)(i) and (ii) when performing a Method 311 test; 2) Method 24 (appendix A to 40 CFR part 60), for coatings, to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for mass fraction of organic HAP. For reactive adhesives in which some of the HAP react to form solids and are not emitted to the atmosphere, the Permittee may use the alternative method contained in appendix A to 40 CFR pt. 63, subp. PPPP, rather than Method 24.
17.0		CD	40 CFR Section 63.3951(a); Minn. R. 7011.8090 (cont.)	2) continued The Permittee may use the volatile fraction that is emitted, as measured by the alternative method in appendix A to subpart PPPP, as a substitute for the mass fraction of organic HAP; 3) The Permittee may use an alternative test method for determining the mass fraction of organic HAP as specified in 40 CFR Section 63.3941(a)(3); 4) The Permittee may rely on information other than the three options given above, such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR Section 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For reactive adhesives in which some of the HAP react to form solids and are not emitted to the atmosphere, you may rely on manufacturer's data that expressly states the organic HAP or volatile matter mass fraction emitted.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

18.0		CD	40 CFR Section 63.3951(a); Minn. R. 7011.8090 (cont.)	4) continued If there is a disagreement between such information and results of a test conducted according to the three other options, then the test method results will take precedence unless, after consultation, the Permittee can demonstrate to the satisfaction of the Agency that the formulation data are correct; or 5) Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic HAP which must be counted toward the total organic HAP mass fraction of the materials. When test data and manufacturer's data for solvent blends are not available, the Permittee may use the default values for the mass fraction of organic HAP in these solvent blends listed in Table 3 or 4 of 40 CFR pt. 63, subp. MMMM.
19.0		CD	40 CFR Section 63.3951(a); Minn. R. 7011.8090 (cont.)	5) continued If these tables are used, the Permittee must use the values in Table 3 for all solvent blends that match Table 3 entries according to the instructions for Table 3, and the Permittee may use Table 4 only if the solvent blends in the materials used do not match any of the solvent blends in Table 3 and the Permittee knows only whether the blend is aliphatic or aromatic. However, if the results of a Method 311 (appendix A to 40 CFR pt. 63) test indicate higher values than those listed on Table 3 or 4, the Method 311 results will take precedence unless, after consultation, you demonstrate to the satisfaction of the Agency the formulation data are correct.
20.0		CD	40 CFR pt. 63, subp. MMMM, Table 3; 40 CFR Section 63.3951(a); Minn. R. 7011.8090	The Permittee may use the mass fraction values in Table 3 for solvent blends for which the Permittee does not have test data or manufacturer's formulation data and which match either the solvent blend name or the chemical abstract series (CAS) number. If a solvent blend matches both the name and CAS number for an entry, that entry's organic HAP mass fraction must be used for that solvent blend. Otherwise, use the organic HAP mass fraction for the entry matching either the solvent blend name or CAS number, or use the organic HAP mass fraction from Table 4 if neither the name nor CAS number match.
21.0		CD	40 CFR pt. 63, subp. MMMM, Table 4; 40 CFR Section 63.3951(a); Minn. R. 7011.8090	The Permittee may use the mass fraction values in Table 4 for solvent blends for which the Permittee does not have test data or manufacturer's formulation data.
22.0		CD	40 CFR Section 63.3951(b); Minn. R. 7011.8090	Volume Fraction of Solids: The Permittee shall determine the volume fraction of coating solids (liter (gal) of coating solids per liter (gal) of coating) for each coating used during each month by one of the methods given below. If test results obtained according to item 1 below do not agree with the information obtained under items 3 or 4 below, the test results will take precedence unless, after consultation, the Permittee can demonstrate to the satisfaction of the Agency that the formulation data are correct. 1) ASTM methods as specified in 40 CFR Section 63.3941(b)(1); 2) Alternative test method for determining the solids content of each coating as specified in 40 CFR Section 63.3941(b)(2); 3) Volume fraction of coating solids for each coating from the supplier or manufacturer; or 4) Calculate the volume fraction of coating solids using the equation in 40 CFR Section 63.3941(b)(4) and contained in Appendix B.
23.0		CD	40 CFR Section 63.3951(c); Minn. R. 7011.8090	Density: The Permittee shall determine the density of each liquid coating, thinner and/or other additive, and cleaning material used during each month from test results using ASTM Method D1475-98, "Standard Test Method for Density of Liquid Coatings, Inks, and Related Products" (incorporated by reference, see 40 CFR Section 63.14), information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If the Permittee is including powder coatings in the compliance determination, determine the density of powder coatings, using ASTM Method D5965-02, "Standard Test Methods for Specific Gravity of Coating Powders" (incorporated by reference, see 40 CFR Section 63.14), or information from the supplier.
24.0		CD	40 CFR Section 63.3951(c); Minn. R. 7011.8090 (cont.)	continued If there is disagreement between ASTM Method D1475-98 or ASTM Method D5965-02 test results and other such information sources, the test results will take precedence unless, after consultation the Permittee demonstrates to the satisfaction of the Agency that the formulation data are correct. If the Permittee purchases materials or monitor consumption by weight instead of volume, the Permittee does not need to determine material density. Instead, the Permittee may use the material weight in place of the combined terms for density and volume in Equations 1A, 1B, 1C, and 2.

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25.0		CD	40 CFR Section 63.3951(d); Minn. R. 7011.8090	Volume: The Permittee shall determine the volume (liters or gallons) of each coating, thinner and/or other additive, and cleaning material used during each month by measurement or usage records. If the Permittee purchases materials or monitors consumption by weight instead of volume, the Permittee does not need to determine the volume of each material used. Instead, the Permittee may use the material weight in place of the combined terms for density and volume in Equations 1A, 1B, and 1C.
26.0		CD	40 CFR Section 63.3951(e); Minn. R. 7011.8090	The mass of organic HAP emissions is the combined mass of organic HAP contained in all coatings, thinners and/or other additives, and cleaning materials used during each month minus the organic HAP in certain waste materials. The Permittee shall calculate the following using the equations referenced in this subpart and Appendix B of this permit: 1) Calculate the mass of organic HAP emissions using Equation 1. 2) Calculate the kg organic HAP in the coatings used during the month using Equation 1A. 3) Calculate the kg of organic HAP in the thinners and/or other additives used during the month using Equation 1B. 4) Calculate the kg organic HAP in the cleaning materials used during the month using Equation 1C. 5) If the Permittee chooses to account for the mass of organic HAP contained in waste materials sent or designated for shipment to a hazardous waste TSDF in Equation 1, then the Permittee must determine the mass according to 40 CFR Section 63.3951(e)(4)(i) through (iv).
27.0		CD	40 CFR Section 63.3951(f); Minn. R. 7011.8090	The Permittee shall determine the total volume of coating solids used, liters or gallons, which is the combined volume of coating solids for all the coatings used during each month, using Equation 2 contained in 40 CFR part 63 subpart MMMM and Appendix B of this permit.
28.0		CD	40 CFR Section 63.3951(g); Minn. R. 7011.8090	The Permittee shall calculate the organic HAP emission rate for the compliance period, kg (lb) organic HAP emitted per liter (gal) coating solids used, using Equation 3 of 40 CFR part 63 subpart MMMM and Appendix B of this permit.
29.0		CD	40 CFR Section 63.3952(a); Minn. R. 7011.8090	To demonstrate continuous compliance, the organic HAP emission rate for each compliance period, determined according to 40 CFR Section 63.3951(a) through (g), must be less than or equal to the HAP emission limit. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in 40 CFR Section 63.3950 is the end of a compliance period consisting of that month and the preceding 11 months. The Permittee must perform the calculations in 40 CFR Section 63.3951(a) through (g) on a monthly basis using data from the previous 12 months of operation.
30.0		CD	40 CFR Section 63.3952(b); Minn. R. 7011.8090	If the organic HAP emission rate for any 12-month compliance period exceeded the HAP emission limit, this is a deviation from the emission limitation for that compliance period and must be reported as specified in 40 CFR Sections 63.3910(c)(6) and 63.3920(a)(6).
31.0		CD	hdr	RECORDKEEPING
32.0		CD	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090	The Permittee must collect and keep records of the data and information specified below. Failure to collect and keep these records is a deviation from the applicable standard. 1) A copy of each notification and report that the Permittee submitted to comply with 40 CFR pt. 63, subp. MMMM, and the documentation supporting each notification and report; 2) Records of the data and calculations used to determine the predominant activity alternative of Section 63.3890(c);
33.0		CD	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)	continued 3) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP and density for each coating, thinner and/or other additive, and cleaning material, and the volume fraction of coating solids for each coating. If the Permittee conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, the Permittee must keep a copy of the complete test report. If the Permittee uses information provided to the Permittee by the manufacturer or supplier of the material that was based on testing, the Permittee must keep the summary sheet of results provided to the Permittee by the manufacturer or supplier. The Permittee are not required to obtain the test report or other supporting documentation from the manufacturer or supplier;

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34.0		CD	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)	continued 4) For each compliance period, the records specified below: - A record of the coating operations on which the Permittee used each compliance option and the time periods (beginning and ending dates and times) for each option the Permittee used; and - A record of the calculation of the total mass of organic HAP emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 1, 1A, 1B, 1C, and 2, if applicable, the calculation used to determine mass of organic HAP in waste materials according to 40 CFR Section 63.3951(e)(4); the calculation of the total volume of coating solids used each month using Equation 2; and the calculation of each 12-month organic HAP emission rate using Equation 3; 5) A record of the name and volume of each coating, thinner and/or other additive, and cleaning material used during each compliance period;
35.0		CD	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)	continued 6) A record of the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each compliance period unless the material is tracked by weight; 7) A record of the volume fraction of coating solids for each coating used during each compliance period; 8) The density for each coating, thinner and/or other additive, and cleaning material used during each compliance period; 9) If the Permittee uses an allowance in Equation 1 for organic HAP contained in waste materials according to 40 CFR Section 63.3951(e)(4), the Permittee must keep the following records: - The name and address of each TSDF to which the Permittee sent waste materials for which the Permittee uses an allowance in Equation 1 in Appendix B of this permit; a statement of which subparts under 40 CFR parts 262, 264, 265, and 266 apply to the facility; and the date of each shipment;
36.0		CD	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)	continued - Identification of the coating operations producing waste materials included in each shipment and the month or months in which the Permittee used the allowance for these materials in Equation 1; - The methodology used in accordance with 40 CFR Section 63.3951(e)(4) to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a TSDF each month; and the methodology to determine the mass of organic HAP contained in these waste materials. This must include the sources for all data used in the determination, methods used to generate the data, frequency of testing or monitoring, and supporting calculations and documentation, including the waste manifest for each shipment. 10) The Permittee must keep records of the date, time, and duration of each deviation.
37.0		CD	40 CFR Sections 63.3931 and 63.3952(d); Minn. R. 7011.8090	The Permittee's records must be in a form suitable and readily available for expeditious review, according to 40 CFR Section 63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database. As specified in 40 CFR Section 63.10(b)(1), the Permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee must keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). The Permittee may keep the records off-site for the remaining 3 years.
38.0		CD	hdr	REPORTING (See Table B for additional requirements)
39.0		S/A	40 CFR Section 63.3920(a)(1)(i), (ii), and (iv); Minn. R. 7011.8090	Semiannual Compliance Report: due 31 days after end of each calendar half-year starting 02/01/2008. The report shall contain the information specified in Table A of this permit, under GP002. Each semiannual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. This report may be submitted with the Semiannual Deviations Report also listed in Table B of this permit. See Table A for the requirements of the content of this report.

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40.0		CD	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090	Content of Semiannual Compliance Report: At a minimum, the report shall include: 1) Company name and address; 2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; 3) Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. Note that the information reported for each of the 6 months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation; 4) Identification of the compliance option or options specified in 40 CFR Section 63.3891 that the Permittee used on each coating operation during the reporting period. If the Permittee switched between compliance options during the reporting period, the Permittee must report the beginning and ending dates for each option the Permittee used.
41.0		CD	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090 (cont)	continued 5) the calculation results for each rolling 12-month organic HAP emission rate during the 6-month reporting period; 6) If the Permittee used the predominant activity alternative in Section 63.3890(c)(1), the annual determination of the predominant activity if it was not included in the previous semi-annual compliance report; 7) If there were no deviations from the applicable HAP emission limit, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period; and
42.0		CD	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090 (cont)	continued 8) If there was a deviation from the applicable HAP emission limit, the semiannual compliance report must contain the following information: - The beginning and ending dates of each compliance period during which the 12-month organic HAP emission rate exceeded the applicable HAP emission limit; - The calculations used to determine the 12-month organic HAP emission rate for the compliance period in which the deviation occurred. The Permittee must submit the calculations for Equations 1, 1A, 1B, 1C, 2, and 3, and if applicable, the calculation used to determine mass of organic HAP in waste materials according to 40 CFR Section 63.3951(e)(4). The Permittee does not need to submit background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports); and - A statement of the cause of each deviation.

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Facility Name: Winona Lighting Inc

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Subject Item: **GP 003 Group Limits**

Associated Items: EU 039 Paint Booth #1 (main plant open)

EU 040 Paint Booth #2 (main plant closed)

EU 043 Paint Booth #5 (Main open)

EU 044 Degreaser

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	DAILY RECORDKEEPING - VOC, HAP, and PM
2.0		CD	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000; 40 CFR Section 63.2; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain the total quantity of all coatings and other VOC, solids, and HAP containing materials used at the units of GP 003. This shall be based on written or electronic records of paint and solvent use for each paint job at each paint booth and solvent use for the degreaser.
3.0		CD	hdr	VOC LIMIT, MONTHLY RECORDKEEPING, AND CALCULATIONS
4.0		LIMIT	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; 40 CFR Section 70.2 and Minn. R. 7007.0200	Volatile Organic Compounds: less than or equal to 48 tons/year using 12-month Rolling Sum
5.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Recordkeeping -- VOC Emissions. By the last day of the calendar month, the Permittee shall calculate and record the following: 1) The total usage of VOC-containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC content of each material as determined by the Material Content requirement of this permit; 2) The VOC emissions for the previous month using the formulas specified in this permit; and 3) The 12-month rolling sum VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months.
6.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Calculation -- VOC Emissions. The Permittee shall calculate VOC emissions using the following equations: VOC (tons/month) = V - W V = (A1 x B1) + (A2 x B2) + (A3 x B3) + ... W = (C1 x D1) + (C2 x D2) + C3 x D3) + ...
7.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Calculation -- VOC Emissions Continued where: V = total VOC used in tons/month; A# = amount of each VOC-containing material used, in tons/month; B# = weight percent VOC in A#, as a fraction; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of VOC in C#, as a fraction.
8.0		CD	hdr	HAP LIMITS: FIRST 12 MONTHS AFTER PERMIT ISSUANCE

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9.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 63.2; To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	For the first 12 months after permit issuance, the Permittee shall comply with the following limits HAPs - Total: less than or equal to 1*n tons/year HAPs - Single: less than or equal to 8.5/12*n tons/year Where: n = number of months since permit issuance The first month, n=1, shall represent the period of time from permit issuance to the last day of the month in which the permit was issued. All subsequent months shall be calendar months. All references to calendar months in GP 001 shall, for the first month of operation, meet the definition above. The Permittee shall determine compliance with these limits according to the procedure below.
10.0		CD	hdr	HAP LIMITS: 12 MONTHS AFTER PERMIT ISSUANCE
11.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 63.2; To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	HAPs - Total: less than or equal to 12 tons/year using 12-month Rolling Sum
12.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 63.2; To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	HAP-Single: less than or equal to 8.5 tons/year using 12-month Rolling Sum
13.0		CD	hdr	MONTHLY HAP RECORDKEEPING AND CALCULATIONS
14.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Recordkeeping - HAP Emissions. By the last day of the calendar month, the Permittee shall calculate and record the following using the formulas specified in this permit: 1). The total HAP-containing materials used in the previous calendar month using the daily usage records. This record shall also include the individual and total HAP contents of each HAP-containing material used in the previous month, as determined by the Material Content requirement of this permit; 2). The total and individual HAP emissions for the previous calendar month using the formulas specified in this permit; and 3) for the first 12 months after permit issuance: - the sum of total and individual HAP emissions for all months since permit issuance by summing the monthly emissions data for those months. - the total and individual HAP emissions limit using the formulas in GP 003 under "HAP LIMITS: FIRST 12 MONTHS AFTER PERMIT ISSUANCE
15.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Recordkeeping - HAP Emissions Continued. 4) For all months after the first 12 months after permit issuance, the 12-month rolling sum individual and total HAP emissions for the previous 12-month period by summing the monthly HAP emissions data for the previous 12 months.
16.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Calculation -- HAP Emissions. The Permittee shall calculate each individual HAP and total HAP emissions using the following equations: HAP Emissions (tons/month) = H - W H = (A1 x B1) + (A2 x B2) + (A3 x B3) + ... W = (C1 x D1) + (C2 x D2) + (C3 x D3) + ...

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17.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly HAP Emissions Calculation Continued: Where: H = the amount of each pollutant (either total HAP or each individual HAP), used, in tons/month. A# = Amount of each HAP-containing material used in the previous month, in tons/month. B# = weight percent of each individual or total HAP in A#, as a fraction (e.g., 50% is 0.50). W = the amount of each pollutant (either total HAP or each individual HAP) shipped in waste, in tons/month. C# = amount, in tons/month, of each HAP-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero. D# = weight percent of each individual or total HAP in C#, as a fraction.
18.0		CD	hdr	PARTICULATE MATTER LIMITS, MONTHLY RECORDKEEPING, AND CALCULATIONS
19.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 5 tons/year using 12-month Rolling Sum
20.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	PM < 10 micron: less than or equal to 5 tons/year using 12-month Rolling Sum
21.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	PM < 2.5 micron: less than or equal to 5 tons/year using 12-month Rolling Sum
22.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Recordkeeping - PM/PM10/PM2.5 Emission. By the last day of the calendar month, the Permittee shall calculate and record the following: 1) The total usage of each solids-containing material for the previous calendar month using the daily usage records. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit; 2) The PM, PM10, and PM2.5 emissions for the previous month using the formulas specified in this permit; and 3) The 12-month rolling sum PM, PM10, PM2.5 emissions for the previous 12-month period by summing the monthly PM, PM10, PM2.5 emissions data resepctively for the previous 12 months.
23.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly Calculation -- PM/PM10/PM2.5 Emissions. The Permittee shall calculate PM/PM10/PM2.5 emissions from the spray booths using the following equations: PM, PM10, or PM2.5 (tons/month) = S(1-CE)(1-TE) - W S = (A1 x B1) + (A2 x B2) + (A3 x B3) + ... W = (C1 x D1) + (C2 x D2) + (C3 x D3) + ...
24.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly PM/PM10/PM2.5 Emissions Calculation Continued: Where: S = total solids used in tons/month; CE = overall control efficiency, as a fraction. This value shall correspond to limit listed in this permit under CE 003, CE 004, and CE 007 for the appropriate pollutant and the appropriate panel filter and as listed requirement below; TE = transfer efficiency, as a fraction. This shall be 0.75, unless otherwise approved by the MPCA in writing. A# = amount of each solids-containing material sprayed, in tons/month; B# = weight percent solids in A#, as a fraction; W = the amount of solids shipped in waste, in tons/month; C# = amount, in tons/month, of each solids-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of solids in C#, as a fraction.

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25.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Monthly PM/PM10/PM2.5 Emissions Calculation Continued - The Permittee shall use the following for the values of the variable "CE" when calculating particulate matter, particulate matter less than 10 microns, and particulate matter less than 2.5 microns emissions from the paint booths in GP 003. Emissions from EU 039 (CE 003) CE = 0.68 Emissions from EU 040 (CE 004) CE = 0.85 Emissions from EU 043 (CE 007) CE = 0.68
26.0		CD	hdr	OPERATIONAL REQUIREMENTS
27.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall vent emissions from all spray booths to control equipment meeting the requirements of CE 003, CE 004, and CE 007 as described below. The units shall be vented as follows: EU 039 shall be vented to a panel filter meeting the requirements of CE 003 EU 040 shall be vented to a panel filter meeting the requirements of CE 004 EU 043 shall be vented to a panel filter meeting the requirements of CE 007
28.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Material Content - VOC, HAPs, and Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coating and solvent materials shall be determined by either 1) the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. When using the MSDS as the basis of calculating particulate emissions, the conservative assumption is made that PM consists entirely of PM less than 10 microns or less than 2.5 microns; or 2) A method for determining VOC, HAP, or solids content that is specified by 40 CFR pt. 63, subp. MMMM and contained under GP 004 of this permit. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.
29.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Material Content Continued - Other alternative methods approved by the MPCA may be used to determine the VOC, HAPs, and solids contents. The Commissioner reserves the right to require the Permittee to determine the VOC, HAP, and solids contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.
30.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Waste Credit: If the Permittee elects to obtain credit for HAPs, solids, and/or VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC, solids, and/or total and individual HAP content for each credited shipment. 1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, solids, total HAP, and each individual HAP, excluding water. 2) The Permittee may use supplier data for raw materials to determine the VOC, solids, and total and individual HAP contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC, solids, and total and individual HAP content of any of the materials.
31.0		CD	Minn. R. 7005.0100, subp. 35a	Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP003. These assumptions are listed in Appendix C of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.
32.0		CD	Minn. R. 7007.0800, subp. 2	The Permittee shall not use any halogenated solvents in the degreaser, EU 044. At all times, the Permittee shall maintain on-site records of the type of degreaser solvent in use.

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Subject Item: **GP 004 Miscellaneous Process Equipment**

Associated Items: EU 039 Paint Booth #1 (main plant open)

EU 040 Paint Booth #2 (main plant closed)

EU 043 Paint Booth #5 (Main open)

EU 044 Degreaser

EU 045 Sandblaster

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATIONAL REQUIREMENTS
2.0		CD	Minn. R. 7007.0800, subp. 2 and 14; Minn. R. 7011.0715, subp. 1(A)	The Permittee shall vent emissions from EU 045 to a filter meeting the requirements of CE 001 at all times that EU 045 is in operation.
3.0		CD	hdr	LIMITS The limits below apply individually to each unit in GP 004.
4.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.
5.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity

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Facility Name: Winona Lighting Inc

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Subject Item: **GP 005 Panel Filters**

Associated Items: CE 003 Mat or Panel Filter

CE 004 Mat or Panel Filter

CE 007 Mat or Panel Filter

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	The requirements in GP 005 apply individually to each panel filter. See CE 003, CE 004, and CE 007 for additional requirements associated with the panel filters
2.0		CD	hdr	LIMITS AND OPERATIONAL REQUIREMENTS
3.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Pressure Drop: greater than or equal to 0.01 inches of water column and less than or equal to 0.40 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.
4.0		CD	MInn. R. 7007.0800, subps. 4 and 5	Pressure Drop Recordkeeping. At least once each each 24 hours when in operation, the Permittee shall read and record the pressure drop across the panel filter. The Permittee shall record the time and date of each pressure drop reading and whether or not the observed pressure drop was within the range specified in this permit.
5.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each panel filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections.
6.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.
8.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining necessary parts for routine repairs of the monitoring equipment, when the monitored filter is in operation.
9.0		CD	Minn. R. 7007.0800, subp. 4	The Permittee shall calibrate each pressure gauge at least once every 12 months and shall maintain a written record of any action resulting from the calibration.
10.0		CD	Minn. R. 7007.0800, subp. 14	Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **GP 006 Process Heaters Subject to NESHAP Subpart DDDDD**

Associated Items: EU 047 Heater 1

EU 048 Heater 2

EU 049 Drying Oven

EU 050 PC Curing Oven

EU 051 Curing Ovens

EU 052 Burn Off Oven

EU 053 Heater 3

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	The requirements of GP 009 apply individually to each unit in GP 009.
2.0		CD	hdr	WORK PRACTICE STANDARDS
3.0		CD	40 CFR Section 63.7500(e) and Table 3 to subp. DDDDD of 40 CFR pt. 63	The Permittee shall complete a tune-up, as specified below, once every 5 years for each process heater in GP 006.
4.0		CD	40 CFR Section 63.7515(d)	Each 5-year tune-up specified in Section 63.7540(a)(12) shall be conducted no more than 61 months after the previous tune-up. The first tune-up shall be no later than 61 months after the initial startup of each new affected source.
5.0		CD	40 CFR Section 63.7515(g)	For units that are not operating at the time of their scheduled tune-up, the Permittee shall complete a subsequent tune-up following the procedures of Section 63.7540(a)(10)(i) through (vi) and the schedule described in Section 63.7540(a)(13), described below.
6.0		CD	40 CFR Section 63.7540(a)(13)	If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.
7.0		CD	40 CFR Section 63.7505(a) and 63.7500(f)	The Permittee shall be incompliance with the work practice standards at all times the affected units is operating other than periods of startup, shutdown, or malfunction.
8.0		CD	hdr	CONTINUOUS COMPLIANCE DEMONSTRATION
9.0		CD	40 CFR Section 63.7540(a)(12) and 40 CFR Section 63.7540(a)(10)(i)-(vi)	Unit Tune-up Procedures The Permittee shall i) As applicable, inspect the burner, and clear or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled or unscheduled unit shutdown, but the Permittee shall inspect each burner at least once every 72 months. At units where entry into a piece of process equipment or into a storage vessel is required to compete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment; ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; iii) Inspect the system controlling to air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The Permittee may delay the inspection until the next scheduled unit shutdown;
10.0		CD	40 CFR Section 63.7540(a)(12) and 40 CFR Section 63.7540(a)(10)(i)-(vi)	Unit Tune-up Procedures Continued iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOx requirement to which the unit is subject; v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent before and after the adjustments are made. Measurements may be either on a dry or wet bases, as long as it is the same basis before and after the adjustments are made. Measurements may be taken using a portable CO analyzer; and vi) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (a)(10)(vi)(A) through (C) of this section, as listed below A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

11.0		CD	40 CFR Section 63.7540(a)(12) and 40 CFR Section 63.7540(a)(10)(i)-(vi)	Unit Tune-up Procedures Continued B) A description of any corrective actions taken as part of the tune-up; and C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.
12.0		CD	hdr	NOTIFICATIONS (see Table B)
13.0		S/A	40 CFR Section 63.7545(b)	Notification: due before 05/30/2013. The Permittee shall submit an initial notification according to 40 CFR Section 63.9(b)(2) for affected sources for which startup was before January 31, 2013.
14.0		S/A	40 CFR Section 63.9(b)(4)(v); Minn. R. 7019.0100, subp. 2	Notification of the Actual Date of Initial Startup: due 15 days after Initial Startup. Submit the name and number of each unit and the actual date of initial startup each unit.
15.0		CD	hdr	REPORTS (see also Table B)
16.0		S/A	40 CFR Section 63.7550(b) and Table 9 to subp. DDDDD of 40 CFR pt. 63	Compliance Status Report: due 31 days after end of each calendar 60 months starting 01/01/2013. The first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR Section 63.7591 and ending on January 1, 2018. Each subsequent report shall cover the subsequent 5-year period from January 1 to December 31. See Table A for content of the report and how to submit the report.
17.0		CD	40 CFR Section 63.7550(c)(1) and Table 9 to subp. DDDDD of 40 CFR pt. 63	Content of Compliance Status Report: i) Company and Facility name and address; ii) Process units information; iii) Date of report and beginning and ending dates of the reporting period; iv) The total operating time during the reporting period; and v) The date of the most recent tune-up for each unit subject to only the requirement to conduct a 5-year tune-up. Indclude the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. vi) If there are no deviations from the applicable requirements for work practice standards in Table to this subpart, a statement that there were no deviations from the work practice standards during the reporting period. vii) if there was a deviation from an applicable work practice standard during the reporting period, the report must contain the following information
18.0		CD	40 CFR Section 63.7550(c)(1) and (d) and Table 9 to subp. DDDDD of 40 CFR pt. 63	1) A description of the deviation and which work practice standard from which you deviated 2) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken
19.0		CD	40 CFR Section 63.7550(h)(3)	The Permittee shall submit the Compliance Status Report electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due the Permittee shall submit the report to the Administrator at the appropriate address listed in 40 CFR Section 63.13.
20.0		CD	hdr	RECORDKEEPING
21.0		CD	40 CFR Section 63.7555	The Permittee shall maintain the following records i) a copy of each notification and report submitted to comply with this subpart; ii) records of each compliance demonstration (tune-up); iii) records of the calendar date, time, occurrence and duration of each startup and shutdown; iv) records of the types(s) and amount(s) of fuels used during each startup and shutdown.
22.0		CD	40 CFR Section 63.7560 and Table 8 to subp. DDDDD of 40 CFR pt. 63	The Permittee shall maintain each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee shall keep each record on site, or they must be accessible from on site (e.g. through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. Records may be kept off site for the remaining 3 years.
23.0		CD	hdr	GENERAL PROVISIONS
24.0		CD	40 CFR Section 63.7565 and Table 10 to subp. DDDDD of 40 CFR pt. 63	The Permittee shall comply with the applicable General Provisions contained in Table 10 to subpart DDDDD of 40 CFR pt. 63.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

Associated Items: EU 045 Sandblaster

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter, CE 001 such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency
2.0		LIMIT	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter, CE 001 such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 93 percent control efficiency
3.0		LIMIT	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter, CE 001 such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 93 percent control efficiency
4.0		CD	Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter, CE 001 at all times that any emission unit controlled by the fabric filter, CE 001 is in operation. The Permittee shall document periods of non-operation of the fabric filter, CE 001.
5.0		LIMIT	Minn. R. 7007.0800, subps. 2 and 14	Pressure Drop: greater than or equal to 0.01 inches of water column and less than or equal to 0.50 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.
6.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Recordkeeping of Pressure Drop. The Permittee shall record the pressure drop at least once every 24 hours when the fabric filter, CE 001 is in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the fabric filter, CE 001 components. The Permittee shall maintain a written record of these inspections.
8.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter, CE 001 or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter, CE 001. The Permittee shall keep a record of the type and date of any corrective action taken.
9.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter, CE 001 is in operation.
10.0		CD	Minn. R. 7007.0800, subps. 4 and 5	The Permittee shall calibrate the pressure gauge at least once every 12 months and shall maintain a written record of any action resulting from the calibration.
11.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the fabric filter, CE 001 in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 003 Mat or Panel Filter**

Associated Items: EU 039 Paint Booth #1 (main plant open)

GP 005 Panel Filters

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS AND OPERATIONAL REQUIREMENTS
2.0		CD	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the CE 003 any time that EU 039, the equipment controlled by the panel filter, is in operation. The Permittee shall document periods of non-operation of CE 003.
3.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 68 percent control efficiency
4.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 10 micron: greater than or equal to 68 percent control efficiency
5.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 68 percent collection efficiency
6.0		CD	hdr	HOOD EVALUATION AND CERTIFICATION
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. There shall not be more than 12 months between each annual hood evaluation.

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 004 Mat or Panel Filter**

Associated Items: EU 040 Paint Booth #2 (main plant closed)

GP 005 Panel Filters

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS AND OPERATIONAL REQUIREMENTS
2.0		CD	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain CE 004 any time that EU 040, equipment controlled by the panel filter, is in operation. The Permittee shall document periods of non-operation of the control equipment.
3.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 85 percent control efficiency
4.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 10 micron: greater than or equal to 85 percent control efficiency
5.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 85 percent control efficiency

COMPLIANCE PLAN CD-01

Facility Name: Winona Lighting Inc

Permit Number: 16900092 - 001

Subject Item: **CE 007 Mat or Panel Filter**

Associated Items: EU 043 Paint Booth #5 (Main open)

GP 005 Panel Filters

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS AND OPERATIONAL REQUIREMENTS
2.0		CD	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain CE 007 any time that EU 043, the equipment controlled by the panel filter, is in operation. The Permittee shall document periods of non-operation of the control equipment.
3.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 68 percent control efficiency
4.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 10 micron: greater than or equal to 68 percent control efficiency
5.0		LIMIT	To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 68 percent collection efficiency
6.0		CD	hdr	HOOD EVALUATION AND CERTIFICATION
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Initial Hood Certification and Evaluation: Within 180 days after permit issuance, the Permittee shall certify that the control device hood conforms to the requirements listed in Minn. R. 7011.0072, subp. 2(B). The certification shall meet the requirements of Minn. R. 7011.0072, subps. 2 and 3. The Permittee shall maintain a copy of the evaluation and certification on site.
8.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Initial Hood Certification and Evaluation Continued: If the Permittee is unable to certify that the hood conforms to the requirements listed in Minn. R. 7011.0072, subp. 2(B), the Permittee shall complete one of the following within 180 days of permit issuance: 1 Make any needed changes to the hood to bring it into compliance with the design and operating practives of "Industrial Ventilation - A Manual of Recommended Practices", 21st ed. Once the hood is in compliance, complete the evaluation and certification according to the requirement above; 2. Test the hood capture efficiency in accordance with Minn. R. 7017.2001 to 7017.2060. If the test shows that the hood achieves a capture efficiency of less than 80%, the Permittee shall apply for an amendment to revise the capture efficiency in the permit within 60 days of receipt of a Notification of Noncompliance from the MPCA; or
9.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Initial Hood Certification and Evaluation Continued: 3. Submit a permit application to propose an alternative capture efficiency based on engineering calculations prepared by an engineer or Certified Industrial Hygenist.
10.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Annual Hood Evaluation: At least once every 12 months after the initial hood certification and evaluation, the Permittee shall measure and record the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. There shall not be more than 12 months between each annual hood evaluation.

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

APR 0 6 2015

Mr. Scott Miller
Modine Manufacturing Company
822 Industrial Drive
Trenton, MO 64683

Re: Modine Manufacturing Company, 079-0004
Permit Number: **OP2014-029**

Dear Mr. Miller:

Enclosed with this letter is your intermediate operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty (30) days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If you send your appeal by registered or certified mail, we will deem it filed on the date you mailed it. If you send your appeal by a method other than registered or certified mail, we will deem it filed on the date the AHC receives it.

If you have any questions or need additional information regarding this permit, please do not hesitate to contact David Buttig at the Department of Natural Resources, 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

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS/dbk

Enclosures

c: Northeast Regional Office
PAMS File: 2012-06-034

Missouri Department of Natural Resources
Air Pollution Control Program

INTERMEDIATE STATE PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

Intermediate Operating Permit Number: OP2014-029
Expiration Date: APR 0 6 2020
Installation ID: 079-0004
Project Number: 2012-06-034

Installation Name and Address
Modine Manufacturing Company
822 Industrial Drive
Trenton, MO 64683
Grundy County

Parent Company's Name and Address
Modine Manufacturing Company
1500 DeKoven Avenue
Racine, WI 53403

Installation Description:

Modine Manufacturing Company operates a radiator production installation in Trenton. The installation is a synthetic minor source of Volatile Organic Compounds and Hazardous Air Pollutants.

Prepared by:
David Buttig
Operating Permit Unit

Director or Designee
Department of Natural Resources

APR 0 6 2015
Effective Date

Table of Contents

I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

Modine Manufacturing Company operates a radiator production installation in Trenton, Missouri. The installation has the potential to be a major source for both volatile organic compounds (VOCs) and Hazardous Air Pollutants (HAPs). However, the installation, in their Intermediate Operating Permit, is choosing to limit the plant wide emissions to less than 100 tons per year for VOCs, less than 10 tons per year for each HAP, and less than 25 tons per year for total HAPs, on a 12 month rolling average. The reported actual emissions for the past five years for the installation are listed below:

Reported Air Pollutant Emissions, tons per year					
Pollutants	2012	2011	2010	2009	2008
Particulate Matter ≤ Ten Microns (PM_{10})	2.84	2.80	1.61	1.61	2.78
Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)	0.27	0.27	0.32	0.32	0.38
Sulfur Oxides (SO_x)	0.219	0.0229	--	--	--
Nitrogen Oxides (NO_x)	3.71	3.87	3.47	3.47	4.02
Volatile Organic Compounds(VOC)	45.43	35.30	28.73	28.73	51.76
Carbon Monoxide (CO)	2.96	3.09	2.85	2.85	3.32
Lead (Pb)	--	--	--	--	--
Hazardous Air Pollutants (HAPs)	--	--	--	--	--
Ammonia (NH_3)	0.11	0.11	0.11	0.11	0.13

EMISSION UNITS WITH SPECIFIC LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations.

EIQ Reference #	Description of Emission Source
EP-88	Metal Forming Operations – the following identified operations report emissions under EP-88: Presses: M-2530 Press Q – Minster 150 Ton M-2532 Press C – Minster 250 Ton M-3267 Niagara 250 Ton M-3935 Press E – Niagra 150 Ton M-3942 Press D – Niagra 150 Ton

EIQ Reference #	Description of Emission Source
	M-9542 Press B – Blow 600 Ton
	M-10466 – Blow 200 Ton Slot Down Press
	Tube Mills:
	M-6649 East Tube Mill – 303
	M-9255 W. Tube Mill – 3001
	Fin Machines:
	M-8198 Fin Roll # 13 – Chrysler
	M-8435 Fin Roll # 14 – Chrysler
	M-10434 Insert Fin Machine
	M-7967 Fin Roll # 1
	M-9287 Fin Roll # 16 – E&R # 1
	M-9869 Fin Roll # 17 – E&R # 2
	M-8795 Fin Roll # 15 – F&P
	M-10286 Fin Roll # 18 E&R # 3
	M-9293 FR20 - CAC fin roll
	M-10499 E&R # 4 (CAC Fin Machine)
	M-10923 E&R #6 Rad Fin Machine
	M-11202 Long-Coil Fin Machine
	M-10826 2 Row CAC Fin Machine
	M-10640 Fin Machine Echo – Ambient
	M-7571 Modine Round Roll Fin Machine
	M-10611 Fin Machine Echo - Insert

EMISSION UNITS WITHOUT SPECIFIC LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance. However any pollutants emitted by these sources are still subject to Plant Wide Limitations outlined in Section II of this permit.

EIQ Reference #	Description of Emission Source
EP-52 & 55	Welding Operations
EP-81	Nocolok Furnace #2 Thermal De-oiler Oven, 1.03 MMBtu/hr, Natural Gas/Propane – fired
EP-84	Nocolok Furnace #2 Gas Combustion, 3.09 MMBtu/hr, Natural Gas/Propane – fired
EP-86	Powder Paint Cure Oven, 3.09 MMBtu/hr, Natural Gas/Propane fired
EP-87	Paint Hook Burn Off Oven, 0.55 MMBtu/hr, Natural Gas/Propane fired
EP-89	MIG Robot Welding Operations
EP-90	TIG Robot Repair Welding
EP-91	Robot Welder Operations
EP-100	Various Building Heating Furnaces, 14.42 MMBtu/hr (total), Natural Gas/Propane - fired

DOCUMENTS INCORPORATED BY REFERENCE

These documents have been incorporated by reference into this permit:

1) Construction Permit 122011-003, Issued December 05, 2011

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

PERMIT CONDITION PW001
10 CSR 10-6.065 Operating Permits
10 CSR 10-6.065(5)(C)2. Voluntary Limitation(s)

Emission Limitation:

1) The permittee shall emit less than ten tons of any individual HAP in any consecutive 12-month period; and
2) The permittee shall emit less than 25 tons of any combination of HAPs in any consecutive 12-month period.

Monitoring/Recordkeeping:

1) The permittee shall maintain an accurate record of emissions of HAPs emitted into the atmosphere from this installation. Example forms are attached as Attachment B-1 and B-2. The permittee may use these forms, or forms of its own, so long as the forms used will accurately demonstrate compliance with the HAPs emission limitation (less than 10 tons in any consecutive 12-month period of any individual HAP or less than 25 tons in any consecutive 12- month period of any combination of HAPs).
2) These records shall be made immediately available for inspection to the Missouri Department of Natural Resources' personnel upon request.
3) These records shall be kept on-site for five years.

Reporting:

The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any deviation from or exceedance of any of the terms imposed by this permit condition, or any malfunction which causes a deviation from or exceedance of this permit condition.

Permit Condition PW002
10 CSR 10-6.065 Operating Permits
10 CSR 10-6.065(5)(C)2. Voluntary Limitation(s)

Emission Limitation:

The permittee shall emit into the atmosphere less than 100 tons of Volatile Organic Compounds (VOCs) from the entire installation in any consecutive 12-month period.

Monitoring/Recordkeeping:

The permittee shall maintain an accurate record of emissions of VOCs emitted into the atmosphere from this installation. The permittee shall record the monthly and running 12-month totals of the VOC emissions from this installation. Example form is attached as Attachment A (Plant-Wide Emissions Tracking Record). The permittee may use this form, or forms of its own, so long as the forms used will

accurately demonstrate compliance with the VOC emission limitation (less than 100 tons in any consecutive 12-month period of VOCs).

Reporting:

The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any deviation from or exceedance of any of the terms imposed by this permit condition, or any malfunction which causes a deviation from or exceedance of this permit condition.

PERMIT CONDITION PW003

10 CSR 10-6.220

Restriction of Emission of Visible Air Contaminants

Emission Limitation:

1) No owner or other person shall cause or permit emissions to be discharged into the atmosphere from any existing[1] source any visible emissions with an opacity greater than 40%. [10 CSR 10-6.220(3)(A)]
2) No owner or other person shall cause or permit emissions to be discharged into the atmosphere from any new[2] source any visible emissions with an opacity greater than 20%. [10 CSR 10-6.220(3)(A)]
3) Exception:
   A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any 60 minutes air contaminants with an opacity up to 60%. [10 CSR 10-6.220(3)(B)]

Monitoring:

1) The permittee shall conduct opacity readings on the emission unit(s) 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(s) 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. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
2) The following monitoring schedule must be maintained:
   a) Monthly observations shall be conducted for a minimum of eight consecutive months after permit issuance. Should no violation of this regulation be observed during this period then-

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[1] *Existing source*-any equipment, machine, device, article, contrivance or installation installed or in construction in the outstate Missouri area on February 24, 1971 or in the Springfield metropolitan area on September 24, 1971.
Exception: If the source is altered, repaired, or rebuilt at a cost of fifty percent (50%) or more of its replacement cost exclusive of routine maintenance, it shall no longer be existing, but shall be considered new as defined in this regulation.

[2] *New source*: any equipment, machine, device, article, contrivance or installation installed in the outstate Missouri area after February 24, 1971 or in the Springfield metropolitan area after September 24, 1971.

b) Observations must be made semi-annually (i.e., once per reporting period). Observation shall be conducted during the January-June reporting period and during the July-December reporting period. If a violation is noted, monitoring reverts to monthly.

3) If the source reverts to monthly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

1) The permittee shall maintain records of all observation results (see Attachment C-1), noting:
   a) Whether any air emissions (except for water vapor) were visible from the emission units,
   b) All emission units from which visible emissions occurred, and
   c) Whether the visible emissions were normal for the process.
2) The permittee shall maintain records of any equipment malfunctions (see Attachment D).
3) The permittee shall maintain records of any Method 9 test performed in accordance with this permit condition. (see Attachment C-2)
4) Attachments C-1, C-2, and D contain logs including these recordkeeping requirements. These logs, or an equivalent created by the permittee, must be used to certify compliance with this requirement.

Reporting:

1) The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined using the Method 9 test that the emission unit(s) exceeded the opacity limit.
2) Reports of any deviations from monitoring, recordkeeping and reporting requirements of this permit condition shall be submitted semi-annually, in the semi-annual monitoring report and annual compliance certification, as required by Section V of this permit.

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

Permit Condition (EP-88) - 001
10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 122011-003, Issued December 05, 2011

Operational Limitation:
The permittee shall keep the lubricant solvents and cleaning solutions in sealed containers whenever the materials are not in use. The permittee shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and clean solution containers used with this equipment.

Reporting:
Reports of any deviations from the operational limitation requirements of this permit condition shall be submitted annually, in the annual monitoring report and annual compliance certification, as required by Section V of this permit.

IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The following is only an excerpt from the regulation or code, and is provided for summary purposes only

10 CSR 10-6.045 Open Burning Requirements

1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
2) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.
3) Reporting and Recordkeeping. New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart CCCC establishes certain requirements for incinerators that burn wood trade waste. These requirements are established in 40 CFR 60.2245-60.2260. The provisions of 40 CFR part 60 Subpart CCCC promulgated as of September 22, 2005 shall apply and are hereby incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401. To comply with NSPS 40 CFR 60.2245-60.2260, sources must conduct an annual Method 9 test. A copy of the annual Method 9 test results shall be submitted to the director.
4) Test Methods. The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR part 60, Appendix A–Test Methods, Method 9–Visual Determination of the Opacity of Emissions from Stationary Sources. The provisions of 40 CFR part 60, Appendix A, Method 9 promulgated as of December 23, 1971 is incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information: [10 CSR 10-6.050(3)(A)]
   a) Name and location of installation; [10 CSR 10-6.050(3)(A)1]
   b) Name and telephone number of person responsible for the installation; [10 CSR 10-6.050(3)(A)2]
   c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered. [10 CSR 10-6.050(3)(A)3]
   d) Identity of the equipment causing the excess emissions; [10 CSR 10-6.050(3)(A)4]
   e) Time and duration of the period of excess emissions; [10 CSR 10-6.050(3)(A)5]
   f) Cause of the excess emissions; [10 CSR 10-6.050(3)(A)6]
   g) Air pollutants involved; [10 CSR 10-6.050(3)(A)7]
   h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude; [10 CSR 10-6.050(3)(A)8]

i) Measures taken to mitigate the extent and duration of the excess emissions; and [10 CSR 10-6.050(3)(A)9]
j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations. [10 CSR 10-6.050(3)(A)10]

2) The permittee shall submit the paragraph 1 information list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days. [10 CSR 10-6.050(3)(B)]
3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo. [10 CSR 10-6.050(3)(C)]
4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule. [10 CSR 10-6.050(3)(D)]
5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported. [10 CSR 10-6.050(3)(E)]

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(5)(B)1.A(III)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)3.B]

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

1) The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.

2) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

1) The permittee shall submit full emissions report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the director.
2) The permittee may be required by the director to file additional reports.
3) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
4) The permittee shall submit a full EIQ for the 2011, 2014, 2017, and 2020 reporting years. In the interim years the installation may submit a Reduced Reporting Form; however, if the installation's emissions increase or decrease by more than five tons when compared to their last submitted full EIQ, the installation shall submit a full EIQ rather than a Reduced Reporting Form.
5) In addition to the EIQ submittal schedule outlined above, any permit issued under 10 CSR 10-6.060 section (5) or (6) triggers a requirement that a full EIQ be submitted in the first full calendar year after the permitted equipment initially operates.
6) The fees shall be payable to the Department of Natural Resources and shall be accompanied by the emissions report.
7) The permittee shall complete required reports on state supplied EIQ forms or electronically via MoEIS. Alternate methods of reporting the emissions can be submitted for approval by the director. The reports shall be submitted to the director by April 1 after the end of each reporting year. If the full emissions report is filed electronically via MoEIS, this due date is extended to May 1.
8) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
9) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
   a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
   b) Paving or frequent cleaning of roads, driveways and parking lots;
   c) Application of dust-free surfaces;
   d) Application of water; and
   e) Planting and maintenance of vegetative ground cover.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.
2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-6.165 Restriction of Emission of Odors

This requirement is not federally enforceable.

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos

abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the department to monitor training provided to employees. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the department. Each person who offers training for asbestos abatement occupations must first obtain accreditation from the department. Certain business entities that meet the requirements for state-approved exemption status must allow the department to monitor training classes provided to employees who perform asbestos abatement.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
   a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
   b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
   c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
   d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
   a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
   b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
   c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
   d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
   e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
   f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR Part 82, Subpart A, Production and Consumption Controls.
4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air conditioners. The term "motor vehicle" as

used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR Part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR Part 82*

10 CSR 10-6.280 Compliance Monitoring Usage

1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
   c) Any other monitoring methods approved by the director.
2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
   c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
   a) Applicable monitoring or testing methods, cited in:
      i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
      ii) 10 CSR 10-6.040, "Reference Methods";
      iii) 10 CSR 10-6.070, "New Source Performance Standards";
      iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
   b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

10 CSR 10-6.065, §(5)(E)2 and §(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.C General Recordkeeping and Reporting Requirements

1) Recordkeeping
   a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
   b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
2) Reporting
   a) All reports shall be submitted to the Air Pollution Control Program Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
   b) The permittee shall submit a report of all required monitoring by:
      i) April 1st for monitoring which covers the January through December time period.
      ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
   c) Each report shall identify any deviations from emission limitations, monitoring, recordkeeping, reporting, or any other requirements of the permit.
   d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
      i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7 of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.

ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's annual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.

e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.
f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065 §(5)(C)1 and §(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

1) June 21, 1999;
2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(5)(C)1.A General Requirements

1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted under this rule.
6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit.

10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios

None

10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) Compliance Requirements

1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
   a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
   b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
   d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
3) All progress reports required under an applicable schedule of compliance shall be submitted semi-annually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
   a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
   b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances must be included in the compliance certifications. The compliance certification shall include the following:
   a) The identification of each term or condition of the permit that is the basis of the certification;
   b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
   c) Whether compliance was continuous or intermittent;
   d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
   e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)7 Emergency Provisions

1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions

limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:

a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
b) That the installation was being operated properly,
c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.

2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(5)(C)5 Off-Permit Changes

1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Off-permit changes shall be subject to the following requirements and restrictions:
   a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is a Title I modification; Please Note: Changes at the installation which affect the emission limitation(s) classifying the installation as an intermediate source (add additional equipment to the recordkeeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.
   b) The permittee must provide written notice of the change to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219, no later than the next annual emissions report. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change; and
   c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Scott Miller, North American Region Operations Director. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause

This permit may be reopened for cause if:

1) The Missouri Department of Natural Resources (MDNR) or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
2) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
   a) The permit has a remaining term of less than three years;
   b) The effective date of the requirement is later than the date on which the permit is due to expire; or
   c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
3) The Missouri Department of Natural Resources or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065 §(5)(E)1.A and §(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

Attachment A
Plant Wide VOC Emissions

This sheet covers the month of ____________________ in the year ________________.
Copy this sheet as needed.

Column 1	Column 2 (a)	Column 3 (b)	Column 4	Column 5
Material Used (Name, Type)	**Amount of Material Used (Include Units)**	**Density (lb/gal)**	**VOC Content (Weight %)**	**VOC Emissions (Tons)**
(c) Total VOC Emissions Calculated for this Month in Tons:				
(d) 12-Month VOC Emissions Total from Previous Month's Attachment A, in Tons:				
(e) Monthly VOC Emissions Total (b) from Previous Year's Attachment A, in Tons:				
(f) Current 12-month Total of VOC Emissions in Tons: [(b) + (c) - (d)]				

Instructions: Choose appropriate VOC calculation method for units reported:

(a) 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].

(b) The highest density value reported in the MSDS for each material shall be used.

(c) Summation of [Column 5] in Tons;

(d) 12-Month VOC emissions total (e) from last month's Attachment A, in Tons;

(e) Monthly VOC emissions total (b) from previous year's Attachment A, in Tons;

(f) Calculate the new 12-month VOC emissions total. A **12-Month VOC emissions total (e) of less than 100.0 tons indicates compliance**

Attachment B-1
Monthly Combined HAPs Tracking Record

This sheet covers the month of _______________ in the year _______________.

Copy this sheet as needed

Column 1	Column 2 (a)	Column 3 (b)	Column 4	Column 5
Material Used, (Name, HAP CAS #)	**Amount of Material Used (Include Units)**	**Density (lb/gal)**	**HAP Content (Weight %)**	**HAP Emissions (Tons)**
(c) Total HAP Emissions Calculated for this Month in Tons:				
(d) 12-Month HAP Emissions Total from Previous Month's Attachment B-1, in Tons:				
(e) Monthly HAP Emissions Total (b) from Previous Year's Attachment B-1, in Tons:				
(f) Current 12-month Total of HAP Emissions in Tons: [(b) + (c) - (d)]				

INSTRUCTIONS: Choose appropriate HAP calculation method for units reported:

(a) 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];

(b) The highest density value reported in the MSDS for each material shall be used.

(c) Summation of [Column 5] in Tons;

(d) 12-Month HAP emissions (e) from last month's Attachment B-1 in Tons;

(e) Monthly HAP emissions total (b) from the previous year's Attachment B-1 in Tons;

(f) Calculate the new 12-month combined HAPs emissions total. **A 12-Month HAP emissions total (e) of less than 25.0 tons indicates compliance.**

Attachment B-2
Monthly Individual HAPs Tracking Record

HAP Name: _____ CAS No.:

This sheet covers the month of _____ in the year _____.

Copy this sheet as needed

Column 1 (a)	Column 2 (b)
List materials from Attachment B-1 which emit this specific HAP (Name, Type)	**HAP emissions from Attachment B-1 [Column 5] (in Tons)**
(c) Total HAP Emissions Calculated for this Month, in Tons:	
(d) 12-Month HAP Emissions Total (f) from Previous Month's Attachment, in Tons:	
(e) Monthly HAP Emissions Total (c) from Previous Year's Attachment, in Tons:	
(f) Current 12-month Total of HAP Emissions in Tons: [(c) + (d) - (e)]:	

INSTRUCTIONS:

(a) Individually list each material which emits this specific HAP;
(b) Record the amount of HAP emissions already calculated for Attachment B-1 in [Column 5] in Tons;
(c) Summation of [Column 5] in Tons;
(d) Record the previous 12-Month individual HAP emission total (f) from last month's Attachment B-2, in Tons;
(e) Record the monthly HAP emission total (c) from previous year's Attachment B-2, in Tons:
(f) Calculate the new 12-month individual HAP emissions total. A 12-Month individual HAP emissions total of less than 10.0 tons indicates compliance.

Attachment C-1
10 CSR 10-6.220 Compliance Demonstration
Opacity Emission Observation

This attachment or an equivalent may be used to help meet the recordkeeping requirements of Permit Condition PW003

Method 22 Opacity Emission Observations			
Date	Method 22 Test Observer	Visible Emissions (yes/no)	If Visible emissions, was a method 9 done? (yes/no)

Attachment C-2
10 CSR 10-6.220 Compliance Demonstration
Method 9 Visual Determination of Opacity

This attachment or an equivalent may be used to help meet the recordkeeping requirements of Permit Condition PW003.

Method 9 Opacity Emissions Observations	
Company	Observer
Location	Observer Certification Date
Date	Emission Unit
Time	Control Device

Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							

SUMMARY OF AVERAGE OPACITY				
Set Number	Time		Opacity	
	Start	End	Sum	Average

Readings ranged from _____ to _____ % opacity.
Was the emission unit in compliance at the time of evaluation? _____ _____ _____
YES NO Signature of Observer

Attachment D
Inspection/Maintenance/Repair/Malfunction Log

Emission Unit # or CVM # _____

Date/Time	Inspection/ Maintenance Activities	Malfunction Activities					
		Malfunction	Impact	Duration	Cause	Action	Initials

STATEMENT OF BASIS

Voluntary Limitations
In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a part 70 operating permit.

Permit Reference Documents
These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

1) Intermediate Operating Permit Application, received June 11, 2012;
2) 2011 Emissions Inventory Questionnaire, received April 27, 2012; and
3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits
In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

None

Other Air Regulations Determined Not to Apply to the Operating Permit
The Air Pollution Control Program (APCP) has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits*
This rule is not applicable because the installation is in an ozone attainment area.

10 CSR 10-6.260, *Restriction of emission of Sulfur Compounds*
All combustion equipment at the installation uses pipeline grade natural gas. Combustion equipment that uses exclusively pipeline grade natural gas as defined in 40 CFR 72.2 or liquefied petroleum gas as defined by American Society for Testing and Materials (ASTM), or any combination of these fuels is exempt from the requirements of this rule.

10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*
This regulation defines process weight to "exclude liquids and gases used solely as fuels and excluding air introduced for purposes of combustion" under 10 CSR 10-6.400(2)(A). Therefore, no

emission sources at this installation were considered to be applicable to this regulation and it was not included in the operating permit.

10 CSR 10-6.405, *Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*

The installation operates various building heating furnaces with an aggregate heat input of 14.42 MMBtu/hr which are subject to the requirements of this rule. However, the APCP does not consider these sources to be capable of exceeding the particulate matter (PM) emission limitation (0.53 pounds of particulate matter per million BTU's of heat input) of this rule.

Therefore, the heating furnaces are always expected to be in compliance with the PM limitation, this rule was not included in the applicable requirements for this operating permit.

Construction Permit History

Permit Number	Description
0177-005	Soldering Dip Pots
0782-003 – 007	Hard Tube Mill
0384-004	Hard Tube Mill
0685-001	Production Line Modification
0986-010	Hard Tube Mill & Beta Welder
1086-007	Hard Tube Mill
1286-005	Beta-Weld Operation
0387-002	Beta-Weld Operation
0188-001	Welded Tube Mill
0388-005	Beta-Weld Machine
1191-015	Automatic Solder Pour Line Installation
0894-026	Nocolok Brazing Oven
1296-015	Aluminum Paint Booth
0997-030	Addition of One Aluminum Area Fin Machine and Two Aluminum Presses
0298-018	Spray Paint Booth
0398-003	One Aluminum Truck Radiator Fin Machine
0798-028	Beta-Weld Operation
1098-019	Oil Fogging Operating
0199-005	Two Seaming Stations and One Welding Station
0599-007	New Aluminum Fin Machine
1299-012	New Radiator Production Line
012000-018	Installation of a New Aluminum Fin Machine
082000-013	Installation of a Burn-Off Oven for Powder Paint Hooks
112003-004	Installation of a New Aluminum Fin Machine
082004-018	Installation of a New Aluminum Fin Machine
082005-009	Installation of New Fin Machine, Welding Operations, and Test Station.
072008-013	Installation of a New Radiator Core Builder with associated Fin Machine.
102009-009	Construct two new core assembly/fin machines.
122011-003	Installation of a robot welder and 3 fin machines

Construction Permit Revisions

The following revisions were made to construction permits for this installation:

Construction Permit #1195-015

The construction permit 1191-015, issued Nov 15, 1991, does not apply to the welding operations

(EP52 or EP55). All equipment associated with the construction permit 1191-015 has been removed from the facility and the permit no longer applies to Trenton.

Construction Permit #072008-013
Special Condition 1 is essentially identical to Special Condition 1 of Construction Permit 102009-009.

Construction Permit #102009-009
The Special Conditions are essentially identical to the Special Conditions of Construction Permit 122011-003.

Construction Permit #122011-003
Special Condition 2 sets a plantwide 250 ton/yr VOC limit for the installation with recordkeeping and reporting conditions contained within Special Conditions 3 and 4. This VOC limit is less restrictive than the 100 ton/yr VOC limit required for Intermediate Operating Permit status. The facility may demonstrate compliance with the 250 ton/yr limit by maintaining compliance with the 100 ton/yr VOC limit within Permit Condition PW002.

New Source Performance Standards (NSPS) Applicability
None

Maximum Achievable Control Technology (MACT) Applicability
None

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability
In the permit application and according to Air Pollution Control Program records, there was no indication that any Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements apply to this installation. The installation is subject to these regulations if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

Updated Potential to Emit for the Installation

Pollutant	Potential to Emit (tons/yr)
CO	8.06
CO_2e	6,522
HAP	≤ 25
NO_x	9.81
PM_{10}	4.70
PM_{25}	0.73
SO_x	0.06
VOC	≤ 100

Other Regulatory Determinations

10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*

One press under EP-88 is considered an existing operating unit and is regulated by the 40% opacity limitation. All other units under this rule are limited to a 20% opacity limitation.

10 CSR 10-6.400, *Restriction of Emission of Particulate Matter From Industrial Processes*

1) 10 CSR 10-6.400 was not included as an applicable regulation for the emission units listed below. These units are exempt because potential uncontrolled particulate matter emissions are less than 0.5 pounds per hour per 10 CSR 10-6.400(1)(B)12.

   Potential PM Emission Rate = MHDR(tons/hr) * Emission Factor(lb/ton)

Emission Unit	Maximum Hourly Design Rate (tons/hr)	PM Emission Factor (lb/ton)	Emission Factor Reference	Potential Uncontrolled PM Emission Rate (lb/hr)
EP52 - Maintenance Welding [1]	0.00001	See note 1		0.02
EP55 - Aluminum Welded Tube Mill	1.00	0.06	2006 EIQ	0.06

[1] Assuming all is emitted as particulate matter.

2) According to 10 CSR 10-6.400(1)(B)7., the following fugitive sources are not subject to this rule.
   - EP81 - Nocolok Furnace #2 Thermal De-oiler Oven;
   - EP84 - Nocolok Furnace #2 Gas Combustion;
   - EP86 - Powder Paint Cure Oven; and
   - EP87 - Paint Hook Burn Off Oven
   - EP88 - Metal Forming Operations

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons.

1) The specific pollutant regulated by that rule is not emitted by the installation.
2) The installation is not in the source category regulated by that rule.
3) The installation is not in the county or specific area that is regulated under the authority of that rule.
4) The installation does not contain the type of emission unit which is regulated by that rule.
5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the Air Pollution Control Program a schedule for achieving compliance for that regulation(s).

2012-06-034

MEMORANDUM

DATE: September 04, 2014

TO: 2012-06-034, Modine Manufacturing Company – Trenton (079-0004)

FROM: David Buttig, Operating Permit Unit

SUBJECT: Response to Public Comments

A draft of the Modine Manufacturing Company – Trenton Facility Intermediate Operating Permit was placed on public notice on May 23, 2014, by the Missouri Department of Natural Resources (MDNR). Comments were received on June 12, 2014 from Mark Smith, Air Permitting and Compliance Branch Chief of the Environmental Protection Agency Region 7. The five (5) comments are presented below as submitted, with the response to each comment by the Air Pollution Control Program (APCP) directly following.

EPA Comment #1:
Plant wide permit conditions PW001 and PW002 are included in the draft operating permit to establish voluntary limitations for hazardous air pollutants (HAPs) and volatile organic compounds (VOCs), respectively. The draft permit conditions indicate the underlying authority to allow for the establishment of these voluntary limitations are 10 CSR 10-6.065(2)(A), 10 CSR 10-6.065(2)(C), and 10 CSR 10-6.065(5)(A). A current search of the on-line version of the Division 10, Chapter 6 Missouri State Regulations for the term "voluntary" points to 10 CSR 10-6.065(5)(C)2. This citations says:
"*Federally-enforceable conditions.*

Any voluntary provisions issued under this section of the rule, designed to limit an installation's potential to emit, shall be designated federally- enforceable by the permitting authority. Any terms and conditions so designated are required to –

A. Be at least as stringent as any other applicable limitations and requirements contained in the implementation plan or enforceable under the implementation plan. The permitting authority may not waive or make less stringent any limitations or requirements contained in the implementation plan, or that are otherwise federally-enforceable (for example, standards established under sections 111 or 112 of the Act) in the operating permit;

B. Be permanent, quantifiable, and otherwise enforceable as a practical matter; and

C. Follow the public participation procedures of section (7) of this rule."

EPA believes this is the appropriate regulatory citation, for voluntary limitations, and recommends MDNR revise the statutory reference to the underlying requirement for permit conditions PW001 and PW002.

Missouri Air Pollution Control Program Response to EPA Comment #1:
The regulatory citation for permit conditions PW001 and PW002 have been changed to 10 CSR 10-6.065(5)(C)2. Voluntary Limitation(s).

EPA Comment #2:
Draft plant wide permit conditions PW001 and PW002 require Modine (permittee) to maintain accurate emissions of hazardous air pollutants (HAPs) and volatile organic compounds (VOCs), respectively, from "this installation." Draft permit conditions PW001 and PW002 go on to require the permittee to use example forms (Attachments A-1 and A-2) to accurately document compliance with the HAP emission limits; and an example form (Attachment B) to accurately demonstrate compliance with the VOC emission limitations. However, both PW001 and PW002, as drafted, fail to ensure the synthetic minor limits for HAPs and VOCs; which are intended to restrict HAPs and VOCs potential-to-emit (PTE) below the Part 70 operating permit levels; are enforceable as a practical matter.

40 CFR §70.2 defines the potential-to-emit (PTE), for purposes of determining whether the facility triggers major source requirements for a particular pollutant, to include consideration of "[a] physical or operational limitation on the capacity of the source to emit [the] pollutant including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed … ..if the limitation or the effect it would have on emissions is federally enforceable." In other words, if a permit applicant agrees to an enforceable limit that is sufficient to restrict PTE, the facilities PTE is calculated based on that limit.

In this draft permit, Modine appears to agree to accept source-wide HAP and VOC emission limits below the major source levels and thus avoid Part 70 operating permit requirements. To effectively limit Modine's HAP and VOC, the limits in PW001 and PW002 must apply at all times; to all actual operating conditions; to all actual emissions and all actual emissions must be considered in determining compliance with respective limits. Modine's draft permit states that HAP emissions shall be less than 10 tons of individual HAP in any consecutive 12-month period and 25 tons of any combination of HAPs in any consecutive 12-month period; and VOC emissions less than 100 tons in any consecutive 12-month period. However, permit conditions PW001 and PW002 do not specify how the installations HAPs and VOC shall be determined or measured for assessing compliance and it is unclear whether all actual HAP and VOC emissions must be considered; including emissions during periods of malfunction or upset and it is unclear what emission units define the "installation."

The draft permit, as placed on public notice, does contain example data recordkeeping forms. However, the forms do not specify how HAP and VOC emissions shall be calculated or what information such calculations would be based upon. In addition, draft permit does not appear to contain any monitoring or recordkeeping requirements that would allow for calculation or consideration of any HAP and VOC associated with the operation of any "insignificant" emission units. In the draft permit, the overall emission limits for HAPs and VOCs state the "permittee shall maintain an accurate record of emissions from the installation." The draft facility-wide limits will be ineffective at ensuring that the source remains below their voluntary limits if any emission unit at the facility that emits HAPs and/or VOCs is not covered by the permit limits and/or not subject to sufficient monitoring, recordkeeping, and reporting to ensure these limits are enforceable as a practical matter.

Therefore, EPA strongly recommends that MDNR modify plant wide permit conditions PW001 and PW002 in this draft operating permit to include:

- A description or listing of all specific emission units that are included in the "installation" which are capped at the HAP maximum emission limit of 10/25 tons per consecutive 12-month period and VOC of 100 tons per consecutive 12-month period;
- Detailed decription of the operating scenarios (normal, start-up, shutdown, malfunction, upset, etc.) to be included in the calculation of HAP and VOC emissions; and
- Complete description of the methodology utilized to calculate the HAP and VOC emissions and what information such calculations are based on.

Missouri Air Pollution Control Program Response to EPA Comment #2:
The text "However any pollutants emitted by these sources are still subject to Plant Wide Limitations outlined in Section II of this permit." was inserted on page 4 under EMISSION UNITS WITHOUT SPECIFIC LIMITATIONS for clarification.

Currently there are no emission factors or calculations for SSM scenarios since each SSM is different. Therefore, PTE calculations have been calculated only in normal scenarios utilizing emission factors provided in AP-42 and WebFIRE for the respective SCC codes.

The attachments for calculating and tracking HAPs and VOC emissions have been updated to include a methodology for calculations and sources to be used for the calculations.

EPA Comment #3:
The determination of the separation between an intermediate operating permit and a Part 70 operating permit is the potential-to-emit (PTE). PTE encompasses the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Thus, emissions from all emission units that are part of the sources physical and operational design at the time of permitting must be included in calculating PTE. This would include emission units with limitations; emission units without limitations; and insignificant emission units. EPA has previous explained that when a source accepts a source-wide PTE limit, all actual emissions of that pollutant from the source must be considered in determining compliance with the limit.

By accepting the limits in the draft operating permit, Modine says their installation currently has the potential to emit 10 tons of a single HAP in any consecutive 12-month period; 25 tons of combined HAPs in any consecutive 12-month period; and 100 tons of VOCs in any consecutive 12-month period. Therefore, any further emission unit additions and/or modifications which result in an increase of HAP or VOC emission, the synthetic minor limit will be exceeded which will require Modine to apply for a Part 70 operating permit.

In as much as the reported actual emissions of HAPs and VOCs are well below the voluntary emission limits in PW001 and PW002, Modine may wish to reconsider these synthetic limits. Therefore, EPA recommends that MDNR review all of the "consequences" of these voluntary limits with the permittee to confirm their intent to stay with the draft limits.

Missouri Air Pollution Control Program Response to EPA Comment #3:
It is standard practice of the APCP to consult with the facilities and to allow review of the draft permit before placing it on Public Notice. Modine Manufacturing offered and has accepted these voluntary limitations that are present in the draft permit. If Modine Manufacturing adds any additional emission units, (assuming no construction permit is required) a new potential to emit will be calculated and a

decision will be made to see if the facility can remain below those major source emission levels. Currently, Modine Manufacturing's reported emissions are well below the major source levels.

EPA Comment #4:
Plant wide permit condition PW003, in the draft operating permit, includes separate emission limitations for "existing sources" and "new sources." Included are footnotes that define the terms "existing source" and "new source." However, the draft operating permit fails to identify which emission units are "existing" and which are "new."

EPA recommends that MDNR identify existing emission units and new emission units in either the statement of basis or within the body of context of the permit condition.

Missouri Air Pollution Control Program Response to EPA Comment #4:
A description of the existing emission units under PW003 has been included in the Statement of Basis for clarification.

EPA Comment #5:
The open burning requirements included with the Section IV core permit requirements in the draft operating permit includes requirements for the Kansas City metropolitan area; Springfield-Greene county area; St. Joseph area; and St. Louis metropolitan area. The Modine Manufacturing Company being permitted is located in Grundy County and all of the specific requirements for the Kansas City metropolitan area; Springfield-Greene County area; St. Joseph area; and St. Louis metropolitan would appear to not be applicable requirements for a facility in Trenton (Grundy County), Missouri. EPA recommends that MDNR modify the open burning requirements accordingly.

Missouri Air Pollution Control Program Response to EPA Comment #5:
The requirements for the Kansas City metropolitan area; Springfield-Greene county area; St. Joseph area; and St. Louis metropolitan area have been removed from the Section IV core permit requirements for open burning.

8132
AIR 047 00075

KB Reviewed
6/23/15

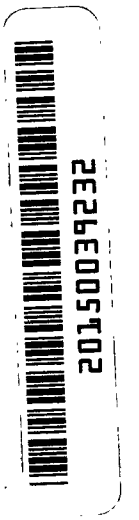
NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY COMPLIANCE SECTION
INSPECTION REPORT

FACILITY NAME	Orthman Manufacturing, Inc.	**FACILITY ID NUMBER**	8132
		Project Code	33-567-008464
MAILING ADDRESS	75765 Road 435 Lexington, Nebraska 68850-0017	**LOCATION**	Approximately 1m East on HWY 30 and 3m North on Road 435
INSPECTOR(S)	Heath Wilkinson, Program Specialist	**DATE/TIME**	May 28, 2015 @ 10:00am
FACILITY REPRESENTATIVE(S)	Mr. Jeff Armstrong, EHS Manager	**PHONE** **CELL** **OFFICE**	 (402) 984-3125 (308) 324-7505

APPLICABLE RULES	Title 129
EMISSION CONTROLS	Filters on paint booths, cyclone, and fuel usage
PERMITS	Class II Operating Permit issued, September 19, 2012, Class II Operating Permit Reopen for Cause issued, September 11, 2013.

Orthman Manufacturing, Inc. operates a farm machinery and equipment manufacturing facility near Lexington. The facility processes include metalworking, cleaning, welding, and painting. Raw materials, including raw steel, paint, solvent, welding wire, shot steel, bearing, tires, discs, fasteners, electronic component parts, bearing hubs, and tire rims, are trucked into the plant. These materials are then fabricated, welded, cleaned, painted, and assembled into complete sub-assemblies through three processes. In the first process, the raw material is fabricated by saws, presses, flame and plasma cutters, shotblasters, and other similar processes. Material from the fabrication process is transferred into storage for final assembly, to cleaning and painting, or to welding. In the second process, the fabricated metal parts are welded into sub-assemblies. The sub-assemblies are then cleaned and coated in the third process.

Orthman currently employs approximately 190 people and are operating 21 hours per day four days per week. Production hours typically increase to six days per week in fall and then decreases again in the spring back to four days per week. A detailed process description is provided in the fact sheet issued September 19, 2012 and September 11, 2013. The fact sheet and previous inspection reports are available in the facility files located at the Nebraska Department of Environmental Quality's (NDEQ) headquarters in Lincoln, NE or on the Departments Web Page.



I arrived at the facility unannounced at approximately 10:00am on June 28, 2015. I met with Mr. Jeff Armstrong, EHS Manager. I explained the reason for the inspection and that the inspection would consist of a records review and tour of the facility. Mr. Armstrong provided available documents and escorted me on the facility tour.

Observations

Certifications of compliance have not been submitted for reporting years 2013 or 2014.
As noted in the previous inspection it was discovered that the 2012 Operating Permit was issued with errors. Primarily, there was a duplication of general conditions and specific conditions A, B, and C were not included. These errors where corrected by reopening the permit for cause and the Class II Operating Permit Reopen for Cause was issued on September 11, 2013.

Attachments

A. Comments on the September 19, 2012 Class II Operating permit conditions
B. Comments on the September 11, 2013 Class II Operating permit conditions
C. Orthman Manufacturing Paint VOC Analysis Sheet
D. Orthman Manufacturing- VOC/HAP Monthly and Rolling Totals
E. 2014 HAP Content per Month in Tons
F. Individual HAP
G. MSDS for Product: 2K LT. Gray Urethane Prim
H. Environmental Data Sheet for Product: 2K LT. Gray Urethane Prim
I. Natural Gas Usage
J. Single Head Flame Cuter Hours
K. Whellabrator/Shot Blaster Cyclone O&M Data Sheet
L. Daily Air Flow Monitor Reading for Paint Booth

Based upon information obtained during the inspection on May 28, 2015, I summarized my observations for Mr. Armstrong. I explained that a copy of the inspection report would be prepared and transmitted to the facility.

Heath Wilkinson

Heath Wilkinson
Program Specialist

REPORT DATE: June 11, 2015
6-11-15 **Entered in IIS**

ATTACHMENT A

AIR QUALITY CLASS II OPERATING PERMIT

PERMIT NUMBER: OP08R2-005

Source Name: Orthman Manufacturing Inc - North Plant	**NDEQ Facility ID#:** 08132
Mailing Address: PO Box B Lexington, Nebraska 68850	**Source Location:** 75765 Road 435 NE ¼ Section 28, Township 10N, Range 21W Lexington, Dawson County, Nebraska

Project Description: This Operating Permit approves the operation of a farm machinery and equipment manufacturing facility with surface coating operations

Standard Industrial Classification (SIC) Code: 3523, Farm Machinery and Equipment

Pursuant to Title 129, Chapter 14, of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of the proposed operation of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This Operating Permit approves the operation of a farm machinery and equipment manufacturing facility. This Operating Permit approves the operation of this source as identified in the Air Quality Operating Permit Application 08R2-005 received November 21, 2007, and updated March 26, 2008, including any supporting information received prior to issuance of this permit. Additional details on the source, including estimated pollutant emissions, can be found in the accompanying Fact Sheet.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. Unless otherwise noted, the conditions of this permit are enforceable by the United States Environmental Protection Agency (USEPA) and the Nebraska Department of Environmental Quality (NDEQ). The permit holder, owner, and operator of the source shall assure compliance with all of the terms and conditions in this permit and the Attachments.

The undersigned issues this document on behalf of the Director in accordance with Title 129 – Nebraska Air Quality Regulations as amended April 1, 2012.

9/19/12	**{ORIGINAL SIGNED}**
Date	Shelley Schneider, Air Administrator Air Quality Division

TABLE OF CONTENTS

ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources
BACT	Best Available Control Technology
btu	British Thermal Unit
bu	Bushel
CAA	Clean Air Act
CE	Control Equipment
cf	Cubic feet
CEMS	Continuous Emissions Monitoring System
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CP	Construction Permit
Director	Director of the Nebraska Department of Environmental Quality
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EMIS	Emergency Management Information System
EQC	Environmental Quality Council
EP	Emission Point
EU	Emission Unit
FIP	Federal Implementation Plan
FR	Federal Register
ft	Feet
FTIR	Fourier Transform Infrared
GHGs	Greenhouse Gases
HAP	Hazardous Air Pollutant(s)
hp	Horsepower
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
LNB	Low NO_x Burner
MACT	Maximum Achievable Control Technology
Mgal	One Thousand Gallons
MMBtu	One Million British Thermal Units
MMgal	One Million Gallons
MMscf	One Million Standard Cubic Feet
MSDS	Material Safety Data Sheet
n/a	Not Applicable
NAAQS	National Ambient Air Quality Standards
NDEQ	Nebraska Department of Environmental Quality
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
N_2O	Nitrous Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
OP	Operating Permit
PAL	Plant-wide Applicability Limit
PEMS	Predictive Emissions Monitoring System
Pb	Lead (chemical abbreviation)
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
PM_{10}	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million by volume
ppmvd	Parts per Million by volume, dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
TDS	Total Dissolved Solids
Title 129	Title 129, Nebraska Air Quality Regulations
tpy	Tons per year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate Matter
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VHAP	Volatile Hazardous Air Pollutant
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
yr	Year

I. GENERAL CONDITIONS

Comments: These general conditions are statements of applicability.

(A) Administrative amendment of this permit for a change in ownership or operational control of this source is allowed provided the NDEQ determines that no other change in the permit is necessary and a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the NDEQ (Title 129, Chapter 15, Section 001.01D).

(B) The permittee shall allow the NDEQ, USEPA or an authorized representative, upon presentation of credentials to (Title 129, Chapter 8, Sections 012.02 and 015):

(1) Enter upon the permittee's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted, or where records must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(3) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(4) Sample or monitor, at reasonable times, substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

(C) Regulatory authority:

(1) Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those not currently delegated to Nebraska or not yet included in Title 129 - Nebraska Air Quality Regulations, and

(2) Title 129 - Nebraska Air Quality Regulations that apply to the source as amended April 1, 2012.

(D) This permit is issued for a fixed term of five (5) years. A renewal application shall be submitted to the NDEQ a minimum of six (6) months and a maximum of eighteen (18) months before permit expiration. Provided their application is submitted within the above timeframe, the source may continue to operate without a permit from the date the application is determined to be complete until final action on the application is taken by the NDEQ (Title 129, Chapter 8, Section 003, and Chapter 7, Sections 002.06 and 003.04).

(E) The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application (Title 129, Chapter 8, Section 007.01).

(F) It shall not be a defense for a permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit (Title 129, Chapter 8, Sections 007.02 and 015).

(G) This permit may be modified; revoked, reopened, and reissued; or terminated for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not supersede any permit condition (Title 129, Chapter 8, Sections 007.03 and 015).

(H) Conditions under which this permit will be reopened, revoked, and reissued, or terminated during its term for cause, include but are not limited to (Title 129, Chapter 8, Sections 010 and 015; and Chapter 15, Section 006):

(1) Additional applicable requirements under the Nebraska Environmental Protection Act or the Federal Clean Air Act, which become applicable to this source with a remaining permit term of three (3) or more years. No such reopening will occur if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended;

(2) Additional requirements, including excess emissions requirements, that become applicable to an affected source under the acid rain program under Chapter 26;

(3) A determination by the Director, or the Administrator of USEPA that:

(a) The permit must be revoked and reissued to ensure compliance with the applicable requirements;

(b) The permit contains a material mistake or that inaccurate statements were made in the emissions standards or other terms or conditions of the permit;

(c) An applicable requirement or applicable requirement under the Federal Clean Air Act applies which was not identified by the permittee in its application;

(I) This permit may be revoked during its term for cause, including but not limited to (Title 129, Chapter 8, Sections 010 and 015; and Chapter 15, Section 006.02):

(1) The existence at the source of unresolved noncompliance with applicable requirements or a term or condition of the permit, and refusal of the permittee to agree to an enforceable schedule of compliance to resolve the noncompliance;

(2) The submittal by the permittee of false, incomplete, or misleading information to the NDEQ or USEPA;

(3) A determination by the Director that the permitted source or activity endangers human health or the environment and that the danger cannot be removed by a revision of the permit; or

(4) The failure of the permittee to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of

the USEPA.

(J) The permit does not convey any property rights of any sort, or any exclusive privilege (Title 129, Chapter 8, Sections 007.04 and 015).

(K) The permittee shall furnish to the NDEQ, within the time specified by the NDEQ, any information requested by the NDEQ in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the NDEQ copies of records required to be kept in accordance with the permit or, for information claimed to be confidential, the permittee may furnish such records along with a claim of confidentiality pursuant to Title 115 - Rules of Practice and Procedure (Title 129, Chapter 8, Sections 007.05 and 015).

(L) The provisions of this permit supersede the provisions of any previously issued operating or construction permit. The applicable requirements of previously issued construction permits are now conditions of this permit (Title 129, Chapter 8, Sections 002, 007.06, and 015).

(M) In the event of a challenge to any portions of this permit, the unchallenged permit requirements shall remain valid (Title 129, Chapter 8, Section 006).

(N) The following methods may be used to determine compliance with the terms and conditions in this permit (Title 129, Chapter 34, Section 008):

(1) Any compliance test method specified in the State Implementation Plan;

(2) Any test or monitoring method approved for the source in a permit issued pursuant to Title 129, Chapter 8, 17, 19, or 26;

(3) Any test or monitoring method provided for in Title 129; or

(4) Any other test, monitoring, or information-gathering method that produces information comparable to that produced by any method described in (N)(1) through (3).

(O) Open fires are prohibited except as allowed by Title 129, Chapter 30.

(P) Particulate Matter – General Requirements (Title 129, Chapter 32).

(1) The permittee shall not cause or permit the handling, transporting or storage of any material in a manner which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.

(2) The permittee shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but are not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.

(Q) Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations (Title 129, Chapter 37).

(R) If and when the Director declares an air pollution episode as defined in Title 129, Chapter 38, Section 003.01B, 003.01C, or 003.01D, the permittee shall immediately take all required actions listed in Title 129, Appendix I, Paragraph 1.1, 1.2, and 1.3, respectively, until the Director declares the air pollution episode terminated (Title 129, Chapter 38, Section 003).

I. GENERAL CONDITIONS (This was an errant duplication of the general conditions and should have been the beginning of the Specific Conditions. This mistake was addressed with a re-open for cause permit being issued on September 11, 2013. See Attachment B)

(A) Administrative amendment of this permit for a change in ownership or operational control of this source is allowed provided the NDEQ determines that no other change in the permit is necessary and a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the NDEQ (Title 129, Chapter 15, Section 001.01D).

(B) The permittee shall allow the NDEQ, USEPA or an authorized representative, upon presentation of credentials to (Title 129, Chapter 8, Sections 012.02 and 015):

(1) Enter upon the permittee's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted, or where records must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(3) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(5) Sample or monitor, at reasonable times, substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

(C) Regulatory authority:

(1) Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those not currently delegated to Nebraska or not yet included in Title 129 - Nebraska Air Quality Regulations, and

(2) Title 129 - Nebraska Air Quality Regulations that apply to the source as amended April 1, 2012.

(D) This permit is issued for a fixed term of five (5) years. A renewal application shall be submitted to the NDEQ a minimum of six (6) months and a maximum of eighteen (18) months before permit expiration. Provided their application is submitted within the above timeframe, the source may continue to operate without a permit from the date the application is determined to be complete until final action on the application is taken by the NDEQ (Title 129, Chapter 8, Section 003, and Chapter 7, Sections 002.06 and 003.04).

(E) The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application (Title 129, Chapter 8, Section 007.01).

(F) It shall not be a defense for a permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit (Title 129, Chapter 8, Sections 007.02 and 015).

(G) This permit may be modified; revoked, reopened, and reissued; or terminated for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not supersede any permit condition (Title 129, Chapter 8, Sections 007.03 and 015).

(H) Conditions under which this permit will be reopened, revoked, and reissued, or terminated during its term for cause, include but are not limited to (Title 129, Chapter 8, Sections 010 and 015; and Chapter 15, Section 006):

(1) Additional applicable requirements under the Nebraska Environmental Protection Act or the Federal Clean Air Act, which become applicable to this source with a remaining permit term of three (3) or more years. No such reopening will occur if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended;

(2) Additional requirements, including excess emissions requirements, that become applicable to an affected source under the acid rain program under Chapter 26;

(3) A determination by the Director, or the Administrator of USEPA that:

(a) The permit must be revoked and reissued to ensure compliance with the applicable requirements;

(b) The permit contains a material mistake or that inaccurate statements were made in the emissions standards or other terms or conditions of the permit;

(c) An applicable requirement or applicable requirement under the Federal Clean Air Act applies which was not identified by the permittee in its application;

(I) This permit may be revoked during its term for cause, including but not limited to (Title 129, Chapter 8, Sections 010 and 015; and Chapter 15, Section 006.02):

(1) The existence at the source of unresolved noncompliance with applicable requirements or a term or condition of the permit, and refusal of the permittee to agree to an enforceable schedule of compliance to resolve the noncompliance;

(2) The submittal by the permittee of false, incomplete, or misleading information to the NDEQ or USEPA;

(3) A determination by the Director that the permitted source or activity endangers human health or the environment and that the danger cannot be removed by a revision of the permit; or

(4) The failure of the permittee to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of the USEPA.

(J) The permit does not convey any property rights of any sort, or any exclusive privilege (Title 129, Chapter 8, Sections 007.04 and 015).

(K) The permittee shall furnish to the NDEQ, within the time specified by the NDEQ, any information requested by the NDEQ in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the NDEQ copies of records required to be kept in accordance with the permit or, for information claimed to be confidential, the permittee may furnish such records along with a claim of confidentiality pursuant to Title 115 - Rules of Practice and Procedure (Title 129, Chapter 8, Sections 007.05 and 015).

(L) The provisions of this permit supersede the provisions of any previously issued operating or construction permit. The applicable requirements of previously issued construction permits are now conditions of this permit (Title 129, Chapter 8, Sections 002, 007.06, and 015).

(M) In the event of a challenge to any portions of this permit, the unchallenged permit requirements shall remain valid (Title 129, Chapter 8, Section 006).

(N) The following methods may be used to determine compliance with the terms and conditions in this permit (Title 129, Chapter 34, Section 008):

(1) Any compliance test method specified in the State Implementation Plan;

(2) Any test or monitoring method approved for the source in a permit issued pursuant to Title 129, Chapter 8, 17, 19, or 26;

(3) Any test or monitoring method provided for in Title 129; or

(4) Any other test, monitoring, or information-gathering method that produces information comparable to that produced by any method described in (N)(1) through (3).

(O) Open fires are prohibited except as allowed by Title 129, Chapter 30.

(P) Particulate Matter – General Requirements (Title 129, Chapter 32).

(1) The permittee shall not cause or permit the handling, transporting or storage of any material in a manner which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.

(3) The permittee shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but are not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.

(Q) Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations (Title 129, Chapter 37).

(R) If and when the Director declares an air pollution episode as defined in Title 129, Chapter 38, Section 003.01B, 003.01C, or 003.01D, the permittee shall immediately take all required actions listed in Title 129, Appendix I, Paragraph 1.1, 1.2, and 1.3, respectively, until the Director declares the air pollution episode terminated (Title 129, Chapter 38, Section 003).

DUPLICATION OF ERRANT PERMIT ENDS HERE-SEE REOPEN FOR CAUSE PERMIT ISSUED ON SEPTEMBER 11, 2013 INCLUDES CONDTIONS A, B, and C. See Attachment B

(D) Testing:

(1) Except as provided in Condition II.(D)(1)(d) below, the owner or operator of the source shall conduct a performance test, using the procedures in Condition II.(D)(2), when the criteria in Conditions II.(D)(1)(a), (b), and (c) are met. Such tests shall be completed within 60 days of reaching maximum capacity but not later than 180 days of when Condition II.(D)(1)(c) is met (Title 129, Chapter 8, Sections 012.01 and 015.03; and Chapter 34, Section 001)

(a) A valid performance test has been conducted on the unit;

(b) The emissions unit has a numerical limitation; and,

(c) The source makes changes that impact the data obtained from the most recent valid performance test. Actions that would impact the data include, but are not limited to, increasing the capacity of an emissions unit, or changing the operational parameters of control equipment that potentially makes the control equipment less efficient.

(d) The above provisions do not apply when compliance with the limitation is demonstrated through the use of a CEMS or PEMS.

(2) Performance tests, when required under condition (D)(1) or by the NDEQ, shall be completed as follows:

(a) The owner or operator of a source shall provide the NDEQ at least thirty (30) days written notice prior to testing to afford the NDEQ an opportunity to have an observer present (Title 129, Chapter 34, Section 003).

(b) The owner or operator shall provide the NDEQ with an emissions testing protocol at least thirty (30) days prior to testing.

(c) Testing shall be conducted according to the methodologies found in Title 129, Chapter 34, Section 002, or other NDEQ approved methodologies (Title 129, Chapter 34, Section 002).

(d) Performance tests shall be conducted while operating at full capacity, unless otherwise specified by the NDEQ (Title 129, Chapter 8, Sections 004.01B,012.01, and 015.03).

(e) Performance tests shall be conducted for a minimum of three (3) one-hour runs unless another run-time is specified by the applicable Subpart or as deemed appropriate by the NDEQ (Title

129, Chapter 8, Sections 004.01B,012.01B, and 015.03).

(f) The owner or operator shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit (Title 129, Chapter 8, Sections 004.01B,012.01, and 015.03).

(g) A written copy of the test results, signed by the person conducting the test, shall be provided to the NDEQ within forty-five (45) days of completion of the test and will, at a minimum, contain the following items (Title 129, Chapter 8, Sections 004.01B,012.01 and 015.03; Chapter 34, Section 002.07):

(i) A description of:

1. The operating parameters for the emissions unit during testing. Examples include, but are not limited to, production rates, process throughputs, firing rates of combustion equipment, or fuel usage;

2. The operating parameters for the control equipment during testing. Examples include, but are not limited to, baghouse fan speeds, scrubber liquid flow rates, or pressure drop across the control device; and,

3. The ambient environmental conditions during testing.

(ii) Copies of all data sheets from the test run(s).

(iii) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.

(i) A final conclusion section describing the outcome of the testing.

Comments: Testing has not been required at this time.

(E) All permitted emission units, control equipment, and monitoring equipment shall be properly installed, operated and maintained (Title 129, Chapter 8, Section 004.01C and 015; Chapter 11, Section 001; Chapter 34, Section 006; and Chapter 35 Sections 006.02 and 006.05).

Comments: Emission units and control equipment appeared to meet this requirement.

(F) Requirements Becoming Effective During the Term of this Permit: The source will meet, in a timely manner, applicable requirements that become effective during the permit term, unless a more detailed schedule is expressly required by the applicable requirement. New Federal applicable requirements are only enforceable by the USEPA until such time as they are adopted into Title 129, (Title 129, Chapter 7, Section 006.02H, and Chapter 8, Sections 012.03 and 015.

(G) Source-Wide Limitations:

(1) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required
All	Any Individual HAP	< 10.0 tons[1]	Per any twelve (12) consecutive calendar month period	Construction Permit CP09-047, Condition II.(F)(1)	No
All	Total Combined HAP	< 25.0 tons[1]	Per any twelve (12) consecutive calendar month period	Construction Permit CP09-047, Condition II.(F)(2)	No

[1] Compliance with Condition II.(G)(2)(a) satisfies the testing/monitoring requirements for HAPS.

(2) Operational and Monitoring Requirements:

(a) Compliance with the HAP emissions limitations above shall be demonstrated by performing emission calculations every month and every period of twelve (12) consecutive months using the calculation methodology in Condition IV. If testing is required, the emission factors and pound per hour (lb/hr) emission rates presented in Condition IV. shall be replaced with data obtained from the most current, emissions test conducted in accordance with Specific Condition II.(D) [Construction Permit CP09-047, Condition II.(F)].

Comments: These calculations were being kept up to date. Data sheets Attachments C , D, E, and Attachment F are used to show compliance with this condition.

(b) To demonstrate compliance with Condition II.(D)(2)(d), the permittee shall monitor the daily production/throughput rate for emission units that have had a performance test (Title 129, Chapter 34, Section 006).

Comments: No emission units have been performance tested.

(3) Recordkeeping and Reporting Requirements:

(a) To demonstrate compliance with Condition II.(G)(2)(b) above, the owner or operator of the source shall keep records of the daily production/throughput rate for all units that have had a performance test. Records shall include the daily production/throughput rate and the production/throughput rate on a 30-day rolling average basis (Title 129, Chapter 34, Section 006, and Chapter 8, Section 015).

Comments: No emission units have been performance tested.

(b) To demonstrate compliance with Condition II.(D)(2)(d) for emission units that have had a performance test, the permittee shall notify the NDEQ within fifteen (15) days of (Title 129, Chapter 34, Section 006):

(i) When there is a ten (10) percent increase in daily production/throughput rate over the rate recorded during the most recent valid performance test; or,

(ii) Each cumulative five (5) percent increase in daily production/throughput rate, based on a 30-day rolling average, over the rate recorded during the most recent valid performance test.

(iii) Exemption: The reporting requirements of this condition do not apply to emission units that have been tested and use a CEMS, PEMS, or COMS to demonstrate compliance.

Comments: No emission units have been performance tested.

(c) The following definitions apply for purposes of Conditions II.(G)(2)(b), II.(G)(3)(a), and II.(G)(3)(b) above:

(i) "rate" shall mean the production or throughput of an emissions unit in the same units of production or throughput as the "tested rate" as defined below; and,

(ii) "tested rate" shall mean the production or throughput rate of an emissions unit as recorded in the most recent valid performance test and reported to the NDEQ in the source's written copy of the test results, or test report, documenting the maximum capacity of the unit(s). The tested rate shall be extrapolated to daily. Examples include, but are not limited to, tons per hour to tons per day or gallons per hour to gallons per day. If the source does not know the tested rate reported, they can contact the NDEQ to obtain the information.

(d) The MSDS for all HAP-containing materials used during the preceding period of (12) consecutive calendar months shall be kept on record. The permittee shall keep appropriate records to support the emission calculations including, but are not limited to, actual material throughput rates [Construction Permit CP09-047, Condition II.(F)].

Comments: Attachment C and Attachment D are used to track usage. MSDS sheets and Environmental Data Sheets were available for review see Attachment G and Attachment H.

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS

(A) Specific Conditions for Natural Gas Combustion Units (EP 8, EP 9, EP 14, EP 25 Heaters A1-A4, B1-B8, C1-C5, D1-D10, E1-2, F1-2, G1-G9, H1-H5, and I)

(1) Permitted Emission Points:

The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment ID# and Description	Emission Unit Description
EP 8	None	0.800 MMBtu/hr Clean Tank Heater installed 1973
EP 9	None	1.5 MMBtu/hr Rinse Tank Heater installed 1992
EP 14	None	2.0 MMBtu/hr Paint Room Curing Oven installed 1995
EP-25	None	0.395 MMBtu/hr Water Evaporator installed 2012
Heaters A1 through A4	None	Four 0.03 MMBtu/hr Re-Verber Ray Heaters installed 1982
Heaters B1 through B8	None	Eight 0.05 MMBtu/hr TEC Heaters installed 1976
Heaters C1 through C5	None	Five 0.06 MMBtu/hr Re-Verber Ray Heaters installed 1976
Heaters D1 through D10	None	Ten 0.09 MMBtu/hr Re-Verber Ray Heaters installed1976
Heaters E1 and E2	None	Two 0.1 MMBtu/hr TEC Heaters installed 1972
Heaters F1 and F2	None	Two 0.1 MMBtu/hr Re-Verber Ray Heaters installed 1992
Heaters G1 through G9	None	Nine 0.15 MMBtu/hr Omega II Heaters installed 1995
Heaters H1 through H5	None	Five 0.175 MMBtu/hr Omega II Heaters installed 1995
Heater I	None	0.75 MMBtu/hr Space Ray Heater installed 1994

(2) Applicable NSPS and NESHAP Requirements:

No NSPS or NESHAP requirements are applicable to the emission points identified in Condition III.(A)(1).

(3) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required
EP 8	PM	0.48 lbs/hr[1]	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
	SO_x	2.0 lbs/hr[1]	2-Hour	Title 129, Chapter 24, Section 001	No

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required
EP 9	PM	0.90 lbs/hr[1]	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
EP 14	PM	1.2 lbs/hr[1]	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
EP 25	PM	0.24 lbs/hr[1]	1-Hour	Title 129, Chapter 20, Section 002	No
Heaters A1 through A4	PM	0.018 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heaters B1 through B8	PM	0.030 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heaters C1 through C5	PM	0.036 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heaters D1 through D10	PM	0.054 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heaters E1 and E2	PM	0.060 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
	SO_x	0.25 lbs/hr[1] (each)	2-Hour	Title 129, Chapter 24, Section 001	No
Heaters F1 and F2	PM	0.060 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heaters G1 through G9	PM	0.090 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heaters H1 through H5	PM	0.105 lbs/hr[1] (each)	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
Heater I	PM	0.45 lbs/hr[1]	1-Hour	Construction Permit CP09-047, Condition III.(A)(2)	No
All EPs in Condition III.(A)(1)	Opacity	< 20%[1]	6-Minute	Construction Permit CP09-047, Condition III.(A)(2)	No

[1] Compliance with Condition III.(A)(4) satisfies the testing/monitoring requirements for PM, SO_x, and Opacity.

(4) Operational and Monitoring Requirements:

The emissions units identified in Condition III.(A)(1) shall only combust natural gas as fuel [Construction Permit CP09-047, Condition III.(A)(3)].

Comments: Mr. Armstrong said that only natural gas is used in the facility.

(5) Recordkeeping and Reporting Requirements:

Records of fuel purchases for the EUs described in Condition III.(A)(1) shall be retained [Construction Permit CP09-047, Condition III.(A)(5)].

Comments: Natural gas usage is tracked see Attachment I.

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS

(B) Specific Conditions for Fabrication (EP 2, EP 3, EP 5, and EP 17)

(1) Permitted Emission Points:

The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment ID# and Description R = Required and NR = Not Required	Emission Unit Description
EP 2	None	0.355 MMBtu/hr Single-Head Flame Cutter (EU 2)
EP 3	CE 3: Tempo Model 2500 Cyclone (R)	Wheelabrator/Shotblaster (EU 3)
EP 5	CE 5: Cartridge filter system (R)	Whitney Punch and Plasma Cutter (EU 5)
EP 17	CE17: Water bed located underneath the machine (R)	CNC High Definition Plasma Cutter (EU 17)

(2) Applicable NSPS and NESHAP Requirements:

No NSPS or NESHAP requirements are applicable to emission units listed in Condition III.(B)(1).

(3) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required
EP 2	PM	6.93 lbs/hr[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(B)(2)(a)	No
	PM	0.21 lbs/hr[1]	1-Hour	Construction Permit CP09-047, Condition III.(B)(2)(b)	No
EP 3	PM	0.07 lbs/hr[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(B)(2)(a)	No
EP 5	PM	0.29 lbs/hr[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(B)(2)(a)	No
EP 17	PM	14.66[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(B)(2)(a)	No
EP-3 and EP-5	Opacity	< 20%[1, 3]	6-Minute	Construction Permit CP09-047, Condition III.(B)(2)(a) and Title 129, Chapter 20, Section 004	No

[1] Compliance with Condition III.(B)(4)(a), (b), (c), and (f) satisfy the testing/monitoring requirements for PM and Opacity.

[2] The process weight rate limits in this table are based on the maximum design throughput of the emission units. The process weight rate limit will vary with the actual throughput in accordance with Title 129, Chapter 20, Table 20-2.

[3] Compliance with Condition II.(E) satisfy the testing/monitoring requirements for Opacity. Note: Condition III.(B)(3) above differs from Condition III.(B)(2)(b) of the March 1, 2012 CP. This difference must be noted due to

the provisions of Title 129, Chapter 8, Section 002.01. The original CP condition stated that EP-2 and EP-5 were both subject to the Chapter 20 Section 004 opacity limitation. However, NDEQ has determined that the opacity limitation does not apply to EP-2 and EP-17 because these emissions points do not vent directly to the atmosphere.

(4) Operational and Monitoring Requirements:

(a) Emissions from the CNC High Definition Plasma Cutter (EU 17) shall be controlled by a water bed located underneath the machine (CE 17). Operation and maintenance of each water bed shall be in accordance with the following requirements [Construction Permit CP09-047, Condition III.(B)(3)(a)].

(i) The water bed shall be operated and controlling emissions at all times when the associated emission units are in operation.

(ii) The water bed shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the water beds shall be kept on site and readily available to Department representatives.

(b) Emissions from the Wheelabrator/Shotblaster (EU 3) shall be controlled by the Tempo Model 2500 Cyclone (CE 3). Operation and maintenance of the Tempo Model 2500 Cyclone shall be in accordance with the following requirements [Construction Permit CP09-047, Condition III.(B)(3)(b)].

(i) The cyclone shall be operated whenever the associated emission units are in operation.

(ii) The cyclone shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the cyclone shall be kept on site and readily available to Department representatives.

(iii) Routine observations (at least once each day of cyclone operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

(iv) Collected waste material from the cyclone shall be handled, transported, and stored in a manner that ensures compliance with Condition I.(P).

(c) Emissions from the Whitney Punch and Plasma Cutter (EU 5) shall be controlled by the Troit Model 2DF-4 Cartridge System (CE 5). Operation and maintenance of the Cartridge System shall be in accordance with the following requirements

[Construction Permit CP09-047, Condition III.(B)(3)(c)].

(i) The cartridge filter system shall be operated whenever the associated emission unit is in operation.

(ii) The cartridge filter system shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the cartridge filter system shall be kept on site and readily available to Department representatives.

(iii) Routine observations (at least once each day of cartridge operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

(iv) The dry dust collector filter cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by unit failure.

(v) Collected waste material from the dry dust collectors shall be handled, transported, and stored in a manner that ensures compliance with Condition I.(P).

(d) The Single-Head Flame Cutter (EU-2) shall be limited to 200 hours of operation per twelve consecutive month period [Construction Permit CP09-047, Condition III.(B)(3)(d)].

(e) The permittee shall monitor and record the hours of operation of the Single-Head Flame Cutter (EU 2) [Construction Permit CP09-047, Condition III.(B)(3)(e)].

(f) The Single-Head Flame Cutter (EU 2) shall only combust natural gas [Construction Permit CP09-047, Condition III.(B)(3)(f)].

(5) Recordkeeping and Reporting Requirements:

(a) Records documenting when routine maintenance and preventive actions were performed, with a description of the maintenance and/or preventive action conducted for the following equipment [Construction Permit CP09-047, Condition III.(B)(5)(a)]:

(i) The water bed (CE17)

(ii) The Cyclone (CE3)

(iii) The Cartridge filter system (CE 5)

Comments: Observations and maintenance for each unit are tracked.

(b) Records documenting the date, time, observations, and corrective actions taken for each day the following equipment is in operation [Construction Permit CP09-047, Condition III.(B)(5)(b)]:

(i) The Cyclone (CE3)

(ii) The Cartridge filter system (CE 5)

Comments: Observations and maintenance for each unit is tracked. See Attachment K for the cyclone example.

(c) Records of the hours of operation for the Single-Head Flame Cutter (EU 1) for the past twelve consecutive months [Construction Permit CP09-047, Condition III.(B)(5)(c)].

Comments: Operational hours are recorded. See Attachment J.

(d) Records of fuel purchases for the EU-2 [Construction Permit CP09-047, Condition III.(B)(5)(d)].

Comments: Natural gas usage is tracked see Attachment I.

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS

(C) Specific Conditions for Welding (EP 7)

(1) Permitted Emission Points:

The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment ID# and Description R = Required and NR = Not Required	Emission Unit Description
EP 7	None	Gas Metal Arc Welding (EU 7)

(2) Applicable NSPS and NESHAP Requirements:

No NSPS or NESHAP requirements are applicable to emission units listed in Condition III.(C)(1).

(3) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required
EP 7	PM	2.93 lbs/hr[1,2]	1-Hour	Title 129, Chapter 20, Section 001	No
	Opacity	< 20%[1]	6-Minute	Title 129, Chapter 20, Section 004	No

[1] Compliance with Condition II.(E) satisfy the testing/monitoring requirements for PM and Opacity.
[2] The process weight rate limits in this table are based on the maximum design throughput of the emission units. The process weight rate limit will vary with the actual throughput in accordance with Title 129, Chapter 20, Table 20-2.

(4) Operational and Monitoring Requirements:

No additional operational or monitoring requirements apply to the emission units or points identified in Condition III.(C)(1) (Title 129, Chapter 8, Section 015.02).

(5) Recordkeeping and Reporting Requirements:

The permittee shall comply with applicable recordkeeping and reporting requirements in Conditions II.(A) and II.(B).

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS

(D) Specific Conditions for Coating Operations (EP 10, EP 11, EP 12, EP 13)

(1) Permitted Emission Points:

The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment ID# and Description R = Required and NR = Not Required	Emission Unit Description
EP 10	High Efficiency Dry Filters (R)	Paint Booth (EU 10)
EP 11		Primer Booth (EU 11)
EP 12		Finish Paint Booth (EU 12)
EP 13	None	Dip Tank (EU 13)

(2) Applicable NSPS and NESHAP Requirements:

The EUs described by Condition III.(D)(1) are not subject to any NSPS or NESHAP.

(3) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required
EP 10	PM	4.04 lbs/hr[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(C)(2)(b)	No
EP 11	PM	4.04 lbs/hr[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(C)(2)(b)	No
EP 12	PM	4.04 lbs/hr[1, 2]	1-Hour	Construction Permit CP09-047, Condition III.(C)(2)(b)	No
All EPs in Condition III.(C)(1)	Opacity	< 20%[1]	6-Minute	Construction Permit CP09-047, Condition III.(C)(2)	No

[1] Compliance with Condition III.(D)(4)(b) satisfies the testing/monitoring requirements for PM and Opacity.
[2] The process weight rate limits in this table are based on the maximum design throughput of the emission units. The process weight rate limit will vary with the actual throughput in accordance with Title 129, Chapter 20, Table 20-2.

(4) Operational and Monitoring Requirements:

(a) The following HAP BACT conditions apply to the emissions units EU 11 and EU 12 [Construction Permit CP09-047, Condition III.(C)(3)(a)].

(i) Cleaning and painting operations shall use acetone or Naphthalene-depleted Aromatic 150 low-HAP solvents.

(ii) Coatings, as applied, shall contain less than 2.5 lbs of total HAP per gallon.

(iii) Coatings, as applied, shall contain less than 26 percent by weight total HAP.

Comments: Individual HAPs are tracked. See Attachment E and Attachment F. The coatings highlighted in red (Attachment F) are not used at the facility but provide to customers for touch up to equipment.

(b) Surface coating operations shall be conducted in paint booths or the dip tank. The paint booths (EU-10, EU-11, and EU-12) shall be equipped with high efficiency dry filters, with a minimum PM and PM_{10} control efficiency of 98%, to remove overspray particulates from the exhaust [Construction Permit CP09-047, Condition III.(C)(3)(b)].

(i) The Dip Tank (EP 13) shall be covered when not in use.

(ii) The dry filters shall be operated and be controlling emissions at all times when the associated emission units are in operation.

(iii) The dry filters shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the paint booths shall be kept on site and readily available to NDEQ representatives.

(iv) Filters shall be changed out once per week or according to the schedule recommended by the manufacturer.

(v) The filter system shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated filter system is operating.

(vi) Observations at least once each day during daylight hours of filter system operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.

(5) Recordkeeping and Reporting Requirements:

(a) Records documenting the date, time, and pressure differential reading for each day the associated filters are in operation [Construction Permit CP09-047, Condition III.(C)(5)(a)].

(b) Filter replacement records including the date the filter replacement occurred and the type of filter installed [Construction Permit CP09-047, Condition III.(C)(5)(b)].

(c) Records documenting the date, time, observations, and corrective actions taken for each day the associated filters are in operation [Construction Permit CP09-047, Condition III.(C)(5)(c)].

(d) MSDS, or equivalent documentation, of all cleaning solvents and paints shall be retained on site [Construction Permit CP09-047, Condition III.(C)(5)(d)].

Comments: Observations and maintenance are tracked. See Attachment L.

MSDS and EDS were being kept on site.

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS

(E) Specific Conditions for Insignificant Activities:

(1) The source is permitted for the insignificant activities in the following table:

Insignificant Activity ID	Unit Description	Insignificance Criteria
EP 6	Takisawa Turning Machine (EU 6)	coolants do not contain any HAPs or VOCs
EP 19	Horizontal Saw (EU 19)	coolants do not contain any HAPs or VOCs
EP 20	Multispindle Drill (EU 20)	No VOC and HAP emissions
EP 21	Gang Drill (EU21)	No VOC and HAP emissions
EP 22	Surface Grinder (EU 22)	coolants do not contain any HAPs or VOCs
EP 23	Okuma CNC Lathe (EU 23)	coolants do not contain any HAPs or VOCs
EP 24	Haas CNC Mill (EU 24)	coolants do not contain any HAPs or VOCs
EP 30	Cut Off Lathe (EU 30)	coolants do not contain any HAPs or VOCs

(2) Emission Limitations:

The insignificant activity is subject to the limitations specified in Title 129, Chapter 20, Section 001 (Title 129, Chapter 20, Section 001).

(3) Operational and Monitoring Requirements:

The insignificant activities identified in Condition III.(C)(1) are exempt from operational and monitoring requirements (Title 129, Chapter 7, Section 006.04, and Chapter 8, Sections 004.01B and 015).

(4) Recordkeeping and Reporting Requirements:

A written notification in accordance with Condition II.(C) of this permit shall be made to the NDEQ if there are additions, or changes, to the list of insignificant activities in Specific Condition III.(C)(1) (insignificant activities are as defined in Operating Permit Application Forms). Notification is only required for those insignificant activities that must be included in an application.

IV. HAP Emission Calculation Methodology

To demonstrate compliance with Specific Condition II.(G), emissions shall be calculated each calendar month using data from the following sources listed in descending order of preference. For compliance purposes, total HAP is equivalent to the sum of individual HAPs.

a. Most recent, valid performance test results performed within the past five years
b. Manufacturer's guarantees and Material Safety Data Sheet (MSDS)
c. Manufacturer/engineering estimates
d. Emission factors from AP-42 or other EPA published documents

Emission factors and pound per hour (lb/hr) emission rates presented in this section shall be replaced with data obtained from the most current, approved emissions test conducted in accordance with Specific Condition II.(D).

If it is necessary to convert uncontrolled to controlled emissions, multiply the uncontrolled emissions by one minus the overall control efficiency (fraction) of the control equipment. When emission unit or control equipment operating parameter(s) are not maintained at levels recorded during the most recent performance test, uncontrolled emission factors shall be used.

Additional individual HAPs not specifically addressed in this calculation method that are found to be emitted from the emission points listed below must be incorporated into the facility-wide HAP calculation.

External Combustion of Natural Gas

Emissions from the natural gas combustion units shall each be calculated using the following equation.

$$E_U = (EF) \times (NG_U) \ / \ (2{,}000 \text{ lbs/ton})$$

Where E_U = Emissions from Unit (tons/month)
EF = Emission factor (lbs/MMscf)
NG_U = Natural Gas Usage of Unit (MMscf/month)

Pollutant	Emission Factor (lb/MMscf)
Individual HAPs	
Benzene	0.0021
Dichlorobenzene	0.0012
Formaldehyde	0.075
Hexane	1.8
Lead Compounds	0.0005
Naphthalene	0.00061
Polycyclic Organic Matter (POM)	0.0000882
Toluene	0.0034
Arsenic Compounds (ASC)	0.0002
Beryllium Compounds (BEC)	0.000012
Cadmium Compounds (CDC)	0.0011
Chromium Compounds (CRC)	0.0014
Cobalt Compounds (COC)	0.000084

Pollutant	Emission Factor (lb/MMscf)
Manganese Compounds (MNC)	0.00038
Mercury Compounds (HGC)	0.00026
Nickel Compounds (NIC)	0.0021
Selenium Compounds (SEC)	0.000024
Total HAPs	1.89

Fabrication Operations: Single-head flame cutter (Unit 2)

$$E_F = N_S \times T_{max} \times R_{max} \times EF \times O_T / 2{,}000 \text{ (lbs/ton)}$$

E_F = Total Single/Total HAP Emissions from the units listed (tons/month)
Ns = Number of stations
T_{max} = Maximum Metal Thickness Cut by unit (in)
R_{max} = Maximum Metal Cutting Rate (in/min)
EF = Emission Factor (shown below)
O_T = Time of Operation (min/month)

Hazardous Air Pollutant	Flame Cutting Emission Factors	
Chromium Compounds (CRC)	0.0003	lb/1000 in.
Manganese Compounds (MNC)	0.0005	lb/1000 in.
Nickel Compounds (NIC)	0.0001	lb/1000 in.
Total HAP	0.001	lb/1000 in.

Emission factors from Indiana Department of Environmental Management (IDEM) Office of Air Quality (OAQ)

Welding Operations: Gas Metal Arc Welding

$$E_W = N_S \times EC_{max} \times EF \times O_T / 2{,}000 \text{ (lbs/ton)}$$

E_W = Total Single/Total HAP Emissions from the units listed in (A) (tons/month)
Ns = Number of stations
EC_{max} = Maximum Electrode Consumption per Station (lb/hr)
EF = Emission Factor (shown below)
OT = Time of Operation for all Welding Stations (min/month)

Hazardous Air Pollutant	Welding Emission Factors	
Chromium Compounds (CRC)	0.000524	lb/lb electrode
Cobalt Compounds (COC)	0.000001	lb/lb electrode
Manganese Compounds (MNC)	0.000346	lb/lb electrode
Nickel Compounds (NIC)	0.000184	lb/lb electrode
Total HAP	0.001055	lb/lb electrode

Emission factors from AP 42, Chapter 12.19, Tables 12.19-1 and 12.19-2 (January 1995).

Surface Coating Operations

Emissions from the surface coating operations shall be calculated by assuming that all HAPs used are emitted. To calculate the HAP emissions from the surface coating operations, the following equation shall be used:

$$E_i = \sum_{j=1}^{n} \frac{v_i \times c_{ji}}{2{,}000\ (\frac{lbs}{ton})}$$

E_i = Total emissions (tons/month) of an individual HAP, "*i*," from "*n*" products used at the facility each calendar month;

n = Total number of HAP-containing products used at the facility each calendar month;

v_j = Volume (gallons) or weight (pounds) of each HAP-containing product, "*j*," used at the facility each calendar month; and

c_{ji} = Concentration (pounds of HAP per gallon of product) or weight fraction (pounds of HAP per pound of product) of HAP "*i*" in product "*j*" used at the facility each calendar month.

The HAP content and the density or specific gravity of the products shall be obtained from the manufacturer and/or suppliers including Material Safety Data Sheets (MSDS). If the data obtained gives a range for the HAP content, the maximum value from the range shall be used when determining emissions. If it is necessary to convert volume to weight, multiply the volume (gallons) of the product used by the density (pounds/gallon) of the product. If specific gravity is given, multiply the specific gravity by 8.34 lb/ gallon (the density of water) to obtain the density of the product.

Facility-Wide HAP Calculation

All combined HAPs used at the facility shall be calculated each calendar month using the following equation:

$$E_T = \sum_{i=1}^{m} E_i$$

E_T = Total emissions (tons/month) of all HAPs combined used at the facility each calendar month

m = Total number of individual HAPs contained in the products used at the facility each calendar month; and

E_i = Total emissions (tons/month) of an individual HAP, "*i*," from all products used or operations that occurred at the facility each month.

ATTACHMENT B

AIR QUALITY CLASS II OPERATING PERMIT

REOPEN FOR CAUSE

PERMIT NUMBER: OP13M1-028

Source Name: Orthman Manufacturing Inc.- North Plant	**NDEQ Facility ID#:** 08132
Mailing Address: PO Box B Lexington, Nebraska 68850	**Source Location:** 75765 Road 435 NE ¼ Section 28, Township 10N, Range 21W Lexington, Dawson County, Nebraska

Revised Operating Permit: Operating Permit #OP08R2-005 issued September 19, 2012.

The above Operating Permit is hereby revised as follows: Conditions I.(A), (B), (C), (D), (E), (F), (G), (H), (I), (J), (K), (L), (M), (N), (O), (P), (Q), and (R) were duplicated in Condition II-Specific Conditions of OP08R2-005 and have been removed. Applicable recordkeeping, reporting, and notification requirements have been added to Condition II-Specific Conditions of OP08R2-005.

Pursuant to Title 129, Chapter 14, of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this significant revision and the thirty (30) day period allowed for comments has elapsed. No other terms or conditions of the operating permits described above are being revised or otherwise modified by this document. This revision does not trigger any additional requirements under Nebraska Title 129.

Except as provided above, all other provisions of the original permit are still in effect and, in concert with this revision, constitute the effective operating permit. This operating permit revision shall be attached to the original operating permit and maintained with it henceforth.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. Unless otherwise noted, the conditions of this permit are enforceable by the United States Environmental Protection Agency (USEPA) and the Nebraska Department of Environmental Quality (NDEQ). The permit holder, owner, and operator of the source shall assure compliance with all of the terms and conditions in this permit and the Attachments.

The undersigned issues this document on behalf of the Director in accordance with Title 129 – Nebraska Air Quality Regulations as amended December 22, 2012.

9/11/13	**{ORIGINAL SIGNED}**
Date	Shelley Schneider, Air Administrator Air Quality Division

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II.(A) Adds a new condition for recordkeeping requirements.	II-1
II.(B) Adds a new condition for reporting requirements.	II-2
II.(C) Adds a new condition for notification requirements.	II-3

ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources
BACT	Best Available Control Technology
btu	British Thermal Unit
bu	Bushel
CAA	Clean Air Act
CE	Control Equipment
cf	Cubic feet
CEMS	Continuous Emissions Monitoring System
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CP	Construction Permit
Director	Director of the Nebraska Department of Environmental Quality
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EMIS	Emergency Management Information System
EQC	Environmental Quality Council
EP	Emission Point
EU	Emission Unit
FIP	Federal Implementation Plan
FR	Federal Register
ft	Feet
FTIR	Fourier Transform Infrared
HAP	Hazardous Air Pollutant(s)
hp	Horsepower
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
LNB	Low NO_x Burner
MACT	Maximum Achievable Control Technology
Mgal	One Thousand Gallons
MMBtu	One Million British Thermal Units
MMgal	One Million Gallons
MMscf	One Million Standard Cubic Feet
MSDS	Material Safety Data Sheet
n/a	Not Applicable
NAAQS	National Ambient Air Quality Standards
NDEQ	Nebraska Department of Environmental Quality
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
OP	Operating Permit
PAL	Plant-wide Applicability Limit
PEMS	Predictive Emissions Monitoring System
Pb	Lead (chemical abbreviation)
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
PM_{10}	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million by volume
ppmvd	Parts per Million by volume, dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
TDS	Total Dissolved Solids
Title 129	Title 129, Nebraska Air Quality Regulations
tpy	Tons per year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate Matter
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VHAP	Volatile Hazardous Air Pollutant
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
yr	Year

II. SPECIFIC CONDITIONS

Terms and conditions of this permit are in accordance with the requirements of Title 129, Chapter 8, Sections 001 and 015. The specific applicable requirement that is the basis for each specific permit condition is listed with each permit condition.

(A) Recordkeeping: To ensure compliance with this permit, records shall be maintained as outlined below. Records include, but are not limited to: copies of all applications, notifications, reports, test protocols, test results, and plans; and, originals of all monitoring results, measurements, inspections, and observations (Title 129, Chapter 8, Sections 004.02 and 015.02).

(1) All records required by this permit shall be kept on-site for a minimum of five (5) years and shall be clear and readily accessible to NDEQ representatives, unless otherwise specified in this permit.

(2) Monthly calculations and records required throughout this permit shall be compiled no later than the fifteenth (15^{th}) day of each calendar month and shall include all records and calculations generated through the previous calendar month, unless otherwise specified in this permit.

(3) The source shall keep the following records for each malfunction, start-up and shutdown where emissions were, or may have been, in excess of an emission limitation or standard (Title 129, Chapter 6, Sections 002 and 005; Chapter 8, Section 004.03B and 015.03; Chapter 11; and Chapter 35, Sections 002, 004 and 005):

(a) The identity of the equipment.

(b) Reason for, or cause of, the malfunction, shutdown, or start-up.

(c) Duration of period of excess emissions.

(d) Date and time of the malfunction, shutdown, or start-up.

(e) Physical and chemical composition of pollutants whose emissions are affected by the action.

(f) Methods, operating data, and/or calculations used to determine these emissions.

(g) Quantification of emissions in the units of the applicable emission control regulation.

(h) All measures utilized to minimize the extent and duration of excess emissions during the malfunction, shutdown, and start-up.

(4) The source shall keep records of maintenance performed on all permitted emission units, permitted control equipment, and required monitoring equipment (Title 129, Chapter 8, Section 004.01C and 015.02; Chapter 11, Section 001; Chapter 34, Section 006; and Chapter 35, Sections 006.02 and 006.05).

(5) Except for electronically generated records, all manually entered records of opacity readings, instrument readings, visual equipment inspections, log book entries, and any other record of equipment performance shall be initialed, or otherwise signed, by the individual who entered the record.

(6) Operation and maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission units, required control equipment and required monitoring equipment shall be kept for the life of the equipment.

(B) Submittals/Reporting:

All submittals, including reports required by Condition II.(B) and Condition II.(D)(2)(g), shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete (Title 129, Chapter 1, Section 135; Chapter 7, Section 008; and Chapter 8 Sections 012.01 and 015).

The following reports shall be submitted to the NDEQ as specified:

(1) Certification of compliance with the terms and conditions of this permit, including emission limitations, standards, or work practices, for the preceding calendar year, shall be submitted to the NDEQ by March 31 of each year. The report must be certified by a responsible official and shall include the following (Title 129, Chapter 8, Sections 012.05C and 015.03):

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The compliance status;

(c) A determination of whether compliance was continuous or intermittent;

(d) The methods used for determining the compliance status of the source, currently and over the reporting period; and,

(e) All instances of deviations from permit requirements, including those attributable to start-ups, shutdowns or malfunctions, the probable cause of such deviations, and any corrective actions or preventive measures taken.

Comments: The last report was received January 28,2013 which addresses the 2012 reporting year. Missing reports included reporting year 2013, and 2014.

As noted in the previous inspection it was discovered that the September 19, 2012 Operating Permit was issued with errors. Primarily, there was a duplication of general conditions and specific conditions A, B, and C were not included. These errors where corrected by reopening the permit for cause and the Class II Operating Permit Reopen for Cause was issued on September 11, 2013.

(2) The permittee shall submit completed emission inventory forms for the preceding calendar year to the NDEQ by March 31 of each year (Title 129, Chapter 6).

Comments: Reports have been received by the Department and were available for review. The 2013 report was received by the Department on March 31, 2014 and the 2014 report was received by the Department on April 1, 2015.

(3) Any emissions from emergency or upset conditions, or that are due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limitations shall be reported within two (2) working days of the date on which the permittee first becomes aware of the excess emissions. The report may be submitted initially without a certification by the responsible official, as required in Condition II.(B) above, if an appropriate certification is provided within ten (10) days thereafter, together with the information required under Condition II.(A)(3) and any corrected or supplemental information required concerning the event (Title 129, Chapter 11 and Chapter 35, Sections 004 and 005).

(C) The permittee may make the changes identified in Condition II.(C)(1) within a permitted source without a permit revision if the change is not a modification which would require a construction permit under Chapters 17, 18, 19, 23, 27, and 28; the change does not result in the emissions allowable under the permit being exceeded; the changes do not violate any terms of this permit related to monitoring, testing, recordkeeping, reporting, or compliance certification; and the changes do not violate any applicable requirements (Title 129, Chapter 15, Section 007).

(1) Changes in the configuration of the source's equipment, defined as "Section 502(b)(10) changes", as defined in Title 129, Chapter 1, Section 139 (Title 129, Chapter 15, Section 007.01). Written notification of these changes shall be sent to the NDEQ as follows:

(a) Non-Emergencies (Title 129, Chapter 1, Section 139; Chapter 15, Section 007):

(i) Written notification shall be received by the NDEQ a minimum of thirty (30) days in advance of the proposed changes;

(b) Emergencies (Title 129, Chapter 1, Section 139; Chapter 15, Section 007):

(i) Initial notification shall be made within two working days of the date on which the permittee first becomes aware of the need for the change;

(ii) A follow-up written notification shall be submitted as soon as practicable; and,

(iii) The notifications shall include an explanation of the nature of the emergency.

(c) Required information (Title 129, Chapter 15, Section 007.01):

(i) A brief description of the change within the permitted source (Chapter 15, Section 007.01A);

(ii) The date on which the change will occur (Chapter 15, Section 007.01B);

(iii) Any change in emissions (Chapter 15, Section 007.01C); and,

(iv) Any permit term or condition that is no longer applicable as a result of the change (Chapter 15, Section 007.01D).

(d) A copy of the notification shall be attached to the source's copy of the operating permit (Title 129, Chapter 15, Section 007).

(2) Testing requirements:

(a) Testing may be required if a change reported under Condition II.(C)(1) involves an emissions unit that was previously tested (Title 129, Chapter 8, Section 004.01B and 015; Chapter 34)

ATTACHMENT C

Orthman Manufacturing Paint VOC Analysis Sheet

North Plant totals

2014 Yellow means have SDS in file EDS only

SDS #	Order Number	Name of Product	Stock Number	Size cont	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				Total Gallons Used During The Year	Total pounds VOC Per Year	Total Tons VOC Per Year	Total Pounds HAP Per Year	Total Tons HAP Per Year	2014 VOC Content per Month IN TONS Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	152-591	D-150 ND	BARSOL	53	0	0	0	0	0	0	0	0	1	0	0	0	X			53.00	372.59	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00
2	152-592	Acetone	BARSOL	55	0	0	5	2	1	5	1	9	8	5	0	0	X			2035.00	13451.35	6.73	0.00	0.00	0.00	0.00	0.91	0.36	0.18	1.09	0.18	1.64	1.45	0.91	0.00	0.00
5	152-730	ORTHMAN JD AG YELLOW HS (UR. Part - A)	Q3690-7681	5	0	0	0	0	0	0	5	0	0	0	1	0	X	X		35.00	100.80	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00
8	152-744	Primer. GRY (UR. Part - A)	W43181A	60	5	4	1	3	1	4	0	4	2	0	1	2	X	X		1350.00	4387.50	2.19	607.50	0.30	0.41	0.33	0.08	0.24	0.08	0.33	0.00	0.33	0.16	0.00	0.08	0.16
9	152-745	Gray Primer (UR. Part A)	W43181A	1	0	0	0	0	0	0	0	0	0	0	0	0	X	X		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
10	152-724	Spectrathin Slow Reducer	TFS309-80	1	0	0	24	0	0	0	0	0	0	0	0	0		X		24.00	163.44	0.08	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
11		Spectrathin Sow Reducer	TFS309-80	5	0	0	0	0	0	0	0	0	0	0	0	0		X		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
12	152-650	AGCO. MASSEY RED ALK	SPU 69277	5	0	7	0	0	0	0	0	0	0	0	0	1		X		40.00	150.80	0.08	6.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13	152-748	IH Red (ALK) touch up paint	QT110RD254	1	0	0	0	0	0	0	0	0	0	0	0	0	X	X		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
14	152-748	IH Red (ALK) touch up paint	QT110RD254	5	0	0	0	0	0	0	0	0	0	1	0	0	X	X		5.00	23.25	0.01	12.15	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
15	152-727	Orth. GRN (UR. Part A)	Q3690-7524	45	4	2	2	2	1	2	3	2	0	2	1	1	X	X		990.00	3078.90	1.54	0.00	0.00	0.28	0.14	0.14	0.14	0.07	0.14	0.21	0.14	0.00	0.14	0.07	0.07
16	152-729	QSTR. GRN (UR. Part A)	Q3690-7692	5	0	0	0	0	5	0	3	0	0	0	0	0	X	X		45.00	145.35	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.02	0.00	0.00	0.00	0.00	0.00
17	152-729	QSTR. GRN (UR. Part A)	Q3690-7692	45	0	0	0	0	0	0	0	0	0	0	0	1	X	X		45.00	145.35	0.07	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	0.07
18	152-735	ATI. BLU (UR. Part A) 5 Gal	Q3690-7693	5	0	0	0	4	0	0	3	2	0	2	0	0	X	X		55.00	177.10	0.09	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.00
19	152-734	ATI Blue 2K UR. 45 Gal	Q3690-7693	45	0	0	0	0	0	0	0	0	1	0	0	0	X	X		45.00	144.90	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
20	152-733	Cat. Yellow (Part A)	Q3690 - 7659	5	5	0	0	0	0	0	1	1	0	0	4	0	X	X		55.00	173.25	0.09	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.00
21	152-733	Cat. Yellow (Part A)	Q3690 - 7659	45	0	0	0	0	0	0	0	0	0	0	0	0	X	X		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
22	152-752	Spectrathin Medium Reducer	TFS309-80	1	72	72	24	24	24	0	48	48	48	5	24	24	X	X		413.00	2816.66	1.41	0.00	0.00	0.25	0.25	0.08	0.08	0.08	0.00	0.16	0.16	0.16	0.02	0.08	0.08
23	152-753	Spectrathin Very Slow Reducer	TFS309-80	1	0	0	24	0	0	0	0	0	0	0	0	0		X		24.00	163.68	0.08	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
24	152-812	OCS BEIGE (Tan) Sherwin Williams	KEM 400 RAL 1001	1	0	0	0	0	0	0	0	0	0	0	0	0	X			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
28	152-750	(Urethane Hardner) replacing GXH1086	GXH1080	5	0	0	0	0	0	0	0	0	0	0	0	1	X	X		5.00	9.15	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
29	152-750	(Urethane Hardner) replacing GXH1086	GXH1080	53	1	3	0	1	1	0	5	0	0	2	0	1	X	X		742.00	1357.86	0.68	0.00	0.00	0.05	0.15	0.00	0.05	0.05	0.00	0.24	0.00	0.00	0.10	0.00	0.05
30	152-749	Vermillion RED Kuhn/Krause	Q3690-8056	5	0	0	2	0	0	0	0	0	0	0	2	1	X	X		25.00	78.25	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
33	152-672	John Deere Black	DM19147	5	0	0	0	0	0	0	0	0	0	0	0	0	X	X		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
36	152-726	Approved J.D. Green / Spectra F8A NEW	SPU71718	5	4	0	0	0	0	2	4	0	0	0	0	0	X	X		50.00	161.50	0.08	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00
37	152-494	Approved J.D. Green / Spectra F8A NEW	SPU71718	45	0	0	0	0	0	0	0	0	0	1	0	1	X	X		90.00	290.70	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.07
38	152-672	HS Black Alkyd Enamel - new dip	Q1590-144	50	1	1	1	1	0	0	1	0	0	1	0	0	X	X		300.00	993.00	0.50	36.00	0.02	0.08	0.08	0.08	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00
39		SPECTRA ALK EN-HI CL - touch up paint	QT110HC	1	10	0	13	0	0	1	0	0	6	0	0	0	X	X		30.00	135.30	0.07	103.50	0.05	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
40		SPECTRA ALK EN-HI CL - touch up paint	QT110HC	5	0	0	0	0	0	0	0	0	0	0	0	8	X	X		40.00	180.40	0.09	138.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
41		SPECTRA ALK EN-HI WH - touch up paint (white)	QT110HW	1	0	0	0	0	0	0	0	0	0	0	0	0	X			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
42		Urethane Accelerator	97-722/08	0.125	0	0	0	0	0	0	0	0	0	0	0	0	X	X	SOUTH	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
43		Tin Accelerator	UB290	1	0	0	0	0	0	0	0	0	0	0	0	0	X	X	SOUTH	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
44	152-737	New Orthman Black HS Urethane	Q3690-7526	5	5	8	4	0	9	0	4	0	1	1	0	0	X	X		165.00	537.90	0.27	0.00	0.00	0.05	0.07	0.03	0.00	0.07	0.00	0.03	0.00	0.01	0.01	0.00	0.00
44	152-737	New Orthman Black HS Urethane	Q3690-7526	45	0	0	0	0	0	0	1	1	0	0	0	1	X	X		135.00	440.10	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.07
48		Spectracron 360 HS WH Base A	QT360HW/01	1	0	1	0	0	0	0	0	2	0	2	0	1	X	X		8.00	16.98	0.01	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
49	945-5	Carbit 945-5			0	0	0	0	0	0	0	0	0	0	0	0	X	X		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
50	942-5	Carbit 942-5			0	0	0	0	0	0	0	0	0	0	0	0	X	X		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
51		Spectracron 701 Wash Primer	QAP701/01	1	0	0	0	1	0	0	0	0	0	0	0	0	X			1.00	5.97	0.00	1.10	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
52		Spectracron 702 B Component	QAP702/01	1	0	0	0	1	0	0	0	0	0	0	0	0	X			1.00	6.31	0.00	0.32	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
53		Duraprep WB Heavy Ind Stripper	7-551/05	5	0	0	0	0	0	0	0	0	0	0	0	0	X			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
54		SPECTRACRON 360 URETH HIGH CLR	QT360HC/01	1	0	0	0	0	4	0	0	0	0	0	0	8	X	X		12.00	38.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
56		HS Urethane Low Clear	QT360LC/01	1	0	0	0	0	0	0	10	3	0	0	0	0				13.00	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
		AMLX 2/400 WHITE RESIN	AK2-3/01	1	0	0	0	0	0	0	3	0	0	0	0	0	X	X	eds on MIXED	3.00	21.81	0.01	23.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
		AMLK 2 CURE Blended with AK2-3	AK2-B/01	1	0	0	0	0	0	0	3	0	0	0	0	0	X	X	eds on MIXED	3.00	21.81	0.01	23.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
		AMCT 68HS RESIN	AT68HS-A/01	1	0	0	0	0	0	0	1	0	0	0	0	0	X			1.00	3.34	0.00	3.36	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
		AMCT 68HS KIT	AT68HS-A/1U	1	0	0	0	0	0	0	1	0	0	0	0	0			X	1.00	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
		AMCT 68HS CURE	AT68HS-B/04	0.25	0	0	0	0	0	0	1	0	0	0	0	0	X			0.25	0.84	0.00	0.84	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
		AMCT 68HS POWDER	AT68HS-P/01	1	0	0	0	0	0	0	1	0	0	0	0	0	X			1.00	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
		AMCT 65 THINNER	AT765/01	1	0	0	0	0	0	0	1	0	0	0	0	0				1.00	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
55		Aerosols		0.25	216	228	132	108	0	48	0	24	0	0	48	216				255.00	1805.40	0.90	878.99	0.44	0.19	0.20	0.12	0.10	0.00	0.04	0.00	0.02	0.00	0.00	0.04	0.19
																				7094.25	31595.54	15.80	1833.90	0.92	1.40	1.27	1.65	1.09	0.59	1.62	1.14	2.39	2.06	1.36	0.33	0.90

ATTACHMENT D

Orthman Manufacturing, Inc. - North Plant

Date Painting Activities Commenced: **2015**

Permit Limits: **100.0** tons per year of VOC emissions
10.0 tons per year of HAP emissions — 10 tons individual HAP
Permit states 25 tons per year total HAP and 10 tons individual HAP

		Monthly VOC tons	Rolling Total VOC tons/yr	Monthly HAP tons	Rolling Total HAP tons/yr	Compliance with VOC permit limit?	Compliance with HAP permit limit?
2006	January	0.74	4.55	0.37	1.42	Yes	Yes
	February	0.63	4.72	0.30	1.6	Yes	Yes
	March	0.57	4.97	0.26	1.78	Yes	Yes
	April	0.25	4.92	0.11	1.8	Yes	Yes
	May	0.36	4.95	0.16	1.87	Yes	Yes
	June	0.18	5.05	0.09	1.94	Yes	Yes
	July	0.58	5.43	0.27	2.15	Yes	Yes
	August	0.7	5.77	0.33	2.38	Yes	Yes
	September	0.69	6.22	0.26	2.57	Yes	Yes
	October	0.66	6.56	0.32	2.81	Yes	Yes
	November	0.56	6.66	0.27	2.94	Yes	Yes
	December	0.91	7.18	0.43	3.27	Yes	Yes
2006	January	0.95	7.78	0.71	3.88	Yes	Yes
	February	0.83	12.69	0.62	4.13	Yes	Yes
	March	0.68	7.92	0.52	4.35	Yes	Yes
	April	0.45	7.8	0.33	4.42	Yes	Yes
	May	0.63	8.18	0.45	4.76	Yes	Yes
	June	0.26	8.08	0.18	4.78	Yes	Yes
	July	0.25	8.15	0.18	4.87	Yes	Yes
	August	0.47	8.04	0.35	4.95	Yes	Yes
	September	0.45	7.79	0.36	4.98	Yes	Yes
	October	0.7	7.8	0.35	5.07	Yes	Yes
	November	0.37	7.51	0.28	5.03	Yes	Yes
	December	0.56	7.51	0.44	5.2	Yes	Yes
2007	January	1.03	7.63	0.69	5.46	Yes	Yes
	February	0.93	7.61	0.60	5.36	Yes	Yes
	March	0.88	7.66	0.66	4.87	Yes	Yes
	April	0.42	7.4	0.32	5.19	Yes	Yes
	May	0.5	7.45	0.36	5.22	Yes	Yes
	June	0.21	7.03	0.14	4.91	Yes	Yes
	July	0.26	7.03	0.19	4.92	Yes	Yes
	August	0.57	7.36	0.39	5.13	Yes	Yes
	September	1.22	8.1	0.89	5.67	Yes	Yes
	October	0.58	8.23	0.45	5.76	Yes	Yes
	November	0.73	8.26	0.58	5.99	Yes	Yes
	December	0.82	8.71	0.59	6.3	Yes	Yes
2008	January	0.89	9.04	0.64	6.50	Yes	Yes
	February	1.01	9.02	0.8	6.61	Yes	Yes
	March	0.95	9.04	0.48	6.49	Yes	Yes
	April	1.14	9.3	0.56	6.39	Yes	Yes
	May	1.31	10.19	0.74	6.81	Yes	Yes
	June	0.58	10.27	0.3	6.75	Yes	Yes
	July	0.82	10.88	0.32	6.93	Yes	Yes
	August	1.16	11.78	0.63	7.37	Yes	Yes
	September	0.82	12.03	0.58	7.56	Yes	Yes
	October	1.57	12.38	0.88	7.55	Yes	Yes
	November	0.63	12.43	0.49	7.59	Yes	Yes
	December	1.08	12.78	0.72	7.73	Yes	Yes
2009	January	0.68	0.68	0.14	0.14	Yes	Yes
	February	0.89	1.57	0.07	0.21	Yes	Yes
	March	1.52	3.09	0.13	0.34	Yes	Yes
	April	0.5	3.59	0.2	0.54	Yes	Yes
	May	0.46	4.05	0.03	0.57	Yes	Yes
	June	0.77	4.82	0.03	0.6	Yes	Yes
	July	0.38	5.2	0.02	0.62	Yes	Yes
	August	0.59	5.79	0.04	0.66	Yes	Yes
	September	0.88	6.67	0.07	0.73	Yes	Yes
	October	0.94	7.61	0.08	0.81	Yes	Yes
	November	1.07	8.68	0.08	0.89	Yes	Yes
	December	0.74	9.42	0.06	0.95	Yes	Yes
2010	January	0.94	9.68	0.8	1.61	Yes	Yes
	February	0.74	9.53	0.64	2.18	Yes	Yes
	March	0.47	8.48	0.26	2.31	Yes	Yes
	April	0.31	8.29	0.22	2.33	Yes	Yes
	May	0.87	8.7	0.66	2.96	Yes	Yes
	June	0.6	8.53	0.44	3.37	Yes	Yes
	July	0.53	8.68	0.47	3.82	Yes	Yes
	August	0.85	8.94	0.69	4.47	Yes	Yes
	September	0.72	8.78	0.56	4.96	Yes	Yes
	October	0.94	8.78	0.08	4.96	Yes	Yes
	November	1.07	8.78	0.08	4.96	Yes	Yes
	December	0.74	8.78	0.06	4.96	Yes	Yes
2011	January	0.77	8.61	1.04	5.2	Yes	Yes
	February	2	9.87	1.16	5.72	Yes	Yes
	March	1.05	10.45	0.81	6.27	Yes	Yes
	April	1.35	11.49	0.86	6.91	Yes	Yes
	May	1.94	12.56	1.02	7.27	Yes	Yes
	June	1.16	13.12	0.84	7.47	Yes	Yes
	July	1.71	14.3	0.01	7.01	Yes	Yes
	August	0.95	14.4	0.18	6.5	Yes	Yes
	September	0.61	14.29	0.58	6.82	Yes	Yes
	October	0.13	13.48	0.03	6.47	Yes	Yes
	November	0.43	12.84	0.01	6.4	Yes	Yes
	December	0.96	13.06	0.2	6.54	Yes	Yes
2012	January	2.07	14.36	0.48	5.98	Yes	Yes
	February	2.89	15.25	0.65	5.48	Yes	Yes
	March	2.05	16.24	0.48	5.15	Yes	Yes
	April	2.86	17.76	0.62	4.90	Yes	Yes
	May	2.46	18.27	0.40	4.28	Yes	Yes
	June	1.02	18.13	0.13	3.77	Yes	Yes
	July	2.29	18.70	0.55	4.31	Yes	Yes
	August	2.96	20.71	0.69	4.81	Yes	Yes
	September	1.63	21.73	0.06	4.30	Yes	Yes
	October	3.07	24.67	0.52	4.89	Yes	Yes
	November	1.04	25.28	0.03	4.91	Yes	Yes
	December	1.91	26.23	0.07	4.79	Yes	Yes
2013	January	6.24	30.41	0.29	4.58	Yes	Yes
	February	3.40	30.92	0.18	4.10	Yes	Yes
	March	3.19	32.06	0.19	3.81	Yes	Yes
	April	4.14	33.33	0.13	3.33	Yes	Yes
	May	3.23	34.11	0.13	3.06	Yes	Yes
	June	2.65	35.74	0.08	3.01	Yes	Yes
	July	4.51	37.96	0.15	2.61	Yes	Yes
	August	2.20	37.20	0.14	2.06	Yes	Yes
	September	4.19	39.76	0.22	2.22	Yes	Yes
	October	2.27	38.96	0.08	1.67	Yes	Yes
	November	4.00	41.92	0.16	1.80	Yes	Yes
	December	3.32	43.33	0.11	1.83	Yes	Yes
2014	January	1.40	38.48	0.17	1.73	Yes	Yes
	February	1.27	36.36	0.15	1.70	Yes	Yes
	March	1.65	34.82	0.09	1.61	Yes	Yes
	April	1.09	31.78	0.08	1.56	Yes	Yes
	May	0.59	29.14	0.01	1.44	Yes	Yes
	June	1.62	28.11	0.07	1.43	Yes	Yes
	July	1.14	24.74	0.01	1.29	Yes	Yes
	August	2.39	24.93	0.06	1.20	Yes	Yes
	September	2.06	22.80	0.03	1.01	Yes	Yes
	October	1.36	21.89	0.01	0.95	Yes	Yes
	November	0.33	18.22	0.03	0.82	Yes	Yes
	December	0.90	15.80	0.18	0.89	Yes	Yes
2015	January	0.82	16.13	0.05	0.82	Yes	Yes
	February	0.92	14.86	0.05	0.67	Yes	Yes
	March	0.00	13.21	0.00	0.58	Yes	Yes
	April	0.00	12.11	0.00	0.49	Yes	Yes
	May	0.00	11.52	0.00	0.48	Yes	Yes
	June	0.00	9.91	0.00	0.41	Yes	Yes
	July	0.00	8.76	0.00	0.41	Yes	Yes
	August	0.00	6.38	0.00	0.35	Yes	Yes
	September	0.00	4.32	0.00	0.32	Yes	Yes
	October	0.00	2.96	0.00	0.31	Yes	Yes
	November	0.00	2.63	0.00	0.28	Yes	Yes
	December	0.00	1.73	0.00	0.09	Yes	Yes

Orthman Manufacturing, Inc. - South Plant

Date Painting Activities Commenced: **2015**

Permit Limits: **100.0** tons per year of VOC emissions
10.0 tons per year of HAP emissions

		Monthly VOC tons	Rolling Total VOC tons/yr	Monthly HAP tons	Rolling Total HAP tons/yr	Compliance with VOC permit limit?	Compliance with HAP permit limit?
2006	January	0.74	4.55	0.37	1.42	Yes	Yes
	February	0.63	4.72	0.30	1.6	Yes	Yes
	March	0.57	4.97	0.26	1.78	Yes	Yes
	April	0.25	4.92	0.11	1.8	Yes	Yes
	May	0.36	4.95	0.16	1.87	Yes	Yes
	June	0.18	5.05	0.09	1.94	Yes	Yes
	July	0.58	5.43	0.27	2.15	Yes	Yes
	August	0.7	5.77	0.33	2.38	Yes	Yes
	September	0.69	6.22	0.26	2.57	Yes	Yes
	October	0.66	6.56	0.32	2.81	Yes	Yes
	November	0.56	6.66	0.27	2.94	Yes	Yes
	December	0.91	7.18	0.43	3.27	Yes	Yes
2006	January	0.95	7.78	0.71	3.88	Yes	Yes
	February	0.83	12.69	0.62	4.13	Yes	Yes
	March	0.68	7.92	0.52	4.35	Yes	Yes
	April	0.45	7.8	0.33	4.42	Yes	Yes
	May	0.63	8.18	0.45	4.76	Yes	Yes
	June	0.26	8.08	0.18	4.78	Yes	Yes
	July	0.25	8.15	0.18	4.87	Yes	Yes
	August	0.47	8.04	0.35	4.95	Yes	Yes
	September	0.45	7.79	0.36	4.98	Yes	Yes
	October	0.7	7.8	0.35	5.07	Yes	Yes
	November	0.37	7.51	0.28	5.03	Yes	Yes
	December	0.56	7.51	0.44	5.2	Yes	Yes
2007	January	1.03	7.63	0.69	5.46	Yes	Yes
	February	0.93	7.61	0.60	5.36	Yes	Yes
	March	0.88	7.66	0.66	32.958199	Yes	No
	April	0.42	7.4	0.32	5.19	Yes	Yes
	May	0.5	7.45	0.36	5.22	Yes	Yes
	June	0.21	7.03	0.14	4.91	Yes	Yes
	July	0.26	7.03	0.19	4.92	Yes	Yes
	August	0.57	7.36	0.39	5.13	Yes	Yes
	September	1.22	8.1	0.89	5.67	Yes	Yes
	October	0.58	8.23	0.45	5.76	Yes	Yes
	November	0.73	8.26	0.58	5.99	Yes	Yes
	December	0.82	8.71	0.59	6.3	Yes	Yes
2008	January	0.89	9.04	0.64	6.50	Yes	Yes
	February	1.01	9.02	0.8	6.61	Yes	Yes
	March	0.95	9.04	0.48	6.49	Yes	Yes
	April	1.14	9.3	0.56	6.39	Yes	Yes
	May	1.31	10.19	0.74	6.81	Yes	Yes
	June	0.58	10.27	0.3	6.75	Yes	Yes
	July	0.82	10.88	0.32	6.93	Yes	Yes
	August	1.16	11.78	0.63	7.37	Yes	Yes
	September	0.82	12.03	0.58	7.56	Yes	Yes
	October	1.57	12.38	0.88	7.55	Yes	Yes
	November	0.63	12.43	0.49	7.59	Yes	Yes
	December	1.08	12.78	0.72	7.73	Yes	Yes
2009	January	0.68	0.68	0.14	0.14	Yes	Yes
	February	0.89	1.57	0.07	0.21	Yes	Yes
	March	1.52	3.09	0.13	0.34	Yes	Yes
	April	0.5	3.59	0.2	0.54	Yes	Yes
	May	0.46	4.05	0.03	0.57	Yes	Yes
	June	0.77	4.82	0.03	0.6	Yes	Yes
	July	0.38	5.2	0.02	0.62	Yes	Yes
	August	0.59	5.79	0.04	0.66	Yes	Yes
	September	0.88	6.67	0.07	0.73	Yes	Yes
	October	0.94	7.61	0.08	0.81	Yes	Yes
	November	1.07	8.68	0.08	0.89	Yes	Yes
	December	0.74	9.42	0.06	0.95	Yes	Yes
2010	January	0.94	9.68	0.8	1.61	Yes	Yes
	February	0.74	9.53	0.64	2.18	Yes	Yes
	March	0.47	8.48	0.26	2.31	Yes	Yes
	April	0.31	8.29	0.22	2.33	Yes	Yes
	May	0.87	8.7	0.66	2.96	Yes	Yes
	June	0.6	8.53	0.44	3.37	Yes	Yes
	July	0.53	8.68	0.47	3.82	Yes	Yes
	August	0.85	8.94	0.69	4.47	Yes	Yes
	September	0.72	8.78	0.56	4.96	Yes	Yes
	October	0.94	8.78	0.08	4.96	Yes	Yes
	November	1.07	8.78	0.08	4.96	Yes	Yes
	December	0.74	8.78	0.06	4.96	Yes	Yes
2011	January	0.77	8.61	1.04	5.2	Yes	Yes
	February	2	9.87	1.16	5.72	Yes	Yes
	March	1.05	10.45	0.81	6.27	Yes	Yes
	April	1.35	11.49	0.86	6.91	Yes	Yes
	May	1.94	12.56	1.02	7.27	Yes	Yes
	June	1.16	13.12	0.84	7.47	Yes	Yes
	July	1.71	14.3	0.01	7.01	Yes	Yes
	August	0.95	14.4	0.18	6.5	Yes	Yes
	September	0.61	14.29	0.58	6.82	Yes	Yes
	October	0.13	13.48	0.03	6.47	Yes	Yes
	November	0.43	12.84	0.01	6.4	Yes	Yes
	December	0.96	13.06	0.2	6.54	Yes	Yes
2012	January	2.84	15.13	0.85	6.35	Yes	Yes
	February	3.27	16.41	0.72	5.91	Yes	Yes
	March	2.60	17.96	0.67	5.77	Yes	Yes
	April	2.48	19.09	0.29	5.20	Yes	Yes
	May	2.65	19.80	0.47	4.66	Yes	Yes
	June	1.05	19.69	0.08	4.10	Yes	Yes
	July	2.27	20.25	0.56	4.65	Yes	Yes
	August	4.39	23.68	0.68	5.15	Yes	Yes
	September	2.22	25.29	0.73	5.30	Yes	Yes
	October	3.66	28.82	1.08	6.35	Yes	Yes
	November	2.74	31.13	0.95	7.29	Yes	Yes
	December	1.81	31.98	0.28	7.37	Yes	Yes
2013	January	1.67	30.81	-0.04	6.48	Yes	Yes
	February	2.91	30.44	0.07	5.83	Yes	Yes
	March	2.20	30.03	0.11	5.26	Yes	Yes
	April	1.06	28.62	0.06	5.03	Yes	Yes
	May	0.79	26.76	0.02	4.58	Yes	Yes
	June	1.49	27.20	0.06	4.57	Yes	Yes
	July	1.48	26.41	0.06	4.07	Yes	Yes
	August	2.00	24.03	0.07	3.46	Yes	Yes
	September	2.10	23.91	0.04	2.78	Yes	Yes
	October	2.08	22.34	0.04	1.74	Yes	Yes
	November	1.97	21.57	0.08	0.87	Yes	Yes
	December	2.65	22.41	0.09	0.67	Yes	Yes
2014	January	2.24	22.96	0.15	0.86	Yes	Yes
	February	1.40	21.48	0.06	0.86	Yes	Yes
	March	1.98	21.25	0.11	0.86	Yes	Yes
	April	1.27	21.46	0.03	0.83	Yes	Yes
	May	0.67	21.34	0.04	0.86	Yes	Yes
	June	0.76	20.61	0.02	0.81	Yes	Yes
	July	0.82	19.95	0.01	0.76	Yes	Yes
	August	2.02	19.97	0.07	0.76	Yes	Yes
	September	0.78	18.64	0.01	0.72	Yes	Yes
	October	0.78	17.34	0.02	0.70	Yes	Yes
	November	0.56	15.93	0.05	0.67	Yes	Yes
	December	0.00	13.28	0.00	0.59	Yes	Yes
2015	January	0.72	12.29	0.05	0.51	Yes	Yes
	February	0.52	10.89	0.02	0.44	Yes	Yes
	March	0.00	8.91	0.00	0.33	Yes	Yes
	April	0.00	7.64	0.00	0.30	Yes	Yes
	May	0.00	6.97	0.00	0.25	Yes	Yes
	June	0.00	6.21	0.00	0.23	Yes	Yes
	July	0.00	5.39	0.00	0.22	Yes	Yes
	August	0.00	3.37	0.00	0.15	Yes	Yes
	September	0.00	2.59	0.00	0.14	Yes	Yes
	October	0.00	1.81	0.00	0.12	Yes	Yes
	November	0.00	1.25	0.00	0.07	Yes	Yes
	December	0.00	1.25	0.00	0.07	Yes	Yes

Instructions: ***This sheet provides a rolling average of both VOC and HAP emissions to maintain permit compliance. Please insert VOC and HAP totals from the Monthly Calcs worksheet.***

November - starting to use the new Black dip paint

ATTACHMENT E

2014 HAP Content per Month IN TONS											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	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
0.06	0.05	0.01	0.03	0.01	0.05	0.00	0.05	0.02	0.00	0.01	0.02
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	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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	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	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	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	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	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	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	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	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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	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	0.07
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	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	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	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
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	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	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	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
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	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	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
0.09	0.10	0.06	0.05	0.00	0.02	0.00	0.01	0.00	0.00	0.02	0.09

0.17	0.15	0.09	0.08	0.01	0.07	0.01	0.06	0.03	0.01	0.03	0.18

ATTACHMENT F

						Individual HAPs						not HAP
Density of Product lbs/gal	Density of VOC lbs/gal	VOC % of Product	Total HAP % of Product	HAP lbs/gal of Product		Ethyl benzene	Toluene	Xylene	Methyl Isobutyl Ketone	Cumene	mek	acetone
7.03	7.03	100	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
6.61	6.61	100	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
11.1	2.88	26.06	0	0		0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	
12.35	3.25	25.98	3.59	0.45		1.0%	0.0%	1.0%	0.0%	0.0%	0.0%	
12.35	3.25	25.98	3.59	0.45		1.0%	0.0%	1.0%	0.0%	0.0%	0.0%	
6.84	6.81	100	0	0		1.0%	13.0%	7.0%	0.0%	0.0%	0.0%	
6.84	6.81	100	0	0		1.0%	13.0%	7.0%	0.0%	0.0%	0.0%	
8.6	3.77	47.05	1.75	0.15		0.0%	5.0%	1.0%	0.0%	0.0%	0.0%	5.0%
7.84	4.65	59.01	30.85	2.43		7.0%	1.0%	30.0%	0.0%	0.0%	0.1%	
7.84	4.65	59.01	30.85	2.43		7.0%	1.0%	30.0%	0.0%	0.0%	0.1%	
9.76	3.11	31.85	0	0		0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	
9.18	3.23	35.35	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9.18	3.23	35.35	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9.35	3.22	34.55	0	0		0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	
9.35	3.22	34.55	0	0		0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	
10.01	3.15	31.46	0	0		0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	
10.01	3.15	31.46	0	0		0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	
6.84	6.82	100	0	0		0.0%	30.0%	1.0%	0.0%	0.0%	0.0%	
6.84	6.82	100	0	0		0.0%	13.0%	0.0%	0.0%	0.0%	0.0%	
10.08	4.75	67	0	0		6.0%	0.0%	33.0%	0.0%	0.0%	0.0%	
9.18	1.83	20	0.11	0		5.0%	0.0%	1.0%	0.0%	1.0%	0.0%	
9.18	1.83	20	0.11	0		5.0%	0.0%	1.0%	0.0%	1.0%	0.0%	
9.18	3.05	35.35	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
12.52	3.25	25.99	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8.93	3.23	38.1	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8.93	3.23	38.1	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8.51	3.31	38.97	1.1	0.12		1.0%	0.0%	1.5%	0.0%	0.0%	0.0%	
7.93	4.51	56.84	43.33	3.45		10.0%	0.0%	40.0%	0.0%	0.0%	0.0%	
7.93	4.51	56.84	43.33	3.45		10.0%	0.0%	40.0%	0.0%	0.0%	0.0%	
9.51	4.38	45.74	35.65	3.36		7.0%	0.0%	30.0%	0.0%	0.0%	0.0%	
8.18	7.99	98.32	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
6.93	6.26	90	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8.6	3.26	38.05	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8.6	3.26	38.05	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
11.68	2.83	24.33	0	0		0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%
11.68	2.83	24.33	0	0		0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%
7.34	5.97	84.79	14.92	1.1		1.0%	7.0%	5.0%	0.0%	0.0%	0.0%	
6.84	6.31	98.6	4.68	0.32		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8.51	3	35.28	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
12.6	7.27	10	7.69	0.94		0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%
11.77	7.27	29	7.69	0.94		5.0%	0.0%	30.0%	0.0%	0.0%	0.0%	0.0%
10.1	3.34	47	3.36	0.88		0.3%	0.0%	1.3%	1.8%	0.0%	0.0%	
7.59	3.34	53	3.36	0.88		1.5%	0.0%	10.0%	0.0%	1.0%	0.0%	
59.5	0	0	0	0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
7.96	7.08	56.84	43.3	3.447		7.4%	0.0%	36.0%	0.0%	0.0%	0.1%	
			Not used in booth									

ATTACHMENT G

Material Safety Data Sheet

Date of issue 17 June 2012
Version 22

1. Product and company identification

Product name : 2K HI SOLIDS URETHANE PRIMER
Code : W43181A
Supplier : PPG Industries, Inc.
One PPG Place,
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)
Technical Phone Number : (740) 363-9610 (DELAWARE, OH) 8:00 a.m. - 5:00 p.m. EST

2. Hazards identification

Emergency overview : WARNING!

FLAMMABLE LIQUID AND VAPOR. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF ABSORBED THROUGH SKIN. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF INHALED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

Keep away from flames, such as a pilot light, and any object that sparks, such as an electric motor. Keep away from heat. Do not smoke. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : May be harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat.
Ingestion : Harmful or fatal if swallowed.
Skin : Toxic in contact with skin. Irritating to skin. May cause an allergic skin reaction.
Eyes : Irritating to eyes.

Over-exposure signs/symptoms

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications.

Medical conditions aggravated by over-exposure : Pre-existing skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
heptan-2-one	110-43-0	10 - 30
Limestone	1317-65-3	10 - 30
barium sulfate	7727-43-7	10 - 30
titanium dioxide	13463-67-7	7 - 13
silicon dioxide	7631-86-9	3 - 7
4-methylpentan-2-one	108-10-1	1 - 5
pentane-2,4-dione	123-54-6	1 - 5
Epoxy Resin (MW<=700)	25036-25-3	1 - 5
Silicic acid, calcium salt	1344-95-2	1 - 5
xylene	1330-20-7	0.1 - 1
Quartz (SiO2) (<10 microns)	14808-60-7	0.1 - 1
Kaolin	1332-58-7	0.1 - 1
ethylbenzene	100-41-4	0.1 - 1
Carbon black	1333-86-4	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
sulfur oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. Vapors are heavier than air and may spread along floors. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store above the following temperature: 120F / 49C.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	PPG

8 . Exposure controls/personal protection

heptan-2-one	TWA	50 ppm	100 ppm	25 ppm	50 ppm	Not established
	STEL	Not established	Not established	Not established	100 ppm	Not established
Limestone	TWA	Not established	5 mg/m³ R 15 mg/m³ TD	Not established	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established
barium sulfate	TWA	10 mg/m³	5 mg/m³ R 15 mg/m³ TD	10 mg/m³ TD	Not established	Not established
titanium dioxide	TWA	10 mg/m³	15 mg/m³ TD	10 mg/m³ TD	10 mg/m³ (as Ti)	Not established
	STEL	Not established	Not established	Not established	20 mg/m³ (as Ti)	Not established
silicon dioxide	TWA	Not established	Not established	Not established	10 mg/m³ 3 mg/m³ R	Not established
4-methylpentan-2-one	TWA	20 ppm	100 ppm	50 ppm	50 ppm	Not established
	STEL	75 ppm	Not established	75 ppm	75 ppm	Not established
pentane-2,4-dione	TWA	25 ppm S	Not established	Not established	Not established	20 ppm
Silicic acid, calcium salt	TWA	10 mg/m³	5 mg/m³ R 15 mg/m³ TD	10 mg/m³ TD	10 mg/m³	Not established
xylene	TWA	100 ppm	100 ppm	100 ppm	100 ppm	Not established
	STEL	150 ppm	Not established	150 ppm	150 ppm	Not established
Quartz (SiO2) (<10 microns)	TWA	0.025 mg/m³ R	10 mg/m³ R Z 30 mg/m³ TD Z 250 mppcf R Z	0.1 mg/m³ R	0.1 mg/m³ R	Not established
Kaolin	TWA	2 mg/m³ R	5 mg/m³ R 15 mg/m³ TD	2 mg/m³ R	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established
ethylbenzene	TWA	20 ppm	100 ppm	100 ppm	100 ppm	Not established
	STEL	Not established	Not established	125 ppm	125 ppm	Not established
Carbon black	TWA	3 mg/m³	3.5 mg/m³	3.5 mg/m³	3.5 mg/m³	Not established
	STEL	Not established	Not established	Not established	7 mg/m³	Not established

Key to abbreviations

A = Acceptable Maximum Peak

S = Potential skin absorption

8 . Exposure controls/personal protection

ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Safety glasses with side shields.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Respiratory : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: 32.78°C (91°F)

Explosion limits : Lower: 1.2%

Material supports combustion. : Yes.

Color : Not available.

Odor : Not available.

9 . Physical and chemical properties

pH	:	Not available.
Boiling/condensation point	:	>37.78°C (>100°F)
Melting/freezing point	:	Not available.
Specific gravity	:	1.48
Density (lbs / gal)	:	12.35
Vapor pressure	:	0.57 kPa (4.3 mm Hg) [room temperature]
Vapor density	:	Not available.
Volatility	:	46% (v/v), 25.98% (w/w)
Evaporation rate	:	0.52 (butyl acetate = 1)
Partition coefficient: n-octanol/water	:	Not available.
% Solid. (w/w)	:	74.02

10 . Stability and reactivity

Stability	:	Stable under recommended storage and handling conditions (see Section 7).
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Materials to avoid	:	Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
heptan-2-one	LD50 Oral	Rat	1.6 g/kg	-
	LD50 Dermal	Rabbit	10.206 g/kg	-
titanium dioxide	LD50 Oral	Rat	>10 g/kg	-
4-methylpentan-2-one	LD50 Oral	Rat	2.08 g/kg	-
	LC50 Inhalation Vapor	Rat	32772 mg/m3	4 hours
pentane-2,4-dione	LD50 Oral	Rat	55 mg/kg	-
	LD50 Dermal	Rabbit	787.4 mg/kg	-
	LC50 Inhalation Vapor	Rat	1225 ppm	4 hours
xylene	LD50 Oral	Rat	4.3 g/kg	-
	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
Kaolin	LD50 Oral	Rat	>5000 mg/kg	-
ethylbenzene	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LC50 Inhalation Vapor	Rat	4000 ppm	4 hours
Carbon black	LD50 Oral	Rat	>15400 mg/kg	-
	LD50 Dermal	Rabbit	>3 g/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Defatting irritant : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

11 . Toxicological information

Target organs : Contains material which causes damage to the following organs: mucous membranes, brain, upper respiratory tract, .
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, peripheral nervous system, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses, throat.

Carcinogenicity

Carcinogenicity : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
titanium dioxide	A4	2B	-	-
silicon dioxide	-	3	-	-
4-methylpentan-2-one	A3	2B	-	-
Silicic acid, calcium salt	A4	-	-	-
Quartz (SiO2) (<10 microns)	A2	1	Proven.	-
ethylbenzene	A3	2B	-	-
Carbon black	A3	2B	-	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B; 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
heptan-2-one	Acute LC50 131000 to 137000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
barium sulfate	Acute EC50 32000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
4-methylpentan-2-one	Acute LC50 505000 to 514000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
pentane-2,4-dione	Acute LC50 60100 to 71800 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	Acute LC50 47600 to 52100 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
xylene	Acute LC50 3300 to 4093 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
ethylbenzene	Acute LC50 4200 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	Acute LC50 5100 to 5700 ug/L Marine water	Fish - Atlantic silverside - Menidia menidia	96 hours
	Acute EC50 2930 to 4400 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Chronic NOEC 3300 ug/L Marine water	Fish - Atlantic silverside - Menidia menidia	96 hours

12 . Ecological information

	Chronic NOEC 6800 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	1263	PAINT	3	III	-
IMDG	1263	PAINT	3	III	-
DOT	1263	PAINT	3	III	Reportable quantity 11364.9 lbs / 5159.6 kg [921.28 gal / 3487.4 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: 4-methylpentan-2-one: 5000 lbs. (2270 kg); ethylbenzene: 1000 lbs. (454 kg); xylene: 100 lbs. (45.4 kg);

15 . Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.
Australia inventory (AICS) : At least one component is not listed.
Canada inventory (DSL) : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : At least one component is not listed.
Korea inventory (KECI) : At least one component is not listed.
New Zealand (NZIoC) : At least one component is not listed.
Philippines inventory (PICCS) : At least one component is not listed.

United States

U.S. Federal regulations :

15 . Regulatory information

United States - TSCA 5(a)2 - Proposed significant new use rules:
pentane-2,4-dione Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: 4-methylpentan-2-one; heptan-2-one; titanium dioxide; pentane-2, 4-dione; Silicic acid, calcium salt; Limestone; barium sulfate
CERCLA: Hazardous substances.: 4-methylpentan-2-one: 5000 lbs. (2270 kg); ethylbenzene: 1000 lbs. (454 kg); xylene: 100 lbs. (45.4 kg);

SARA 311/312 MSDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
heptan-2-one	110-43-0	Y	N	Y	N	N
Limestone	1317-65-3	N	N	N	N	N
barium sulfate	7727-43-7	N	N	N	N	N
titanium dioxide	13463-67-7	N	Y	N	N	N
silicon dioxide	7631-86-9	N	N	N	N	N
4-methylpentan-2-one	108-10-1	Y	Y	Y	N	N
pentane-2,4-dione	123-54-6	Y	N	Y	N	N
Epoxy Resin (MW<=700)	25036-25-3	Y	N	N	N	N
Silicic acid, calcium salt	1344-95-2	N	N	N	N	N
Quartz (SiO2) (<10 microns)	14808-60-7	N	Y	N	N	N
ethylbenzene	100-41-4	Y	Y	Y	N	N
Carbon black	1333-86-4	N	Y	N	N	N
Product as-supplied :		Y	Y	Y	N	N

SARA 313	Chemical name	CAS number	Concentration
Supplier notification :	4-methylpentan-2-one	108-10-1	1 - 5
	ethylbenzene	100-41-4	0.1 - 1

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Canada

WHMIS (Canada) : Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). Class D-1A: Material causing immediate and serious toxic effects (Very toxic). Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 3 **Health** : 3 **Reactivity** : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 3 **Physical hazards** : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

16 . Other information

Health : 3 **Flammability** : 3 **Instability** : 0

Date of previous issue : **5/15/2011.**

Organization that prepared the MSDS : EHS

☑ **Indicates information that has changed from previously issued version.**

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

ATTACHMENT H

PPG INDUSTRIES, INC.

Environmental Data Sheet

Friday, October 26, 2012

Customer: PPG TrueFinish Industrial Coatings
5500 Corporate Drive; Suite 500
Pittsburgh Pa 15237

PRODUCT: W43181A 2K LT. GRAY URETHANE PRIMER

PRODUCT PHYSICAL CHARACTERISTICS:

WEIGHT PER GALLON:		12.53 lbs/gal
DENSITY OF ORGANIC SOLVENT BLEND:		6.95 lbs/gal
	Weight	Volume
NON-VOLATILE:	73.97 %	53.10 %
VOLATILE:	26.03 %	46.90 %
PERCENT OF WATER:	0.09 %	0.14 %
PERCENT OF EXEMPTS:	0.00 %	0.00 %

VOC INFORMATION:

VOC/GAL LESS WATER (LESS EXEMPTS):	3.26 lbs/gal	390.55 g/ltr
ACTUAL VOC/GAL (WITH WATER WITH EXEMPTS):	3.26 lbs/gal	390.55 g/ltr
VOC PER GALLON OF SOLIDS:	6.14 lbs/gal	735.57 g/ltr
VOC PER POUND OF SOLIDS:	0.35 lb/lb	

*Product is **not** photochemically reactive as per SCAQMD rule 102*
SOLVENT BLEND COMPOSITION PER CLASSIFICATION: I = 0 II = 4 III = 14 IV = 18

VOLATILE COMPOSITION: PERCENT OF TOTAL FORMULA:

CAS #	Composition	Weight	Volume
110-43-0	HEPTAN-2-ONE	18.11	33.37
108-10-1	4-METHYLPENTAN-2-ONE / METHYL ISOBU	3.41	6.38
123-54-6	PENTANE-2;4-DIONE / ACETYLACETONE	3.07	4.72
1330-20-7	XYLENES	0.85	1.47
64742-95-6	SOLVENT NAPHTHA (PETROLEUM), LIGHT	0.24	0.41
108-65-6	1-METHOXY-2-PROPYL ACETATE	0.24	0.38
100-41-4	ETHYLBENZENE	0.16	0.28

PPG INDUSTRIES, INC.

Environmental Data Sheet

Friday, October 26, 2012

PRODUCT: W43181A 2K LT. GRAY URETHANE PRIMER

REGULATORY INFORMATION BASED ON 1 GALLON SUPPLIED:

CAS #	Composition	LBS	KGS	HAPS	SARA
100-41-4	ETHYLBENZENE	0.02	0.01	Yes	Yes
108-10-1	4-METHYLPENTAN-2-ONE / METHYL ISOBU	0.43	0.20	Yes	Yes

POUND OF ORGANIC HAPS PER POUND OF SOLIDS: 0.048
POUND OF ORGANIC HAPS PER GALLON OF SOLIDS: 0.842
POUND OF ORGANIC HAPS PER GALLON OF PRODUCT: 0.447
PERCENT OF ORGANIC HAPS (VHAP): 3.57 %

DISCLAIMER

This Environmental Data Sheet is not intended to replace the product's Material Safety Data Sheet.

The data contained in this Environmental Data Sheet is based on information provided to PPG by its suppliers and PPG's knowledge of PPG product formulations. PPG makes no representation or warranty regarding the accuracy of supplier furnished information or that this information or data will not change.

The information in this Environmental Data Sheet is not intended to and does not create legal rights or obligations. This information is provided for the sole use of PPG customers and is not for disclosure to competitors of PPG. PPG customers have an independent obligation to determine proper use of the information and that their use of the information is consistent with federal, state and local laws, rules and regulations.

Trace constituents present at levels less than 0.01 LBS or KLGS are not included in the Regulatory Information section of this Environmental Data Sheet. Volatile HAPS present at levels less than 0.1% by weight for carcinogens and 1.0% for non-carcinogens will not be shown or will be indicated by a "No" in the Regulatory Section (under HAPS) of this Environmental Data Sheet.

Trace volatiles present at levels less than 0.1% by weight are not included in the Volatile Section of this Environmental Data Sheet.

Chemical compounds generated as a result of the curing process of this coating are not included on this Environmental Data Sheet.

The USEPA listing of VOC exempt compounds [40CFR51.000(s)] is used in calculating VOC values.

ATTACHMENT I

METER #	BILLING DATE	DAYS	METER USAGE	USAGE FACTOR	BILLED USAGE
104160	1/28/14	32	11404	1.332	15190
	2/25/14	29	12330	1.322	16300
	3/27/14	28	8103	1.339	10850
	5/21/14	29	3529	1.339	4725
	5/28/14	34	1643	1.339	2200
	6/26/14	30	764	1.339	1023
	7/28/14	29	413	1.339	553
	8/27/14	32	472	1.355	640
	11/1/14	31	627	1.344	843
	11/1/14	28	3517	1.335	4695
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
					AVERAGE USAGE
	METER			AVG FACTOR	5184
TOTALS	104160	302	42802	1.115	57019.059

METER #	BILLING DATE	DAYS	METER USAGE	USAGE FACTOR	BILLED USAGE
109593	1/28/14	32	15300	2.052	31396
	2/27/14	29	15310	2.037	31186
	3/27/14	28	13749	2.062	28350
	4/25/14	30	8468	2.062	17461
	5/28/14	33	4026	2.062	8302
	6/26/14	30	1542	2.062	3180
	7/28/14	29	2084	2.062	4297
	8/27/14	32	2560	2.087	5343
	9/25/14	29	3164	2.101	6648
	10/24/14	30	611	2.101	1284
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
					AVERAGE USAGE
	METER			AVG FACTOR	12495
TOTALS	109593	302	66814	1.724	137445.943

METER #	BILLING DATE	DAYS	METER USAGE	USAGE FACTOR	BILLED USAGE
108525	1/28/14	32	52	0.990	51
	2/27/14	29	37	0.983	36
	3/27/14	28	21	0.995	21
	4/25/14	30	16	0.995	16
	5/28/14	33	18	0.995	18
	6/26/14	29	16	0.995	16
	7/28/14	30	15	0.995	15
	8/27/14	32	15	1.007	15
	9/25/14	29	14	1.013	14
	10/27/14	30	14	1.013	14
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
					AVERAGE USAGE
	METER			AVG FACTOR	20
TOTALS	108525	302	218	0.832	216.89

METER #	BILLING DATE	DAYS	METER USAGE	USAGE FACTOR	BILLED USAGE
556903	1/28/14	32	355	0.990	351
	2/26/14	29	328	0.983	322
	3/27/14	28	222	0.995	221
	5/21/14	29	95	0.995	95
	5/28/14	34	48	0.995	48
	6/26/14	30	0	0.995	0
	7/28/14	29	0	0.995	0
	8/27/14	32	0	1.007	0
	11/1/14	31	0	0.998	0
	11/1/14	28	4	0.992	4
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
					AVERAGE USAGE
	METER			AVG FACTOR	95
TOTALS	556903	302	1052	0.829	1041.017

METER #	BILLING DATE	DAYS	METER USAGE	USAGE FACTOR	BILLED USAGE
291472	1/28/14	32	205	0.990	203
	2/27/14	29	199	0.983	196
	3/27/14	28	159	0.995	158
	4/25/14	30	105	0.995	104
	5/30/14	34	49	0.995	49
	6/30/14	29	14	0.995	14
	no	0	0	0.000	0
	8/27/14	26	12	1.010	12
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
	1/0/00	0	0	0.000	0
					AVERAGE USAGE
	METER			AVG FACTOR	67
TOTALS	291472	208	743	0.580	736.052

METER #	BILLING DATE	DAYS	METER USAGE	USAGE FACTOR	BILLED USAGE
557718	1/28/14	32	345	1.692	584
	2/27/14	29	278	1.679	467
	3/27/14	28	214	1.700	364
	4/25/14	29	152	1.700	258
	5/28/14	34	46	1.700	78
	6/30/14	30	0	1.700	0
	7/30/14	32	0	1.700	0
	8/29/14	30	0	1.724	0
	9/25/14	28	0	1.732	0
	1/0/00	33	115	1.732	199
	11/27/14	32	253	0.000	0
	1/0/00	0	0	0.000	0
					AVERAGE USAGE
	METER			AVG FACTOR	177
TOTALS	557718	337	1403	1.422	1950.082

ATTACHMENT J

Single - Head Flame Cutter (EP2) - Hours Only

Facility: North Plant

Month: April Year:

DATE	TIME	HOURS Ran Today	HOURS Ran Today	HOURS Ran Today	Check if no action required this day	Describe Routine Maintenance & Preventive Maintenance	Observations of equipment not performing	Corrective actions taken for equipment not performing	Full Signature	Full Signature	Full Signature
1	11	5hrs									
2	1:30	3hrs									
3	2:00	2½hrs									
4	6										
5	DID NOT USE										
6	DID NOT USE										
7	7		4								
8	7AM	10 AM	3								
9	DID NOT USE										
10	8:45		6								
11											
12	DID NOT USE										
13	DID NOT USE										
14	7:30	4.15									
15	DID NOT USE										
16	8:45		8								
17	6AM	5.3									
18	DID NOT USE										
19	DID NOT USE										
20	DID NOT USE										
21	6AM		10								
22	6AM		10								
23	6AM		10								
24	6AM										
25	DID NOT USE										
26	DID NOT USE										
27	DID NOT USE										
28											
29	DID NOT USE										
30	DID NOT USE										
31											

Place a check in the third column if you did not make any corrections or see any conditions of equipment not working. If you did not run the equipment on that particular day, leave the line completely blank - no signature required.

Turn in to EHS when full EACH MONTH.

ATTACHMENT K

Wheelabrator / Shotblaster (EP3) - Cyclone Only

Facility: North Plant

Month Jan. 2 Year 2015

DATE	TIME	Check if no action required this day	Describe Routine Maintenance & Preventive Maintenance	Observations of equipment not performing	Corrective actions taken for equipment not performing	Full Signature (must sign even when no action taken)
1	6:00	✓				
2						
3						
4						
5	1:45	✓				
6	12:00 PM	✓				
7						
8						
9	3:30	✓				
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Place a check in the third column if you did not make any corrections or see any conditions of equipment not working. If you did not run the equipment on that particular day, leave the line completely blank - no signature required.

Turn in to EHS when full EACH MONTH.

ATTACHMENT L

DAILY AIR FLOW MONITOR READINGS FOR THE PAINT BOOTH

(North / South / InterMotion)

Month APRIL PRIMER EAST Year 2015 ~~2014~~ Facility: North NORTH

DATE	TIME	AIR FLOW Reading - (fpm)	Time and TYPE of Filter Replaced	Observations and corrective actions for issues	Full Signature	DATE	TIME	AIR FLOW Reading - (fpm)	Time and TYPE of Filter Replaced	Observations and corrective actions for issues	Full Signature
1	AM 7:12	.10	new filters		Jairo Garcia	16	AM 6:27	.7			Jairo Garcia
2	AM 6:40	.8			Jairo Garcia	17					
3	AM 8:21	.10			Jairo Garcia	18					
4						19					
5						20	AM 7:46	.10			Jairo Garcia
6	AM 7:09	.8	new filters		Jairo Garcia	21	AM 6:52	.8	new filters		Jairo Garcia
7	AM 8:32	.9			Jairo Garcia	22	AM 6:42	.11			Jairo Garcia
8	AM 6:45	.11			Jairo Garcia	23	AM 6:51	.12			Jairo Garcia
9	AM 7:06	.9	new filters		Jairo Garcia	24	AM 8:20	.7	DOBLE new filters		Jairo Garcia
10						25					
11						26					
12						27	AM 7:21	.7			Jairo Garcia
13	AM 8:22	.11			Jairo Garcia	28	AM 8:16	.9			Jairo Garcia
14	AM 6:15	.11			Jairo Garcia	29	AM 10:15	.11			Jairo Garcia
15	AM 8:95	.9	new filters		Jairo Garcia	30	AM 8:13	.6	new filters		Jairo Garcia
						31					

Enter "NR" - when you did not run the unit that day.

Turn in to EHS when full EACH MONTH.

If Monitor Reading Is Below 100 fpm, Contact the EHS Dept. and service the ventilation system.

Record filter changes and what type of filter was installed.

NOTE: Clean, bag, date and sign the respirators used during painting.

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

JAN 1 1 2016

Mr. Kevin Blansett
Quaker Window Products Company
PO Box 128
Freeburg, MO 65035

Re: Quaker Window Products Company, 151-0050
Permit Number: OP2015-042

Dear Mr. Blansett:

Enclosed with this letter is your intermediate operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty (30) days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If you send your appeal by registered or certified mail, we will deem it filed on the date you mailed it. If you send your appeal by a method other than registered or certified mail, we will deem it filed on the date the AHC receives it.

If you have any questions or need additional information regarding this permit, please contact the Air Pollution Control Program at (573) 751-4817, or you may write to the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS/jrl

Enclosures

c: PAMS File: 2014-08-019

Missouri Department of Natural Resources
Air Pollution Control Program

INTERMEDIATE STATE PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

Intermediate Operating Permit Number: OP2015-042
Expiration Date: JAN 1 1 2021
Installation ID: 151-0050
Project Number: 2014-08-019

Installation Name and Address
Quaker Window Products Company
504 Highway 63 South
Freeburg, MO 65035
Osage County

Installation Description:
Quaker Window Products Company is located in Freeburg, Missouri. The installation manufactures aluminum, vinyl, and wood windows and doors.

The installation has accepted voluntary limitations on the emissions of Hazardous Air Pollutants (HAPs) and Volatile Organic Compounds (VOCs) to qualify for this Intermediate Operating Permit.

Jacob R. Robinett
Prepared by:
Jacob Robinett
Operating Permit Unit

Kyra L Moore
Director or Designee
Department of Natural Resources

JAN 1 1 2016
Effective Date

Table of Contents

I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

Quaker Window Products Company operates a door and window production facility in Freeburg, Missouri located in Osage County. The installation produces aluminum, vinyl, and wood frames and assembles them for sale. The installation is currently operating under Intermediate Operating Permit OP2010-026A. The facility is not a named source.

The facility is made up of seven different buildings used for different production practices. In Building 1 the facility trims painted aluminum and assembles aluminum windows and doors. Vinyl window frames are also painted in Building 1. In Buildings 2 and 4 the facility trims the painted vinyl window frames and assembles the vinyl windows. The facility also trims aluminum and assembles storm windows and doors in these buildings. In Building 4 aluminum is also cut for screen windows. The facility trims, paints, and assembles wood windows in Building 3 and trims aluminum for wood windows. In Building 5 the facility constructs wood packing crates, pack windows, and ship products. In Building 4 the facility cuts painted aluminum pieces that are for screen windows. . In Building 7 the facility washes and powder coats aluminum to be used for manufacturing of windows and doors. Building 7 also contains the pyrolysis furnace that is used for removing the powder coating off of the paint hooks.

The installation has accepted voluntary limitations on the emissions of Hazardous Air Pollutants (HAPs) and Volatile Organic Compounds (VOCs) to qualify for this Intermediate Operating Permit.

Reported Air Pollutant Emissions, tons per year					
Pollutants	2013	2012	2011	2010	2009
Particulate Matter ≤ Ten Microns (PM_{10})	3.05	0.59	0.48	0.17	0.17
Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)	2.39	0.57	-	0.0007	0.0003
Sulfur Oxides (SO_x)	0.001	-	-	0.0009	0.0009
Nitrogen Oxides (NO_x)	1.31	-	-	0.85	0.85
Volatile Organic Compounds(VOC)	25.59	18.37	12.81	11.40	11.40
Carbon Monoxide (CO)	0.76	-	-	0.49	0.49
Hazardous Air Pollutants (HAPs)	0.06	-	-	-	-

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations.

Emission Unit #	Description of Emission Unit
Building #1 - Vinyl	
EP-02A	Vinyl Paint Booth, Colmet Booth CP-480-3P-5-2F, constructed 2012, MHDR 11 gallons/hr
*EP-13B	IR Building Heating System – Propane, MHDR 6.5 MMBtu/hr
EP-41E	Vinyl Cure Oven, SBS, constructed 1988, MHDR 2.68 MMBtu/hr
Building #3 - Wood	
EP-17	Wood Cutting, Disa, MHDR 0.0045 tons/hr
*EP-13B	IR Building Heating System – Propane, MHDR 6.5 MMBtu/hr
EP-29	PM emissions for wood cutting
Building #5 - Packing and Shipping	
*EP-13B	IR Building Heating System – Propane, MHDR 6.5 MMBtu/hr
EP-36	Packing and Shipping
Building #6 - Aluminum	
EP-06	Aluminum Cutting
*EP-13B	IR Building Heating System – Propane, MHDR 6.5 MMBtu/hr
EP-35	Aluminum Trimming
Building #7 - Paint	
*EP-13B	IR Building Heating System – Propane, MHDR 6.5 MMBtu/hr
EP-32	Debridge, Azon 78-0857/MK-000002, constructed 2007, MHDR 4 tons/hr
EP-40	Pyrolysis Furnace/Paint Hook Burn off oven, constructed 2012, propane, MHDR 0.778 MMBtu/hr, Global Finishing Systems BBO-060706/U22993A
EP-41B	Dry off oven, Colmet W.O. # 40564B, constructed 2012, MHDR 2.68 MMBtu/hr
EP-41D	Make-Up Air System, Airedale QDB125JC2200DB1NG6B12YJ760625, Constructed 2012, MHDR 2.12 MMBtu/hr
EP-43	Debridge, Azon 30/28-0612-28, constructed 2012, MHDR 4 tons/hr
Tanks Area	
EP-12A	Fuel Tanks, 500 gallons (Unleaded gasoline)

*Individual units have been grouped under one emission unit number

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance.

Description of Emission Source	
Building #1 – Upper Aluminum (light commercial)	
*EP-16	Cold Cleaning of Window Parts
*EP-20	Sealant Usage
*EP-27	Drilling/Grinding/Punch Press
*EP-28	Welders & Acetylene/O_2 Metal Cutting Die Shop & Garage
*EP-46	Miscellaneous Maintenance Activities – Degreasing Unit Garage
*EP-50	Hand Tool Usage
Building #2 – Vinyl (Bldg 2 & 4)	
*EP-16	Cold Cleaning of Window Parts
*EP-18	Vinyl Cutting and Vinyl Welding
*EP-20	Sealant Usage
*EP-27	Drilling/Grinding/Punch Press
Building #3 - Wood	
*EP-20	Sealant Usage
EP-25	Make-Up Air System for Wood Paint Booth, Weather-Rite TOT221HHL/53981, MHDR 2.43 MMBtu/hr
Building #4 – Vinyl (Bldg 2 & 4)	
*EP-16	Cold Cleaning of Window Parts
*EP-18	Vinyl Cutting and Vinyl Welding
EP-19	PVC Cement Usage
*EP-20	Sealant Usage
*EP-27	Drilling/Grinding/Punch Press
Building #6 – Lower Aluminum (heavy commercial)	
*EP-16	Cold Cleaning of Window Parts
*EP-20	Sealant Usage
*EP-27	Drilling/Grinding/Punch Press
Building #7 - Paint	
EP31A	Thermal Fill, Azon 78-0857/MK-000001, constructed 2007, MHDR 4 tons/hr
EP-31B	Thermal Fill Flush, Azon 78-0857/MK-000001, constructed 2007, MHDR 4 tons/hr
EP-41A	5-Stage Wash System, Colmet W.O. #40564C, constructed 2012, MHDR 2.22 MMBtu/hr
EP-41C	Powder Cure Oven with Infrared, Colmet W.O. #40564A, constructed 2012, MHDR 5.05 MMBtu/hr
EP-42	Thermal Fill, Azon 53350/52-0312, constructed 2012, MHDR 105 gallons/hr
EP-44	Thermal Fill Flush, Azon, MHDR 0.9375 gallons/hr
EP- 48	pH Neutralization System
EP-49	Electric IR Gel Oven
EP-51	Spray Paint Can Paint Filler

EP-52	Powder Coating Paint Booth

Garage

*EP-28	Welders & Acetylene/O_2 Metal Cutting
*EP-46	Miscellaneous Maintenance Activities – Degreasing Unit
*EP-50	Hand Tool Usage

Tanks Area

EP-12B	Fuel Tanks, 12,000 gallons (Diesel)
EP-21	Propane Tanks

Miscellaneous Emission Units

EP-47	Paved Haul Roads

*Individual units have been grouped under one emission unit number

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The plant wide conditions apply to all emission units at this installation. All emission units are listed in Section I under Emission Units with Limitations or Emission Units without Limitations.

PERMIT CONDITION PW001

10 CSR 10-6.060 Construction Permits Required
10 CSR 10-6.065 Voluntary Limitation
Construction Permit #102012-014, Issued October 24, 2012
This plant-wide permit condition applies to all emission sources located at this facility including units that are listed as Emission Units without Limitations.

Emission Limitation:
The permittee shall emit less than 100.0 tons of Volatile Organic Compounds (VOC) in any consecutive 12-month period from the entire installation.

Monitoring/Recordkeeping:
1. Attachment A through I or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with the emission limit. All products containing the VOC used in the entire installation must be recorded. [Special Condition #2.D.]
2. The permittee shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.

Reporting:
1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the recordkeeping shows that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

PERMIT CONDITION PW002

10 CSR 10-6.060 Construction Permits Required
Construction Permit #102012-014, Issued October 24, 2012
This plant-wide permit condition applies to all emission sources located at this facility including units that are listed as Emission Units without Limitations.

Emission Limitation:
1. The permittee shall emit less than 25.0 tons of combined HAPs in any consecutive 12-month period from the entire installation. [Special Condition #2.B.]
2. The permittee shall not emit individual HAPs in excess of the values provided in Table 1 in any consecutive 12-month period. [Special Condition #2.C.]

Operational Limitation:

The permittee shall keep all paints, solvents, cleaning solutions in sealed containers whenever the materials are not in use. The permittee shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and cleaning solution containers used with the equipment. [Special Condition #8.A.]

Table 1: Individual HAP Emission Limitations

HAP Name	CAS Number	Emission Limitation (tons per year)
Cumene	98-82-8	10.0
Ethylbenzene	100-41-4	10.0
Ethylene Glycol	107-21-1	10.0
Formaldehyde	50-00-0	2.0
Glycol Ethers	20-10-0	5.0
Hydrogen Fluoride	7664-39-3	0.10
MDI	101-68-8	0.10
Methanol	67-56-1	10.0
MIBK	108-10-1	10.0
Naphthalene	91-20-3	10.0
Toluene	108-88-3	10.0
Xylene	1330-20-7	10.0
Other Individual HAPs		10.0

Monitoring/Recordkeeping:

1. Attachments A through I or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with the emission limit. All products containing the HAP used in the entire installation must be recorded. [Special Condition #2.D.]
2. The permittee shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION PW003

10 CSR 10-6.060 Construction Permits Required
Construction Permit #102012-014, Issued October 24, 2012

This plant-wide permit condition applies to all emission sources located at this facility including units that are listed as Emission Units without Limitations.

Emission Limitation:

The permittee shall emit less than 15.0 tons of PM_{10} in any consecutive 12-month period from the entire installation. [Special Condition #3.A.]

Monitoring/Recordkeeping:

1. Attachments A through I or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with the emission limit. [Special Condition #3.B.]
2. The permittee shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION PW004

10 CSR 10-6.060 Construction Permits Required
Construction Permit #102012-014, Issued October 24, 2012

Operational Limitation:

1. Maintenance and/or repair of the road surface shall be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from the paved haul road while the plant is operating. [Special Condition #4.B.]
2. The permittee shall periodically water, wash, and/or otherwise clean all of the paved portions of the haul road(s) as necessary to achieve control of fugitive emissions from the paved haul road while the plant is operating. [Special Condition #4.C.]

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

Building 1 - Vinyl

PERMIT CONDITION 001
10 CSR 10-6.060 Construction Permits Required
Construction Permit #102012-014, Issued October 24, 2012

Control Devices – Fabric Filters	
Emission Unit	Description
EP-02A	Vinyl Paint Booth

Operational Limitation:

1. The permittee shall control emissions from EP-02A Vinyl Paint Booth using fabric filters. [Special Condition #5.B.]
2. The fabric filters shall be operated and maintained in accordance with the manufacturer's specifications. The manufacturer's specifications shall be retained onsite. The dust collectors and fabric filters 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. [Special Condition #5.C.]
3. Replacement filters for the 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). [Special Condition #5.D]

Monitoring/Recordkeeping:

1. The permittee shall monitor and record the operating pressure drop across the dust collectors and fabric filters at least once every 24 hours using Attachment N or equivalent forms approved by the Air Pollution Control Program. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty. [Special Condition #5.E.]
2. The permittee shall maintain an operating and maintenance log using Attachment M or an equivalent form approved by the Air Pollution Control Program for the dust collectors and fabric filters which shall include the following: [Special Condition #5.F.]
    a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).

2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 002 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants	
Emission Unit	Description
EP-02A	Vinyl Paint Booth

Emission Limitation:
1. The permittee shall not cause or permit to be discharged into the atmosphere from any source any visible emissions with opacity greater than twenty percent (20%).
2. Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any sixty (60) minutes air contaminants with an opacity up to sixty percent (60%).

Monitoring/Recordkeeping:
Permittee shall conduct monitoring and recordkeeping in accordance with 10 CSR 10-6.220 as detailed in Section IV.

Reporting:
1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 003 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants	
Emission Unit	Description
EP-13	IR Building Heating System
EP-41E	Vinyl Cure Oven

Emission Limitation:
1. The permittee shall not cause or permit to be discharged into the atmosphere from any source any visible emissions with opacity greater than twenty percent (20%).
2. Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any sixty (60) minutes air contaminants with an opacity up to sixty percent (60%).

Monitoring/Recordkeeping:
None, see Statement of Basis.

Reporting:
None, see Statement of Basis.

Building #3 – Wood

PERMIT CONDITION 004 10 CSR 10-6.060 Construction Permits Required Construction Permit #102012-014, Issued October 24, 2012	
Control Devices – Fabric Filters	
Emission Unit	Description
EP-17	Wood Cutting

Operational Limitation:

1. The permittee shall control emissions from EP-17 Wood Cutting using fabric filters. [Special Condition #5.B.]
2. The fabric filters shall be operated and maintained in accordance with the manufacturer's specifications. The manufacturer's specifications shall be retained onsite. The dust collectors and fabric filters 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. [Special Condition #5.C.]
3. Replacement filters for the 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). [Special Condition #5.D]

Monitoring/Recordkeeping:

1. The permittee shall monitor and record the operating pressure drop across the dust collectors and fabric filters at least once every 24 hours using Attachment N or equivalent forms approved by the Air Pollution Control Program. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty. [Special Condition #5.E.]
2. The permittee shall maintain an operating and maintenance log using Attachment M or an equivalent form approved by the Air Pollution Control Program for the dust collectors and fabric filters which shall include the following: [Special Condition #5.F.]
    a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 005 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants	
Emission Unit	Description
EP-13	IR Building Heating System
EP-29	PM emissions for wood cutting

Emission Limitation:

1. The permittee shall not cause or permit to be discharged into the atmosphere from any source any visible emissions with opacity greater than twenty percent (20%).
2. Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any sixty (60) minutes air contaminants with an opacity up to sixty percent (60%).

Monitoring/Recordkeeping:

None, see Statement of Basis.

Reporting:

None, see Statement of Basis.

Building #5 – Packing and Shipping

PERMIT CONDITION 006 10 CSR 10-6.060 Construction Permits Required Construction Permit #102012-014, Issued October 24, 2012	
Control Devices – Fabric Filters	
Emission Unit	Description
EP-36	Packing and Shipping

Operational Limitation:

1. The permittee shall control emissions from EP-36 Packing and Shipping using fabric filters. [Special Condition #5.B.]
2. The fabric filters shall be operated and maintained in accordance with the manufacturer's specifications. The manufacturer's specifications shall be retained onsite. The dust collectors and fabric filters 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. [Special Condition #5.C.]
3. Replacement 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). [Special Condition #5.D]

Monitoring/Recordkeeping:

1. The permittee shall monitor and record the operating pressure drop across the dust collectors and fabric filters at least once every 24 hours using Attachment N or equivalent forms approved by the Air Pollution Control Program. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty. [Special Condition #5.E.]

2. The permittee shall maintain an operating and maintenance log using Attachment M or an equivalent form approved by the Air Pollution Control Program for the dust collectors and fabric filters which shall include the following: [Special Condition #5.F.]
    a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

Building #6 - Aluminum

PERMIT CONDITION 007 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants	
Emission Unit	Description
EP-06	Aluminum Cutting

Emission Limitation:

1. The permittee shall not cause or permit to be discharged into the atmosphere from any source any visible emissions with opacity greater than twenty percent (20%).
2. Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any sixty (60) minutes air contaminants with an opacity up to sixty percent (60%).

Monitoring/Recordkeeping:

Permittee shall conduct monitoring and recordkeeping in accordance with 10 CSR 10-6.220 as detailed in Section IV.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 008

10 CSR 10-6.060 Construction Permits Required
Construction Permit #102012-014, Issued October 24, 2012

Control Devices – Dust Collectors	
Emission Unit	Description
EP-35	Aluminum Trimming

Operational Limitation:

1. The permittee shall control emissions from EP-35 Aluminum Trimming using dust collectors. [Special Condition #5.A.]
2. The dust collectors shall be operated and maintained in accordance with the manufacturer's specifications. The manufacturer's specifications shall be retained onsite. The dust collectors and fabric filters 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. [Special Condition #5.C.]
3. Replacement filters for the dust collectors 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). [Special Condition #5.D]

Monitoring/Recordkeeping:

1. The permittee shall monitor and record the operating pressure drop across the dust collectors and fabric filters at least once every 24 hours using Attachment N or equivalent forms approved by the Air Pollution Control Program. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty. [Special Condition #5.E.]
2. The permittee shall maintain an operating and maintenance log using Attachment M or an equivalent form approved by the Air Pollution Control Program for the dust collectors and fabric filters which shall include the following: [Special Condition #5.F.]
    a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

Building #7 - Paint

PERMIT CONDITION 009

10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*
10 CSR 10-6.060 Construction Permits Required
Construction Permit #102012-014, Issued October 24, 2012

Control Device – Cyclone with Fabric Sock	
Emission Unit	Description
EP-32	Debridge
EP-43	Debridge

Emission Limitation:

1. The permittee shall not emit particulate matter in excess of 2.22 lbs/hr from EP-32.
2. The permittee shall not emit particulate matter in excess of 3.22 lbs/hr from EP-43.

Operational Limitation:

1. The permittee shall control emission from the following emission units using cyclone fitted with a fabric sock: [Special Condition #6.A.]
   a) EP-32 Debridge
   b) EP-43 Debridge
2. The cyclone fitted with a fabric sock shall be operated and maintained in accordance with the manufacturer's specifications. The manufacturer's specifications shall be retained onsite. [Special Condition #6.B.]
3. Replacement filters for the fabric sock 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). [Special Condition #6.C.]

Monitoring/Recordkeeping:

1. The permittee shall monitor visible emissions as an indicator of proper operation of the cyclone fitted with a fabric sock. During proper operation, no visible emissions should occur. If visible emissions are observed, the permittee shall perform corrective action. [Special Condition #6.D.]
   a) Visible emission observations shall be made daily using U.S. EPA Method 22-like procedures for a duration of two minutes. Observations shall be made while the emission unit is in operation.
2. The permittee shall maintain an operating and maintenance log using Attachment M or equivalent form approved by the Air Pollution Control Program for the cyclone fitted with a fabric sock which shall include the following: [Special Condition #6.E.]
   a) Time of daily observation.
   b) Visible emission observation results.
   c) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
   d) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).

2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 010 10 CSR 10-6.060 Construction Permits Required Construction Permit #102012-014, Issued October 24, 2012	
Control Device - Afterburner	
Emission Unit	Description
EP-40	Pyrolysis Furnace/Paint Hook Burnoff Oven

Operational Limitation:

1. EP-40 Pyrolysis Furnace/Paint Hook Burnoff Oven shall be exclusively used to remove powder paint from paint hooks. [Special Condition #7.A.]
2. The permittee shall control emissions from EP-40 Pyrolysis Furnace/Paint Hook Burnoff Oven using an afterburner. The permittee shall not operate EP-40 Pyrolysis Furnace/Paint hook Burnoff Oven without the afterburner. The afterburner shall be operated between 1,400 and 1,600 degrees Fahrenheit with more than a 0.5 second residence time. [Special Condition #7.B.]
3. The afterburner shall be equipped with an electronic controller with a digital readout, which is able to monitor and display the temperature in the combustion chamber to an accuracy of plus or minus ten percent. [Special Condition #7.C.]
4. The afterburner shall be operated and maintained according to manufacturer's specifications. The manufacturer's specifications shall be retained onsite. [Special Condition #7.D.]

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the operational limitations(s).
2. The permittee shall report any deviations from the limitations and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

Tanks Area

PERMIT CONDITION 011 40 CFR Part 63, Subpart CCCCCC, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities	
Emission Unit	Description
EP-12A	500 gallon, unleaded gasoline fuel tank

Operational Limitation:

1. The permittee shall not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extend periods of time. Measures to be take include, but are not limited to, the following: [§63.11116(a)]
   a) Minimize gasoline spills[§63.11116(a)(1)];
   b) Clean up spills as expeditiously as practicable[§63.11116(a)(2)];

c) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use[§63.11116(a)(3)];
d) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators[§63.11116(a)(4)].

Monitoring/Recordkeeping:
The permittee is not required to submit notifications or reports, but the permittee shall have records available within 24 hours of a required by the Administrator to document the permittee's gasoline throughput. [§63.11116(b)]

Reporting:
1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The following is only an excerpt from the regulation or code, and is provided for summary purposes only

10 CSR 10-6.045 Open Burning Requirements

1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
2) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
   a) Name and location of installation;
   b) Name and telephone number of person responsible for the installation;
   c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
   d) Identity of the equipment causing the excess emissions;
   e) Time and duration of the period of excess emissions;
   f) Cause of the excess emissions;
   g) Air pollutants involved;
   h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
   i) Measures taken to mitigate the extent and duration of the excess emissions; and
   j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
2) The permittee shall submit the paragraph 1 information list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other

pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.

4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(5)(B)1.A(III)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)3.B]

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

1) The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.
2) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

1) The permittee shall submit full emissions report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the director.
2) The permittee may be required by the director to file additional reports.
3) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
4) The permittee shall submit a full EIQ for the 2011, 2014, 2017, and 2020 reporting years. In the interim years the installation may submit a Reduced Reporting Form; however, if the installation's emissions increase or decrease by more than five tons when compared to their last submitted full EIQ, the installation shall submit a full EIQ rather than a Reduced Reporting Form.

5) In addition to the EIQ submittal schedule outlined above, any permit issued under 10 CSR 10-6.060 section (5) or (6) triggers a requirement that a full EIQ be submitted in the first full calendar year after the permitted equipment initially operates.
6) The fees shall be payable to the Department of Natural Resources and shall be accompanied by the emissions report.
7) The permittee shall complete required reports on state supplied EIQ forms or electronically via MoEIS. Alternate methods of reporting the emissions can be submitted for approval by the director. The reports shall be submitted to the director by April 1 after the end of each reporting year. If the full emissions report is filed electronically via MoEIS, this due date is extended to May 1.
8) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
9) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.165 Restriction of Emission of Odors

This requirement is not federally enforceable.

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.

3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
   a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
   b) Paving or frequent cleaning of roads, driveways and parking lots;
   c) Application of dust-free surfaces;
   d) Application of water; and
   e) Planting and maintenance of vegetative ground cover.

Monitoring:

The permittee shall conduct inspections of its facilities sufficient to determine compliance with this regulation. If the permittee discovers a violation, the permittee shall undertake corrective action to eliminate the violation.

The permittee shall maintain the following monitoring schedule:

1) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
2) Should no violation of this regulation be observed during this period then-
   a) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
   b) If a violation is noted, monitoring reverts to weekly.
   c) Should no violation of this regulation be observed during this period then-
      i) The permittee may observe once per month.
      ii) If a violation is noted, monitoring reverts to weekly.
3) If the permittee reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner to the initial monitoring frequency.

Recordkeeping:

The permittee shall document all readings on Attachment A, or its equivalent, noting the following:

1) Whether air emissions (except water vapor) remain visible in the ambient air beyond the property line of origin.
2) Whether the visible emissions were normal for the installation.
3) Whether equipment malfunctions contributed to an exceedance.
4) Any violations and any corrective actions undertaken to correct the violation.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.
2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants

Emission Limitation:

No owner or other person shall cause or permit to be discharged into the atmosphere from any source any visible emissions in excess of the limits specified by this rule. This permit will contain the opacity limits identified (10, 20 or 40 percent) for the specific emission units.

Monitoring:

1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in USEPA Test Method 22. The permittee is only required to take readings when the emission unit is operating and when the weather conditions allow. If the permittee observes no visible or other significant emissions using these procedures, then no further observations are required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
2) The permittee must maintain the following monitoring schedule:
   a) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
   b) Should the permittee observe no violations of this regulation during this period then-
      i) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
      ii) If a violation is noted, monitoring reverts to weekly.
      iii) Should no violation of this regulation be observed during this period then-
         (1) The permittee may observe once per month.
         (2) If a violation is noted, monitoring reverts to weekly.
3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

The permittee shall maintain records of all observation results using Attachment J (or its equivalent), noting:

1) Whether any air emissions (except for water vapor) were visible from the emission units;
2) All emission units from which visible emissions occurred;
3) Whether the visible emissions were normal for the process;
4) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
5) The permittee shall maintain records of all USEPA Method 9 opacity tests performed.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the department to monitor training provided to employees. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the department. Each person who offers training for asbestos abatement occupations must first obtain accreditation from the department. Certain business entities that meet the requirements for state-approved exemption status must allow the department to monitor training classes provided to employees who perform asbestos abatement.

10 CSR 10-6.280 Compliance Monitoring Usage

1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
   c) Any other monitoring methods approved by the director.
2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
   c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
   a) Applicable monitoring or testing methods, cited in:
      i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
      ii) 10 CSR 10-6.040, "Reference Methods";
      iii) 10 CSR 10-6.070, "New Source Performance Standards";
      iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
   b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
   a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.

b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.

2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR part 82*

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

10 CSR 10-6.065, §(5)(E)2 and §(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.C General Record Keeping and Reporting Requirements

1) Record Keeping
   a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
   b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
2) Reporting
   a) All reports shall be submitted to the Air Pollution Control Program, Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
   b) The permittee shall submit a report of all required monitoring by:
      i) April 1st for monitoring which covers the January through December time period.
      ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
   c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit.
   d) Submit supplemental reports as required or as needed. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
      i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7 of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.
      ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
      iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's annual report shall be reported on the schedule specified in this permit, and no

later than ten days after any exceedance of any applicable rule, regulation, or other restriction.

e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.

f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065 §(5)(C)1 and §(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

1) June 21, 1999;
2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(5)(C)1.A General Requirements

1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted under this rule.
6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit.

10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios

None.

10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) Compliance Requirements

1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
   a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
   b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
   d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
   a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
   b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances must be included in the compliance certifications. The compliance certification shall include the following:
   a) The identification of each term or condition of the permit that is the basis of the certification;
   b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
   c) Whether compliance was continuous or intermittent;
   d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
   e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)7 Emergency Provisions

1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:

a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
b) That the installation was being operated properly,
c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.

2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(5)(C)5 Off-Permit Changes

1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Off-permit changes shall be subject to the following requirements and restrictions:
   a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is a Title I modification; Please Note: Changes at the installation which affect the emission limitation(s) classifying the installation as an intermediate source (add additional equipment to the record keeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.
   b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change; and
   c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes.

10 CSR 10-6.020(2)(R)34 Responsible Official

The application utilized in the preparation of this permit was signed by Keven Blansett, Executive Vice President. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause

This permit may be reopened for cause if:

1) The Missouri Department of Natural Resources (MDNR) or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
2) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
   a) The permit has a remaining term of less than three years;
   b) The effective date of the requirement is later than the date on which the permit is due to expire; or
   c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
3) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065 §(5)(E)1.A and §(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

Attachment A
EP-02A Vinyl Paint Booth Emissions Worksheet

Date (Month and Year):														
Hours of Operation (hours per month):														
Material Used[1]	Amount Used (gallons)	Density (lb/gal)	VOC Content (%)	VOC Emissions[2] (tons)	Solids Content (%)	PM_{10} Emissions[3] (tons)	HAP Name: CAS No.: Content (%)	HAP Name: CAS No.: Emissions[2] (tons)	HAP Name: CAS No.: Content (%)	HAP Name: CAS No.: Emissions[2] (tons)	HAP Name: CAS No.: Content (%)	HAP Name: CAS No.: Emissions[2] (tons)	Combined HAP Content (%)	Combined HAP Emissions[2] (tons)
			Malfunction[6]:		Malfunction[6]:		Malfunction[6]:		Malfunction[6]:		Malfunction[6]:		Malfunction[6]:	
			Emissions[4]:		Emissions[4]:		Emissions[4]:		Emissions[4]:		Emissions[4]:		Emissions[4]:	

[1]All of the material used in EP-02 Vinyl Paint Booth shall be reported on this worksheet. The permittee shall not split any of the material usage onto EP-41E Cure Oven. If additional columns are needed for individual HAPs, the facility may either add additional columns (if using an excel spreadsheet) or copy additional pages and only fill out the individual HAP columns on the additional pages (if using paper worksheets). If additional rows are needed for materials, the facility may either add additional rows (if using an excel spreadsheet) or copy additional pages (if using paper worksheets).
[2]Emissions (tons per month) =Amount Used (gallons) x Density (lb/gal) x Content (%) x 0.0005 (tons/lb).
[3]Emissions (tons per month) =Amount Used (gallons) x Density (lb/gal) x Solids Content (%) x 0.0005 (tons/lb) x (1 – 0.97). Note: This equation includes the 97% overall control for fabric filter usage required by Special Condition 5.B.
[4]Emissions (tons per month) = the sum of each material's individual emissions (tons per month) plus any emissions for malfunctions that occurred.
[5]If the MSDS provides a range of values, use the highest number.
[6]Malfuction emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.

Attachment B
Emissions Worksheet

Date (Month and Year):							
Emission Unit	Description	Hours of Operation	Amount Used/ Processed (tons)	PM_{10}		VOC	
				Emission Factor[7] (lb/ton)	Emissions[4] (tons)	Emission Factor (lb/ton)	Emissions[4] (tons)
EP-06	Aluminum Cutting			0.1		0.05	
EP-17	Wood Cutting			33.04[1]		Malfuctions[5]:	
EP-18	Vinyl Cutting and Welding			0.027			
EP-27	Drilling/Grinding/Punch Press			0.35			
EP-28	Welding & Acetylene/O_2 Metal Cutting			20.17			
EP-29	Wood Cutting			0.35			
EP-35	Aluminum Trimming			13.13[2]			
EP-36	Packing and Shipping			11.33[3]			
				Malfuctions[5]:			
				Emissions[6]:			

[1]The emission factor includes 88.2% overall control for fabric filter usage as required by Special Condition 5.B.
[2]The emission factor includes 89.5% overall control for dust collector usage as required by Special Condition 5.A.
[3]The emission factor includes 89.5% overall control for fabric filter usage as required by Special Condition 5.B.
[4]Emissions (tons per month) = Amount Used/Processed (tons) x Emission Factor (lb/ton) x 0.0005 (tons/lb).
[5]Malfuction emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.
[6]Emissions (tons per month) = the sum of each emission unit's individual emissions.
[7]Emission Factors taken from Construction Permit No. 102012-014

Attachment C
Fuel Combustion Worksheet

Date (Month and Year):						
Emission Unit	**Description**	**Amount of Propane Combusted (1000 gallons)**	**PM_{10}**		**VOC**	
			Emission Factor[1] (lb/1000 gallons)	**Emissions[2] (tons)**	**Emission Factor[1] (lb/1000 gallons)**	**Emissions[2] (tons)**
EP-13A	IR Building Heating System		0.7		1.0	
EP-40	Pyrolysis Furnace/Paint Hook Burnoff Oven					
EP-41A	5 Stage Aluminum Wash System					
EP-41B	Aluminum Dry Off Oven					
EP-41C	Aluminum Powder Cure Oven with Infrared					
EP-41D	Make-up Air System					
EP-41E	Vinyl Cure Oven					
			PM_{10} Malfunction[3]:		VOC Malfunction[3]:	

[1]Emission Factor taken from AP 42 Table 1.5-1 Emission Factors for LPG Combustion.
[2]Emissions (tons per month) =Amount of Propane Combusted (1000 gallons) x Emission Factor (lb/1000 gallons) x 0.0005 (tons/lb)
[3]Malfuction emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.

Attachment D
Tank Worksheet

Date (Month and Year):					
Emission Unit	**Description**	**Emission Type**	**Amount Used (1000 gallons)**	**VOC Emission Factor[1] (lb/1000 gallons)**	**VOC Emissions[2] (tons)**
EP-12A	Gasoline Storage Tank	Working Loss		8.2	
EP-12B	Diesel Storage Tank			0.02	
Emission Unit	**Description**	**Emission Type**	**Size (1000 gallons)**	**VOC Emission Factor[3] (lb/1000 gallons-year)**	**VOC Emissions[4] (tons)**
EP-12A	Gasoline Storage Tank	Breathing Loss		23.4	
EP-12B	Diesel Storage Tank			0.04	
				Malfunction Emissions[5]:	
				Emissions[6]:	

[1]Emission Factors taken from SCC 40400205 and 40301021 respectively.
[2]Emissions (tons per month) = Amount Used (1000 gallons) x VOC Emission Factor (lb/1000 gallons) x 0.0005 (tons/lb).
[3]Emission Factors taken from SCC 40400102 and 40301019 respectively.
[4]Emissions (tons per month) = Size (1000 gallons) x VOC Emission Factor (lb/1000 gallons-year) x 0.0005 (tons/lb) x 0.083 (years/month).
[5]Malfuction emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.
[6]Emissions (tons per month) = the sum of each emission unit's individual emissions.

Attachment E
Mass Balance Worksheet

Date (Month and Year):																
Emission Unit	Description	Hours of Operation	Material Used[1]	Amount Used (gallons)	Density (lb/gal)	VOC Content (%)	VOC Emissions[2] (tons)	Solids Content (%)	PM_{10} Emissions[2] (tons)	HAP Name: CAS No.:		HAP Name: CAS No.:		Combined HAP	
										Content (%)	Emissions[2] (tons)	Content (%)	Emissions[2] (tons)	Content (%)	Emissions[2] (tons)
EP-16	Cold Cleaning of Window Parts														
EP-19	PVC Cement Usage														
EP-20	Sealant Usage														
EP-23	Touchup Paint Area														
EP-25	Wood Paint Booth														
EP-45	5 Stage Wash System														
EP-46	Degreasing Unit														
						Malfunction[3]		Malfunction[3]		Malfunction[3]		Malfunction[3]		Malfunction[3]	
						Emissions[4]:		Emissions[4]:		Emissions[4]:		Emissions[4]:		Emissions[4]:	

[1] All of the materials used by these emission units shall be reported on this worksheet. If additional columns are needed for individual HAPs, the facility may either add additional columns (if using an excel spreadsheet) or copy additional pages and only fill out the individual HAP columns on the additional pages (if using paper worksheets). If additional rows are needed for materials, the facility may either add additional rows (if using an excel spreadsheet) or copy additional pages (if using paper worksheets).
[2] Emissions (tons per month) =Amount Used (gallons) x Density (lb/gal) x Content (%) x 0.0005 (tons/lb).
[3] Malfuction emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.
[4] Emissions (tons per month) = the sum of each material's individual emissions.
[5] If the MSDS provides a range of values, use the highest number.

Attachment F
Miscellaneous Equipment Worksheet

Date (Month and Year):				
Emission Unit	**Description**	**Number of Deliveries**	**VOC Emission Factor (lb/delivery)**	**VOC Emissions[1] (tons)**
EP-21	Propane Tanks		41.61	
Emission Unit	**Description**	**Number of Flushes**	**VOC Emission Factor (lb/flush)**	**VOC Emissions[2] (tons)**
EP-31B	Existing Thermal Fill Flush		0.86	
EP-44	New Thermal Fill Flush			
			VOC Malfunction Emissions[9]:	
			VOC Emissions[3]:	

[1]Emissions (tons per month) = Number of Deliveries x VOC Emission Factor (lb/delivery) x 0.0005 (ton/lb).
[2]Emissions (tons per month) = Number of Flushes x VOC Emission Factor (lb/flush) x 0.0005 (ton/lb).
[3]VOC Emissions (tons per month) = the sum of each emission unit's individual emissions.

Date (Month and Year):					
Emission Unit	**Description**	**Hours of Operation**	**Number of Cuts**	**PM_{10} Emission Factor (lb/cut)**	**PM_{10} Emissions[4] (tons)**
EP-29	PM Emissions from Wood Cutting			0.0022[5]	
Emission Unit	**Description**	**Vehicle Miles Traveled (VMT)**		**PM_{10} Emission Factor (lb/VMT)**	**PM_{10} Emissions[6] (tons)**
EP-47	Haul Roads			0.05	
Emission Unit	**Description**	**Hours of Operation**	**Amount Processed (ft)**	**PM_{10} Emission Factor (lb/ft)**	**PM_{10} Emissions[7] (tons)**
EP-32	Existing Debridge			0.034	
EP-43	New Debridge				
				PM_{10} Malfunction Emissions[9]:	
				PM_{10} Emissions[8]:	

[4]Emissions (tons per month) = Number of Cuts x PM_{10} Emission Factor (lb/cut) x 0.0005 (ton/lb).
[5]The emission factor includes 78.6% control for dust collector usage as required by Special Condition 5.A.
[6]Emissions (tons per month) = Vehicle Miles Traveled (VMT) x PM_{10} Emission Factor (lb/VMT) x 0.0005 (ton/lb).
[7]Emissions (tons per month) = Amount Processed (ft) x PM_{10} Emission Factor (lb/ft) x 0.0005 (ton/lb).
[8]PM_{10} Emissions (tons per month) = the sum of each emission unit's individual emissions.
[9]Malfunction emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.

Attachment G
Thermal Fill Worksheet

Date (Month and Year):											
Emission Unit	Description	Hours of Operation[1]	Amount Used (gallons)	VOC		Ethylene Glycol (107-21-1)		MDI (101-68-8)		Combined HAP	
				Emission Factor[2] (lb/gal)	Emissions[3] (tons)	Emission Factor[2] (lb/gal)	Emissions[3] (tons)	Emission Factor[2](lb/gal)	Emissions[3] (tons)	Emission Factor[2] (lb/gal)	Emissions[3] (tons)
EP-31A	Existing Thermal Fill			0.008		0.008		5.33×10^{-10}		0.008	
EP-42	New Thermal Fill										
				Malfunction[4]		Malfunction[4]		Malfunction[4]		Malfunction[4]	
				Emissions[5]:		Emissions[5]:		Emissions[5]:		Emissions[5]:	

[1]Hours of Operation to include startup and shutdown time.
[2]Emission Factors taken from Construction Permit No. 102012-014.
[3]Emissions (tons per month) = Amount Used (gallons) x Emission Factor (lb/gal) x 0.0005 (ton/lb).
[4]Malfucntion emissions estimate shall be taken from report required to submit to Missouri DNR APCP per 10 CSR 10-6.050(3)(A) and recorded.
[5]Emissions (tons per month) = the sum of each emission unit's individual emissions and any malfunction emissions that occurred.

Attachment H
Installation Wide Monthly Emissions

Date (Month and Year):																		
Attachment	**VOC**	**PM_{10}**	**Combined HAP**	**Toluene (108-88-3)**	**Xylene (1330-20-7)**	**MIBK (108-10-1)**	**Ethylbenzene (100-41-4)**	**Glycol Ethers (20-10-0)**	**Ethylene Glycol (107-21-1)**	**Naphthalene (91-20-3)**	**Cumene (98-82-8)**	**Formaldehyde (50-00-0)**	**Methanol (67-56-1)**	**Hydrogen Fluoride (7664-39-3)**	**MDI (101-68-8)**	**HAP Name: CAS No.:**	**HAP Name: CAS No.:**
A																		
B																		
C																		
D																		
E																		
F																		
G																		
Installation-wide Emissions (tons per month):																		

Fill out the appropriate cells with the emissions from each attachment for the date (month and year).

Attachment I
Installation-wide 12-Month Rolling Totals

Month	Year	VOC	PM_{10}	Combined HAP	Toluene (108-88-3)	Xylene (1330-20-7)	MIBK (108-10-1)	Ethylbenzene (100-41-4)	Glycol Ethers (20-10-0)	Ethylene Glycol (107-21-1)	Naphthalene (91-20-3)	Cumene (98-82-8)	Formaldehyde (50-00-0)	Methanol (67-56-1)	Hydrogen Fluoride (7664-39-3)	MDI (101-68-8)	HAP Name: CAS No.:	HAP Name: CAS No.:
January																		
February																		
March																		
April																		
May																		
June																		
July																		
August																		
September																		
October																		
November																		
December																		
Installation-wide Emissions (tons per year):																		
Installation-wide Limit on Emissions (tons per year):		**100.0**	**15.0**	**25.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**5.0**	**10.0**	**10.0**	**2.0**	**10.0**	**0.1**	**0.1**	**10.0**	**10.0**

If totals are less than the installation-wide limits on emissions, then the facility is in compliance.
Each month complete this worksheet with the data for this month and the previous 11 months

Attachment J
Opacity Emission Observations

Date	Time	Emission Source	Visible Emissions		Excess Emissions		
			No	Yes[1]	Cause	Corrective Action	Initial

[1]If there are visible emissions, the permittee shall complete the excess emissions columns.

Attachment K
Fugitive Emission Observations

Date	Time	Visible Emissions Beyond Property Boundary		Abnormal Emissions		Initial
		Yes	No	Cause	Corrective Action	

Attachment L

Method 9 Opacity Emissions Observations	
Company	Observer
Location	Observer Certification Date
Date	Emission Unit
Time	Control Device

Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							

SUMMARY OF AVERAGE OPACITY

Set Number	Time		Opacity	
	Start	End	Sum	Average

Readings ranged from _____ to _____ % opacity.

Was the emission unit in compliance at the time of evaluation? _____ _____ _____
YES NO Signature of Observer

Attachment M

Inspection/Maintenance/Repair/Malfunction Log

Emission Unit # or CVM # _____

Date/Time	Inspection/ Maintenance Activities	Malfunction Activities					
		Malfunction	Impact	Duration	Cause	Action	Initials

Attachment N

Pressure Drop Log for Fabric Filters and Dust Collectors

Control Device ID	Date (Month/Day/Year)	Pressure Drop (inches water)	Within specifications? (Yes/No)

STATEMENT OF BASIS

Voluntary Limitations
In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a part 70 operating permit.

Permit Reference Documents
These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

1) Intermediate Operating Permit Application, received August 11, 2014;
2) 2013 Emissions Inventory Questionnaire, received March 4, 2014;
3) Construction Permit No. 0888-003A;
4) Construction Permit No. 0894-003;
5) Construction Permit No. 0894-003A;
6) Construction Permit No. 1197-022;
7) Construction Permit No. 0798-015;
8) Construction Permit No. 0199-007;
9) Construction Permit No. 0999-012;
10) Construction Permit No. 0999-012A;
11) Construction Permit No. 072009-021;
12) Construction Permit No. 102012-014;
13) Operating Permit No. OP2010-026A;
14) WebFIRE; and
15) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Emissions Tracking Requirements During Times Of Startup Shutdown And Malfunction Events.
Emission limits apply at all times, including times of Startup, Shutdown, and equipment malfunctions (SSM). In order to track SSM emissions to account for these events, the methods differ according to emission unit type. The units at this facility are primarily fuel combustion equipment (natural gas fired furnaces), and the emissions during SSM events will not differ significantly from times of steady state operation and are accounted for using established emission factors and recorded fuel throughputs. The fuel storage units are subject to the emission limits as well, but are not of the unit type to Startup, Shutdown, or have a Malfunction, and can be accounted for by using established methodologies.

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits
In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

See Other Regulatory Determinations.

Other Air Regulations Determined Not to Apply to the Operating Permit
The Air Pollution Control Program (APCP) has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits*
This rule is not applicable because the installation is in an ozone attainment area.

40 CFR Part 63 Subpart III, *National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production*

This regulation was included in the previous operating permit, but the flexible polyurethane foam operation has been removed from the facility. Therefore, this regulation has been removed from the permit.

Construction Permit History
The following is a brief history of construction permits issued for this installation:
Construction Permit No. 0888-003A

Issued August 15, 1988, the permit authorized the construction of a controlled pyrolysis furnace for the purpose of cleaning cured paint from the metal carriers used to support the windows as they are painted. The furnace has an MHDR of 0.3 MMBtu/hr. Special Conditions associated with maintaining manufacturer's specifications, emission rates below the De Minimis levels, and notification of startup of the unit. The permit conditions have since been superseded and not included in this permit.

Construction Permit No. 0894-003

Issued July 28, 1994, the permit authorized the construction of four (4) water heaters, a painting room and paint bake oven, an aluminum drying oven, a thermal fill flush process, three (3) aluminum saws, a vinyl cutter, an ethylene glycol storage tank, a wood cutting operation, a Masonite cutting operation, a debridge cutting operation, and associated appurtenances. Special Conditions limited the paint usage to less than 82.0 gallons in any consecutive 12-month period. The permit conditions have since been superseded and not included in this permit.

Construction Permit No. 0894-003A

Issued November 14, 1994, the permit amended Construction Permit No. 0894-003 to increase the paint usage from 82 to 300 gallons per year. A VOC limit of 0.65 tons from the paint area near the glass room was established. The permit conditions have since been superseded and not included in this permit.

Construction Permit No. 1197-022

Issued November 4, 1997, the permit authorized the construction of a new ventilation system and an expansion of operations, which includes a new paint room, Phoenix Window saw dust collect, LPG storage tank, Safety Kleen parts washers, sealant curing process, PVC cement drying process, and increasing paint usage in the existing paint room. There are no special conditions associated with this construction permit.

Construction Permit No. 0798-015

Issued June 26, 1998, the permit authorized the construction of a wood painting area that includes a paint booth, spray painting area, and a bake oven. There are no special conditions associated with this construction permit.

Construction Permit No. 0199-007

Issued December 30, 1998, the permit authorized the increase in emission limit for an existing paint booth. Potential emissions of the booth were estimated using a mass balance approach on the paint and found the unconditioned PTE to be 5.1 tons of VOC per year. The VOC limit will increase to 4.5 tons per year compared to the previous 0.64 tons established by Construction Permit No. 0894-003A. There are no special conditions associated with this construction permit.

Construction Permit No. 0999-012

Issued September 24, 2014, the permit authorized the construction of a new paint curing oven and air make-up unit. The special condition restricted the paint booth (EP-02A) and the curing oven to emit for than 78.4 tons of VOC in any consecutive 12-month period. The permit conditions have since been superseded and are not included in this permit.

Construction Permit No. 0999-012A

Issued December 26, 2006, the permit amended Construction Permit No. 0999-012 to establish a limit of less than ten (10) tons individually or twenty-five (25) tons combined of HAPs from the entire installation for any consecutive 12-months to avoid being subject to 40 CFR Part 63 Subpart MMMM, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products. A 2 ton limit for formaldehyde was established as well. Although these limits are part of this permit, the special conditions of this construction permit have since been superseded by another construction permit.

Construction Permit No. 052001-020

Issued May 9, 2001, the permit authorized the replacement of manual operated Thermal Fill and Debridge process equipment with automated equipment. Special Condition #1 states that all previous special conditions associated with the manual operated Thermal Fill and Debridge process can be removed from the permit. There are no other special conditions associated with the construction permit, and this special condition has since been superseded. Therefore, it is not included in this permit.

Construction Permit No. 072009-021

Issued July 30, 2009, the permit authorized the replacement of manual operated Thermal Fill and Debridge process equipment with automated equipment. This permit was part of remedial action for receiving a letter of warning. Construction Permit No. 052001-020 was issued on May 9, 2001 for the replacement, however the installation did not occur within the two years of the date the permit was issued, and was installed in 2007.

Special Conditions associated with the permit include limiting the emission of PM_{10} to less than 15.0 tons for any consecutive 12 month period for the automated Thermal Fill and Debridge process equipment. An emission limitation of 10.0 tons of ethylene glycol in any consecutive period for the entire installation was established. The permittee was required to install a cyclone dust collector as control equipment for the Debridge Cutting System. Although these limits are part of this permit,

the special conditions of this construction permit have since been superseded by another construction permit.

Construction Permit No. 072009-021A

Issued August 17, 2010, the permit amended the Special Conditions associated with the thermal fill process. By re-evaluating the potential emissions from the original permit, it was determined that the potential ethylene glycol emissions from the thermal fill process to be 0.36 tons per year. Therefore, the Special Condition limiting the installation of emitting less than 10.0 tons of ethylene glycol in any consecutive 12-month period was no longer needed. Although these limits are part of this permit, the special conditions of this construction permit have since been superseded by another construction permit.

Construction Permit No. 102012-014

Issued October 24, 2012, the permit authorized the construction of a new building with the installation of new equipment and modification to existing equipment to increase the production of windows. New equipment includes pyrolysis furnace/paint hook burnoff oven (EP-40), two (2) 5-stage wash system (EP-41A & EP-45), dry off oven (EP-41B), powder cure oven with infrared (EP-41C), make-up air system (EP-41D), vinyl cure oven (EP-41E), new thermal fill (EP-42), new debridge (EP-43), new thermal fill flush (EP-44), and a propane tank. Modified equipment includes vinyl paint booth (EP-02A), aluminum cutting (EP-06), cold cleaning of window parts (EP-16), vinyl cutting and welding (EP-18), sealant usage (EP-20), LPG unloading (EP-21), drilling/grinding/punch press (EP-27), geo grid touch up (EP-33), aluminum trimming (EP-35, packing and shipping (EP-36), and paved haul roads (EP-47). In the application for the Intermediate Operating Permit, the permittee indicated that EP-33 Geo Grid Touch Up is no longer being performed at the facility.

The special conditions of the permit superseded all the special conditions in previously issued construction permits. Special conditions establish a limit of 250.0 tons of VOCs and a limit of 25.0 tons of combines HAPs for the entire installation. The permit also established a limit for individual HAPs that can be found in Table 1of the construction permit. A limit of 15.0 tons of PM_{10} in any consecutive 12-month period from the entire installation was also established. The permittee was required to control emissions from EP-34 Wood Sawing/Routing and EP-35 Aluminum Trimming using dust collectors. The permittee was also required to control emissions from EP-02A Vinyl Paint Booth, EP-17 Phoenix Wood Cutting, and EP-36 Packing and Shipping using fabric filters. The permittee was required to control emission from EP-32 Existing Debridge and EP-43 New Debridge using a cyclone fitted with a fabric sock. EP-40 Pyrolysis Furnace/Paint Hook Burnoff Oven shall be exclusively used to remove powder paint from paint hooks and shall control emissions using an afterburner. The permittee shall also keep paints, solvents, and cleaning solutions in sealed containers whenever the materials are not in use.

On May 30, 2013, the Air Pollution Control Program received an Intermediate Air Operating Permit Significant Modification application from Quaker Window Products Company. In that application they proposed to continue the 100.0 tons of VOCs limit that was in OP2010-026A, instead of the 250.0 tons limit in this construction permit. Therefore, the proposed 100.0 ton limit of VOCs is included in this operating permit.

The permittee was required to pave EP-47 Haul Roads with materials such as asphalt, concrete, and/or other material(s), which has been completed. This special condition was put as a plant wide limitation in this operating permit, because EP-47 consist of all haul roads located at the facility.

The special conditions of this construction permit are included in this operating permit; however, the special condition associated with EP-47 Haul Roads has been modified. Since the permittee has completed the requirement to pave all haul roads, that special condition has been left out, but there are operational limitations that are included in this permit associated with the haul roads.

New Source Performance Standards (NSPS) Applicability

40 CFR Part 60 Subpart K, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978*

The permittee is not subject to regulation, because all storage vessels have a storage capacity less than 40,000 gallons per §60.110(a).

40 CFR Part 60 Subpart Ka, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984*

The permittee is not subject to regulation, because all storage vessels have a storage capacity less than 40,000 gallons per §60.110a(a).

40 CFR Part 60 Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984*

The permittee is not subject to regulation, because all storage vessels have a storage capacity less than 75 cubic meters per §60.110b(a).

Maximum Achievable Control Technology (MACT) Applicability

40 CFR Part 63 Subpart N, *National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks*

The chrome tank at the installation is not a chromium electroplating operation. No electricity is involved in the process; therefore, the installation is not subject to the regulation.

40 CFR Part 63 Subpart T, *National Emission Standards for Halogenated Solvent Cleaning*

The installation uses parts cleaners, but the water soluble ZEP cleaner used in the process does not contain solvents covered by Subpart T. Therefore, this regulation does not apply to the facility.

40 CFR Part 63 Subpart MMMM, *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products*

The installation is an area source of HAPs and is, therefore, not subject to this regulation per §63.3881(b). The installation has had a 25.0 ton plant wide and 10.0 ton individual limit for HAP emissions since Construction Permit No. 0999-012A was issued December 26, 2006. All of the equipment at the facility that was affected by this construction permit is considered existing sources, since they were installed prior to the original proposal date, August 13, 2002, of this rule. The compliance date for existing sources is the date 3 years after January 2, 2004. [§63.3883(b)]

40 CFR Part 63 Subpart QQQQ, *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products*

The installation is an area source of HAPs and is, therefore, not subject to this regulation per §63.4681(b). The installation has had a 25.0 ton plant wide and 10.0 ton individual limit for HAP emissions since Construction Permit No. 0999-012A was issued December 26, 2006. All of the equipment at the facility that was affected by this construction permit is considered existing sources, since they were installed prior to the original proposal date, June 21, 2002, of this rule. The compliance date for existing sources is the date 3 years after May 28, 2003. [§63.4683(b)]

40 CFR Part 63 Subpart CCCCCC, *National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities*

The facility is subject to the requirements of this rule. Based on yearly throughput totals from January 2011 to November 2014, the average monthly gasoline throughput of the facility is 1,013.25 gallons per month. The facility is subject to the requirements for facilities with a monthly throughput of less than 10,000 gallons of gasoline.

Yearly Gasoline Throughput Totals

2011	9,548 gallons
2012	5,849 gallons
2013	6,752 gallons
2014	4,378 gallons[1]

[1]Total based on January 1, 2014 through November 17, 2014

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability
None.

Updated Potential to Emit for the Installation

Pollutant	Potential to Emit (tons/yr)[1]
CO	9.05[2]
Total HAPs	< 25.0[2]
NO_x	15.69[2]
PM_{10}	< 15.0[2]
$PM_{2.5}$	< 15.0[2]
SO_x	0.02[2]
VOC	< 100.0[3]

[1]Each emission unit was evaluated at 8,760 hours of uncontrolled annual operation unless otherwise noted.
[2]Values taken from Construction Permit No. 102012-014. Individual HAPs have various emission limitations shown in the table below.
[3]Value taken from Significant Modification Application submitted May 24, 2013.

HAP Name	Potential to Emit(tons/year)[1]
Cumene	< 10.0
Ethylbenzene	< 10.0
Ethylene Glycol	< 10.0
Formaldehyde	< 2.0
Glycol Ethers	< 5.0
Hydrogen Fluoride	< 0.1
MDI	< 0.1
Methanol	< 10.0
MIBK	< 10.0
Naphthalene	< 10.0
Toluene	< 10.0
Xylene	< 10.0
Other Individual HAPs	< 10.0

[1]Each emission unit was evaluated at 8,760 hours of uncontrolled annual operation unless otherwise noted.

Other Regulatory Determinations

Updates to Emissions Points: During the review process there was several emission points that were included in OP2010-026A have been modified for various reasons.

Previous EP Number	New EP Number	Reason
EP-13B	No Change	EP-13B is currently listed as "Space Heaters – Propane," this is being changed to "IR Building Heating System – Propane"
EP-21	No Change	EP-21 is currently listed as "LPG Unloading," this is being changed to "Propane Tanks." The emission point consists of three propane tanks at the facility, one 21,100 gallon tank and two 18,000 gallon tanks.
EP-22	EP-46	EP-22 Maintenance Degreasing is a duplicate emission point of EP-46 Miscellaneous Maintenance Activities – Degreasing Unit
EP-34	EP-29	EP-34 Wood Sawing/Routing is a duplicate emission point of EP-29 PM emissions from wood cutting
EP-35	EP-35	EP-35 is currently listed as "Special Sized Windows," this is being changed to "Aluminum Trimming" to better represent the operations that occur at this emission point.
EP-45	EP-41A	EP-45 5 Stage Wash System is a duplicate emission point of EP-41A 5-Stage Wash System

None	EP-48	pH Neutralization system was included in the previous operating permit but was not assigned an emission point number at that time, however there are no applicable regulations from this unit.
None	EP-49	IR Gel Oven was included in the previous operating permit but was not assigned an emission point number at that time, however there are no applicable regulations from this unit.
None	EP-50	Hand Tool Usage was included in the previous operating permit but was not assigned an emission point number at that time; however there are no applicable regulations from this unit.
None	EP-51	Spray Paint Can Filler was included in the previous operating permit but was not assigned an emission point number at that time; however there are no applicable regulations from this unit.
None	EP-18	Insulation of Doors was included in the last operating permit without an emission point number, however this is a duplicate emission point of EP-18 Vinyl Cutting and Vinyl Welding.
None	EP-52	Powder Coating was included in the previous operating permit but was not assigned an emission point number at that time; however there are no applicable regulations from this unit. It will be renamed "Powder Coating Paint Booth"
None	EP-52	Powder Paint Booth was included in the previous operating permit but was not assigned an emission point number at that time; however there are no applicable regulations from this unit. It will be renamed "Powder Coating Paint Booth."

10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*

This rule applies to all sources of visible emissions throughout the State of Missouri. The combustion units all burn propane and have PM PTE less than 0.5 lb/hr, therefore no monitoring or record keeping is required for those units.

EP-02A, Vinyl Paint Booth, emits particulate matter, however, from Construction Permit No. 102012-014 the permittee is required to install fabric filter control devices on the paint booth. The fabric filter has 97% control efficiency, and the permit requires the permittee to operate and maintain the fabric filter with the manufacturer's specifications, monitor and record the operating pressure drop across the fabric filters at least once every 24 hours, and maintain an operating and maintenance log. If the permittee remains in compliance with Permit Condition 001, there is no additional monitoring required.

EP-06, Aluminum Cutting, does not meet any of the exemptions and has a potential to emit 4.38 tons per year of particulate matter. The emission point is subject to the rule and the emission limitations, monitoring, recordkeeping, and reporting requirements of Permit Condition 007 of this permit.

10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*

The facility is exempt from this rule per 6.260(1)(A)2. The emission points listed below are exempt from the requirements of this rule, because the combustion units exclusively use liquefied petroleum gas(propane).

Equipment	Fuel
EP-13 IR Building Heating System	Propane
EP-40 Pyrolysis Furnace/Paint Hook Burnoff Oven	Propane
EP-25 Make-Up Air System for Wood Paint Booth	Propane
EP-41A 5-Stage Wash System (stage 1)	Propane
EP-41B Dry-Off Oven	Propane
EP-41C Powder Cure Oven with Infrared	Propane
EP-41D Make-Up Air System (2 units)	Propane
EP-41E Vinyl Cure Oven	Propane

10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*

Emission Unit	MHDR (unit/hr)	Emission Factor[1] (lb PM/unit)	Overall Control Device Efficiency (%)	Uncontrolled PM Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)
EP-02A	11 gal	1.58	97	17.38	0.52
EP-06	10 tons	0.1	-	1	-
EP-13	0.07 1000 gal	0.7	-	0.05	-
EP-17	0.0045 tons	280	88.2	1.26	0.15
EP-18	1.12 tons	0.027	-	0.03	-
EP-25	0.6 gal	2.56	96	1.53	0.06
EP-27	1 ton	0.35	-	0.35	-
EP-28	0.001 tons	20.17	-	0.02	-
EP-32	12900 ft	0.000282[2]	88.2	3.64	0.43
EP-35	0.0073 tons	125	89.5	0.91	0.1
EP-36	0.0028 tons	107.9	89.5	0.3	0.03
EP-40	0.01 1000 gal	0.7	-	0.01	-
EP-41A	0.02 1000 gal	0.7	-	0.02	-
EP-41B	0.03 1000 gal	0.7	-	0.02	-
EP-41C	0.06 1000 gal	0.7	-	0.04	-
EP-41D	0.02 1000 gal	0.7	-	0.02	-
EP-41E	0.03 1000 gal	0.7	-	0.02	-
EP-43	25,800 ft	0.000282[2]	88.2	7.28	0.86

[1]Emission factor taken from Construction Permit No. 102012-014.
[2]Emission factor taken from Construction Permit No. 072009-021 based on lb Pm/ft.

EP-02A Vinyl Paint Booth

The vinyl paint booth has a maximum hourly design rate of 11 gallons per hour with an emission factor of 1.58 pounds per gallon. The process is equipped with a fabric filter that has an overall control device efficiency of 97%. This rule does not apply because it meets the provisions of 10

CSR 10-6.400(1)(B)14. The provisions of the rule shall not apply to coating operations equipped with a control system designed to control at least ninety-five percent (95%) of the particulate overspray provided the system is operated and maintained in accordance with manufacturers' specifications or comparable maintenance procedures that meet or exceed manufacturers' specifications.

EP-06 Aluminum Cutting

The Aluminum Cutting has a maximum hourly design rate of 10 tons per hour with an emission factor of 0.1 pounds per ton. EP-06 has an uncontrolled particulate matter emission of 1 pound per hour. The allowable emissions from the process weight rule were calculated to be 19.18 pounds per hour as demonstrated below. The allowable emissions are over 19 times greater than the uncontrolled particulate matter emissions, therefore the rule does not apply since the emission unit meets the exemption in 10 CSR 10-6.400(1)(B)16.

$$E = 4.10\left(10\ \frac{tons}{hr}\right)^{0.67} = 19.18\ \frac{lb}{hr}$$

EP-13 IR Building Heating System

The space heaters all use liquefied petroleum gas (propane), and therefore the rule does not apply because it meets the provisions of 10 CSR 10-6.400(1)(B)6 since it burns fuel for indirect heating.

EP-17 Phoenix Wood Cutting

The Phoenix Wood cutting operation is equipped with a fabric filter and the facility is required to operate and maintain the filter according to manufacturer's specifications. Construction Permit No.102012-014 requires the facility to monitor and record the pressure drop across the fabric filter at least once every 24 hours. If the facility maintains the fabric filters according to the requirements of Permit Condition 001 of this permit, this unit will have a controlled potential to emit 0.15 pounds per hour. This value is less than one-half (0.5) pounds per hours, so the emission point meets the exemption of 10 CSR 10-6.400(1)(B)12.

EP-18 Vinyl Cutting and Welding

The vinyl cutting and welding process has an uncontrolled potential to emit 0.03 pounds per hour. This value is less than 0.5 pounds per hour, therefore, making this rule not apply since the emission unit meets the exemption in 10 CSR 10-6.400(1)(B)12.

EP-25 Wood Paint Room Paint Booth

The wood paint room paint booth has a maximum hourly design rate of 0.6 gallons per hour with an emission factor of 2.56 pounds per gallon. The process is equipped with a fabric filter that has an overall control device efficiency of 96%. This rule does not apply because it meets the provisions of 10 CSR 10-6.400(1)(B)14. The provisions of the rule shall not apply to coating operations equipped with a control system designed to control at least ninety-five percent (95%) of the particulate overspray provided the system is operated and maintained in accordance with manufacturers' specifications or comparable maintenance procedures that meet or exceed manufacturers' specifications.

EP-27 Drilling, Grinding, and Punch Press
The drilling, grinding, and punch press processes have an uncontrolled potential to emit 0.35 pounds per hour. This value is less than 0.5 pounds per hour, therefore, making this rule not apply since the emission unit meets the requirements of 10 CSR 10-6.400(1)(B)12.

EP-28 Welders, Acetylene and O_2 Metal Cutting
The welding, acetylene and O_2 metal cutting processes have an uncontrolled potential to emit 0.02 pounds per hour. This value is less than 0.5 pounds per hour, therefore, this rule does not apply since the emission unit meets the exemptions in 10 CSR 10-6.400(1)(B)12.

EP-32 Debridge Thermal Fill
The debridge process is subject to the rule and has a controlled potential to emit 0.43 pounds per hour. Using the process weight equation in 10 CSR 10-6.400(3)(A)1, EP-32 has an allowable emission rate of 2.22 pounds per hour. The device is equipped with a cyclone with a fabric sock. By remaining in compliance with the Operational Limitations of Permit Condition 009, the permittee will be in compliance with the emission limitations of this rule.

$$E = 4.10\left(0.4\,\frac{tons}{hr}\right)^{0.67} = 2.22\,\frac{lb}{hr}$$

EP-35 Aluminum Trimming
The Aluminum Trimming operation is equipped with dust collectors and the facility is required to operate and maintain the collectors according to manufacturer's specifications. Construction Permit No.102012-014 requires the facility to monitor and record the pressure drop across the dust collector at least once every 24 hours. If the facility maintains the dust collectors according to the requirements of Permit Condition 008 of this permit, this unit will have a controlled potential to emit 0.1 pounds per hour. This value is less than one-half (0.5) pounds per hours, so the emission point meets the exemption of 10 CSR 10-6.400(1)(B)12.

EP-36 Packing and Shipping
The packing and shipping operation is equipped with a fabric filter and the facility is required to operate and maintain the filter according to manufacturer's specifications. Construction Permit No.102012-014 requires the facility to monitor and record the pressure drop across the fabric filter at least once every 24 hours. If the facility maintains the fabric filters according to the requirements of Permit Condition 006 of this permit, this unit will have a controlled potential to emit 0.03 pounds per hour. This value is less than one-half (0.5) pounds per hours, so the emission point meets the exemption of 10 CSR 10-6.400(1)(B)12.

EP-40 – Pyrolysis Furnace
The pyrolysis furnace has an uncontrolled potential to emit 0.01 pounds per hour. This value is less than 0.5 pounds per hour, therefore, this rule does not apply since the emission unit meets the exemption in 10 CSR 10-6.400(1)(B)12.

EP-41A 5-Stage Wash System
The 5-stage wash system uses liquefied petroleum gas(propane), and therefore the rule does not apply because it meets the provisions of 10 CSR 10-6.400(1)(B)6 since it burns fuel for indirect heating.

EP-41B Dry Off Oven
The dry off oven uses liquefied petroleum gas(propane), and therefore the rule does not apply because it meets the provisions of 10 CSR 10-6.400(1)(B)6 since it burns fuel for indirect heating.

EP-41C Powder Cure Oven
The powder cure oven uses liquefied petroleum gas(propane), and therefore the rule does not apply because it meets the provisions of 10 CSR 10-6.400(1)(B)6 since it burns fuel for indirect heating.

EP-41D Make-Up Air System
The make-up air system has an uncontrolled potential to emit 0.02 pounds per hour. This value is less than 0.5 pounds per hour, therefore, this rule does not apply since the emission unit meets the requirements of 10 CSR 10-6.400(1)(B)12.

EP-41E Vinyl Cure Oven
The vinyl cure oven uses liquefied petroleum gas(propane), and therefore the rule does not apply because it meets the provisions of 10 CSR 10-6.400(1)(B)6 since it burns fuel for indirect heating.

EP-43 Debridge Cutting and Thermal Fill
The debridge process is subject to the rule and has a controlled potential to emit 0.86 pounds per hour. Using the process weight equation in 10 CSR 10-6.400(3)(A)1, EP-43 has an allowable emission rate of 3.23 pounds per hour. The device is equipped with a cyclone with a fabric sock. By remaining in compliance with the Operational Limitations of Permit Condition 009, the permittee will be in compliance with the emission limitations of this rule.

$$E = 4.10\left(0.7\ \frac{tons}{hr}\right)^{0.67} = 3.23\ \frac{lb}{hr}$$

10 CSR 10-6.405, *Restriction of Particulate Matter Emissions from Fuel Burning Equipment Used for Indirect Heating*

All equipment used for indirect heating located at the facility uses propane, therefore the installation is exempt from the rule per 10 CSR 10-6.405(1)(E).

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis
Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons.

1) The specific pollutant regulated by that rule is not emitted by the installation.
2) The installation is not in the source category regulated by that rule.
3) The installation is not in the county or specific area that is regulated under the authority of that rule.
4) The installation does not contain the type of emission unit which is regulated by that rule.
5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously

cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

Response to Public Comments

During the Public comment period, the Air Pollution Control Program received a few comments about the draft permit. Comments were submitted from Robert Cheever, of the Environmental Protection Agency, on April 14, 2015 via email to department staff. The comments are addressed in the order in which they appear within the letter(s).

Comment #1: **Permit Condition PW001** establishes a voluntary emission limitation of less than 100 tons of volatile organic compounds (VOCs) in any consecutive 12-month period. **Permit Condition PW002** establishes voluntary emission limitations of less than 25 tons of any combination hazardous air pollutants (HAPs) in any 12-month consecutive period and less than a specific amount of certain individual hazardous air pollutants (HAPs) in any 12-month consecutive period, as shown in Table 1. Finally, **Permit Condition PW003** establishes an emission limitation on particulate matter less than ten microns in diameter (PM_{10}) from the entire installation in any consecutive twelve-month period. While the draft operating permit intends to restrict VOC, HAP, and PM_{10} below the individual limits, these permit conditions are not enforceable as a practical matter. In its response to a petition against an operating permit issued to Hu Honua Bioenergy Facility, the Environmental Protection Agency granted the petitioners contention that the operating permit failed to ensure the enforceability as a practical matter because the permit was unclear whether all actual emissions were considered in determining compliance. Specifically, the permit failed to include emissions from malfunctions or upset conditions, although the permit did address start-up and shutdown emissions. Permit Condition PW001, PW002, and PW003, in the Quaker Window Products -- Freeburg draft operating permit, are unclear whether or not start-up, shutdown, malfunction and upset emissions are considered in the determination of compliance. In addition, it is unclear whether or not all emission units with the potential to emit VOC, HAPs, and PM_{10} are included in the compliance determination. All three of these permit conditions require the use of Attachments A, B, C D, E, F, G, H, and I to accurately demonstrate compliance with the VOC and HAP and PM_{10} emission limits from the "entire installation," however, these permit conditions do not define the term "entire installation" with potential VOC, HAP and PM_{10} emissions.

For purposes of determining the potential-to-emit (PTE) of a stationary source of VOCs, HAPs, and PM_{10}, the PTE shall encompass the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Thus, emissions for all emission units that are part of the source's physical and operational design (entire installation) must be included in calculating PTE for purposes of determining VOC, HAP, and PM_{10} emission limitation compliance, including emission units that have been designated as without limitations and any designated insignificant activities. Similarly, EPA has previously explained that when a source accepts a source-wide limit for a pollutant, all actual emissions of that (those) pollutant(s) from the source must be considered in determining compliance with the limit. **Section I** of the draft operating permit on public notice includes a listing "**Emission Units with Limitations**" which contains an Emission Unit EP-13. However, Emission Unit EP-13 is not included in Attachments A, B, C D, E, F, G, H, and I. Attachment C includes Emission Units EP-13A and EP-13B which EPA believes are the same, however, their listings are not consistent

so verification is not totally available. **Section I** also has "**Emission Units without Limitations**" and included in this listing are Emission Units EP-51 and EP-52 which EPA believes could contribute to the VOC, HAP, and/or PM_{10} emission loading. Again, Emission Units EP-51 and EP-52 are not included in Attachments A, B, C D, E, F, G, H, and I. Finally, Attachment E includes Emission Units EP-22 and EP-23 which are not included in Section I.

EPA recommends MDNR revise Permit Condition PW001, PW002 and PW003, in the Intermediate State Permit to Operate for Quaker Window Products – Freeburg, to ensure the source-wide VOCs; the source-wide total HAPs and individual HAP and PM10 emission limits are enforceable. MDNR should identify all emission units subject to the site-wide limitations and clarify in the operating permit that those limits apply at all times, and that all actual source-wide emission units must be considered in determining compliance with those limits.

Response to Comment: The emissions calculations in Attachments A, B, C, D, E, F, G, H, and I assume emissions from start-up and shutdown are equivalent to emissions during normal operation. A place on the Attachments has been added for the facility to record any emissions that occurred during any malfunction. Emissions from malfunctions and upsets are required to be reported to the Air Pollution control Program's Enforcement Section by 10 CSR 10-6.050.

Comment #2: The **Monitoring and Record keeping** requirement in **Permit Condition 002** and **Permit Condition 007** both say: "As Detailed in Section IV: Core Permit Requirements" These permit requirements, as written, are not enforceable from a practical matter. EPA's guidance on practical enforceability defines practically enforceable as permit conditions which answer who, what, where, when, how and how often. Therefore, EPA recommends MDNR consider re-wording the monitoring and record keeping requirements in Permit Condition 002 and Permit Condition 007 to say: "Permittee shall conduct monitoring and record keeping in accordance with 10 CSR 10-6.220 as detailed in Section IV."

Response to Comment: Previous wording has been replaced with the recommended wording of "Permittee shall conduct monitoring and recordkeeping in accordance with 10 CSR 10-6.220 as detailed in Section IV."

Comment #3: The language regarding the written notification requirement for Off-Permit Changes in Section V used in operating permits has recently been modified to more closely match the wording in 10 CSR 10-6.065(5)(C)5. Therefore, EPA recommends MDNR use the newer Off-Permit Change wording in the Quaker Window Products -- Freeburg operating permit.

Response to Comment: Previous wording has been replaced with the new wording for the Off-Permit Changes in the permit.

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

JAN 1 1 2016

Mr. Bjoern Meyer
SAF-Holland, Inc.
308 W Walton Street
Warrenton, MO 63383

Re: SAF-Holland, Inc., 219-0013
Permit Number: OP2015-014

Dear Mr. Meyer:

Enclosed with this letter is your intermediate operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty (30) days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If you send your appeal by registered or certified mail, we will deem it filed on the date you mailed it. If you send your appeal by a method other than registered or certified mail, we will deem it filed on the date the AHC receives it.

If you have any questions or need additional information regarding this permit, please contact the Air Pollution Control Program (APCP) at (573) 751-4817, or you may write to the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS/jrl

Enclosures

c: Robert Cheever, US EPA Region VII
PAMS File: 2014-06-030

Missouri Department of Natural Resources
Air Pollution Control Program

INTERMEDIATE STATE PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

Intermediate Operating Permit Number: **OP2015-014**
Expiration Date: **January 11, 2021**
Installation ID: **219-0013**
Project Number: **2014-06-030**

Installation Name and Address
SAF-Holland, Inc.
308 W Walton Street
Warrenton, MO 63383
Warren County

Parent Company's Name and Address
SAF-Holland USA, Inc.
467 Ottawa Ave
Holland, MI 49423-3983

Installation Description:
SAF-Holland, Inc. produces and finishes tractor-trailer components from steel stock. Processes include welding, parts washing, painting, and lumber sawing. The installation took a voluntary limitation on VOCs and HAPs to become an intermediate source; therefore it is not a major source for any pollutants.

Jacob R. Robinett
Prepared by:
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Operating Permit Unit

Director or Designee
Department of Natural Resources

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I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

SAF-Holland, Inc. is a manufacturer of components used in over the road trailers. Support legs are produced in the south plant, located at 308 W. Walton Street. The north plant is located at 404 W. Booneslick Road. The south plant is where the main office for the two facilities is located. The north plant serves as a feeder operation to the south plant and another plant in Arkansas. The north plant also converts coil steel in a roll forming operation and includes lumber sawing, painting, sanding, and parts washing operations. For permitting purposes, the two facilities are viewed as one installation.

The installation is not a named source, and the fugitive emissions from emission units do not count towards major source applicability. The following table lists actual emissions of reported air pollutants for the past five (5) years as they appeared on the submitted Emissions Inventory Questionnaires (EIQs).

Reported Air Pollutant Emissions, tons per year					
Pollutants	2014	2013	2012	2011	2010
Particulate Matter ≤ Ten Microns (PM_{10})	3.79	1.15	1.15	1.15	0.47
Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)	3.75	1.11	1.11	-	0.00
Volatile Organic Compounds(VOC)	38.61	31.22	31.22	31.22	17.93
Hazardous Air Pollutants (HAPs)	0.07	0.07	0.07	0.07	0.03

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations. These emission sources are also subject to the plant-wide emission limitations.

Emission Unit #	Description of Emission Unit
EP 12	Paint Spray Booth
EP 31	Electrostatic Paint Spray System
EP 35	Vac-U-Paint System
EP 36	3 MMBtu/hr, Natural Gas Fired, Burn-Off Oven, installed 1996
EP 37	Metals Preparation and Coating Process (Permit 112008-010)

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance. These emission sources are subject to the plant-wide emission limitations.

Description of Emission Source	
EP 05	(5) Safety Kleen Parts Washers (Coolant Management Systems) – thirty five (35) gal capacity
EP 13	(4) Parts Washers – thirty five (35) gal capacity, water-soluble cleaner
EP 14	Lumber Sawing Pallet Wood
EPA1	Electric Arc Welding
	(6) Gas Fire Furnace, < 1 MMBtu/hr total
	(14) Space Heaters, 0.01 MMBtu/hr each
	Alkaline Wash Heater, 4 MMBtu/hr, Natural Gas Fired, installed 1996
	Phosphate Wash Heater, 4 MMBtu/hr, Natural Gas Fired, installed 1996
	(2) Curing Oven, 0.5 MMBtu/hr each, Natural Gas Fired, installed 1995
	Preheat Oven, 1 MMBtu/hr, Natural Gas Fired, installed 1995
	Heat Treat Oven, 0.078 MMBtu/hr, Natural Gas Fired, installed before 1970
	Heat Treat Oven, 0.180 MMBtu/hr, Natural Gas Fired, installed before 1970
	Washer Dryer, 1.5 MMBtu/hr, Natural Gas Fired, installed 2008
	Drying Oven, 1.5 MMBtu/hr, Natural Gas Fired, installed 2008
	Cure Oven, 2.0 MMBtu/hr, Natural Gas Fired, installed 2008

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

PERMIT CONDITION PW001

10 CSR 10-6.065, Operating Permits
Voluntary Permit Limitation – 10 CSR 10-6.065 (2)(C) and (5)(A)

Emission Limitation:

The permittee shall emit less than one hundred (100) tons of Volatile Organic Compounds (VOC) from the entire installation in any consecutive 12-month period.

Monitoring/Recordkeeping:

1. The permittee shall calculate monthly and 12-month rolling total VOC emissions each month using Attachment D or equivalent forms approved by the Air Pollution Control Program to demonstrate compliance with the emission limit. All products containing VOC used in the entire installation shall be recorded.
2. The permittee shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include a Safety Data Sheet (SDS) for all materials used.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the recordkeeping shows that the installation exceeded the emission limitations.
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

PERMIT CONDITION PW002

10 CSR 10-6.060, Construction Permits Required
Construction Permit Number: 112008-010, Issued November 24, 2008

Emission Limitation:

SAF-Holland, Inc. shall emit less than ten (10) tons individually and less than twenty-five (25) tons combined of Hazardous Air Pollutants (HAPs) from the entire installation in any consecutive 12-month period.

Operational Limitation:

The permittee shall keep all chemicals (i.e. solvents, cleaners, etc.) used in the metals preparation and coating process in sealed containers whenever the chemicals are not in use. The permittee shall provide and maintain suitable, easily read, permanent markings on all chemical containers used with the equipment. [Construction Permit No. 112008-010]

Monitoring/Record Keeping:

1. The permittee shall maintain records of monthly and 12-month rolling total individual and combined HAP emissions using Attachments A and B or equivalent forms approved by the Air Pollution Control Program (APCP).
2. Records shall include each individual HAP identified on a SDS for the HAP containing products in use in the entire installation.
3. These records shall be made available immediately for inspection to Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
4. All records shall be maintained for five years.

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the recordkeeping shows that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

EP12 – Spray Paint Booth			
Emission Unit	Description	Manufacturer/Model #	Installation Date
EP12	Spray Paint Booth; MHDR = 0.0461 gal/hr coating mix	Binks	1996

PERMIT CONDITION 1

10 CSR 10-6.060, Construction Permits Required
Construction Permit Number: 0893-027, Issued August 11, 1993

Emission Limitation:

1. The permittee shall not exceed the usage of more than 15,000 gallons of primer in any consecutive 12-month period (Special condition #1)
2. The permittee shall now use a primer in which the volatile organic compound (VOC) content exceeds 4.62 pounds per gallon. (Special Conditions #2)
3. If the presence of toxic solvents in the ambient air is detected in quantity and duration that directly or approximately causes or contributes to injury to human, plant or animal, life or health or to property, or that unreasonably interferes with the enjoyment of life or use of property, or is a violation of a state rule, then the permittee shall immediately undertake a program that will correct the problem (taken from the Missouri Air Conservation Law, Chapter 643 RSMo.)(Special Condition #6)

Monitoring/Record Keeping:

1. Attachment H or equivalent forms shall be used to maintain monthly and rolling 12-month records detailing the amount (in gallons) and the VOC content (in pounds per gallon) of each primer used and the VOC emissions from the paint booth. (Special Condition #3)
2. These records shall be maintained for five (5) years and shall be made available to either the Director upon written request or Department inspection personnel upon verbal request. (Modified Special Condition #4)

Reporting:

1. The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the recordkeeping shows that the emission unit(s) exceeded the emission limitations(s).
2. The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

EP36 – Vac-U-Paint System			
Emission Unit	Description	Manufacturer/Model #	Installation Date
EP 36	Burn-Off Oven, 3 MMBtu/hr, natural gas	-	1996

PERMIT CONDITION 2

10 CSR 10-6.060, Construction Permits Required
Construction Permit No. 0296-003A

Operational Specification:

The permittee shall not burn Teflon®, chlorinated plastics, or trash in the heat cleaning oven. (Special Condition #1)

Monitoring/Record Keeping:

The permittee shall monitor and record all the materials being placed into the heat cleaning oven using Attachment J or an equivalent form.

Reporting:

The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

EP37 Metals Preparation and Coating Process	
Emission Unit	Description
EP37	NEW METALS PREPARATION AND COATING PROCESS; Equipment includes a dip tank coating process and a pneumatic coating process MHDR = 11.88 gal/hr; a 2.0 MMBtu/hr natural gas-fired drying oven; a 1.5 MMBtu/hr drying oven; a 1.5 MMBtu/hr washer oven

PERMIT CONDITION 3

10 CSR 10-6.060 Construction Permits Required
Construction Permit Number: 112008-010, Issued November, 24, 2008

Operational Specifications:

1. The permittee shall keep all chemicals (i.e. solvents, cleaners, etc.) used in the metals preparation and coating process in sealed containers whenever the chemicals are not in use. (Special Condition #1)
2. Use of Alternative Coatings/Paints for the Metals Preparation and Coating Process
   A. When considering using an alternative material for the metals preparation and coating process that is different than a material listed in the Application for Authority to Construct, the permittee shall calculate the potential emissions of volatile organic compounds (VOCs) and each individual HAP in the alternative material. (Special condition #3.A)
   B. The permittee shall seek approval from the Air Pollution Control Program before use of the alternative material in the following cases:
      i) If the potential VOC emissions for the alternative material is equal to or greater than 20.86 ton per year, or
      ii) If the potential emissions of each individual HAP for the alternative material is equal to or greater than its respective Screen Modeling Action Levels (SMAL), for any HAP with

SMAL less than ten (10) tons per year. A list of current SMAL values can be obtained at the following web address: http://www.dnr.mo.gov/env/apcp/docs/cp-hapraltbl6.pdf.

Monitoring/Record Keeping:
Attachment C or equivalent forms shall be used to show compliance with Operational Specification 2.A through 2.B of this permit condition. The permittee shall maintain all records required by this permit for not less than five (5) years and shall make them immediately available to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all alternative material used.

Reporting:
The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

Surface Coatings			
Emission Unit	Description	Manufacturer/Model #	Installation Date
EP-12	Manual Paint Spray Booth	Binks	1996
EP-31	Electro Static Paint Spray System	Binks	1996
EP-35 & EP-36	Vac-U-Paint Spray System	Vac-U-Paint, Inc.	-
EP-37	Materials Preparation and Coating Process	-	2008

PERMIT CONDITION 4
10 CSR 10-6.400, Restriction of Emission of Particulate Matter from Industrial Processes

Equipment and Operation Parameters:
1. The permittee shall operate the emission units using the fabric filter systems at all times.
2. The permittee shall maintain and operate the fabric filters in accordance with the manufacturer's specifications. The manufacturer's specifications shall be retained onsite. The fabric filters 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.
3. The permittee shall maintain the pressure drop across the fabric filters within the design conditions specified by the manufacturer's performance warranty.
   a) If the pressure drop falls out of this normal operating range, the permittee shall take corrective action to return the pressure drop to normal.
   b) The permittee shall observe a pressure drop reading within the manufacturer's specification following the installation of a new filter.
4. The permittee shall keep replacement filters on hand at all times and be made of fibers appropriate for the operating conditions that are expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

Monitoring
1. The permittee shall monitor and record the operating pressure drop across the fabric filters at least once every 24 hours using Attachment I or equivalent forms approved by the Air Pollution Control

Program. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
2. The permittee shall thoroughly inspect particle emission collection system for leaks and wear semi-annually.
3. If leaks or abnormal conditions are detected, the permittee shall implement appropriate measures for remediation within eight (8) hours.

Record Keeping:
1. The permittee shall maintain records of all daily pressure drop readings for each fabric filter.
2. The permittee shall maintain records of all inspections of each fabric filter.
3. The permittee shall maintain records of all fabric filter replacement and maintenance performed.
4. Attachments E and F contain logs including these record keeping requirements. These logs, or equivalents created by the permittee, must be used to certify compliance with this requirement.
5. All records shall be made available immediately for inspection to Department of Natural Resources' personnel upon request.

Reporting:
The permittee shall report any deviations from the limitations, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification required by Section V of this permit.

Surface Coatings			
Emission Unit	Description	Manufacturer/Model #	Installation Date
EP12	Manual Paint Spray Booth	Binks	1996
EP31	Electrostatic Paint Spray System	Binks	1996
EP35 & EP36	Vac-U-Paint Spray System	Vac-U-Paint, Inc.	-
EP37	Material Preparation and Coating Process	-	2008
EPA1	Electric Arc Welding		
EP14	Lumber Sawing Pallet Wood		20

PERMIT CONDITION 5
10 CSR 10-6.220
Restriction of Emissions of Visible Air Contaminants

Emission Limitations:
1. The permittee shall not cause or permit to be discharged into the atmosphere from any source any visible emissions with an opacity greater than 20%.
2. Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any sixty (60) minutes air contaminants with an opacity up to 40%.

Monitoring/Record Keeping:
1. The permittee shall conduct opacity readings on this emission unit using the procedures contained in U.S. EPA Test Method 22. At a minimum, the observer should be trained and knowledgeable about the effects of 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 emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.

2. The following monitoring schedule must be maintained:
   a) Weekly observations shall be conducted for a minimum of eight consecutive weeks after permit issuance. Should no violation of this regulation be observed during this period then-
   b) Observations must be made once every two (2) weeks for a period of eight weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period then-
   c) Observations must be made once per month. If a violation is noted, monitoring reverts to weekly.
3. If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.
4. Issuance of renewal Operating Permit does not affect the monitoring schedule.
5. The permittee shall maintain records of all observation results using Attachment G (or its equivalent), noting:
   a) Whether any air emissions (except for water vapor) were visible from the emission units;
   b) All emission units from which visible emissions occurred;
   c) Whether the visible emissions were normal for the process;
   d) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
   e) The permittee shall maintain records of all U.S EPA Method 9 opacity test performed.

Reporting:

Reports of any deviations from or exceedance of any of the terms imposed by this regulation, or any malfunction which causes a deviation from or exceedance of this regulation shall be submitted annually, in the annual monitoring report and annual compliance certification, as required by Section V of this permit.

IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The following is only an excerpt from the regulation or code, and is provided for summary purposes only

10 CSR 10-6.045 Open Burning Requirements

1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
2) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.
3) Reporting and Recordkeeping. New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart CCCC establishes certain requirements for incinerators that burn wood trade waste. These requirements are established in 40 CFR 60.2245-60.2260. The provisions of 40 CFR part 60 Subpart CCCC promulgated as of September 22, 2005 shall apply and are hereby incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401. To comply with NSPS 40 CFR 60.2245-60.2260, sources must conduct an annual Method 9 test. A copy of the annual Method 9 test results shall be submitted to the director.
4) Test Methods. The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR part 60, Appendix A–Test Methods, Method 9–Visual Determination of the Opacity of Emissions from Stationary Sources. The provisions of 40 CFR part 60, Appendix A, Method 9 promulgated as of December 23, 1971 is incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
   a) Name and location of installation;
   b) Name and telephone number of person responsible for the installation;
   c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
   d) Identity of the equipment causing the excess emissions;
   e) Time and duration of the period of excess emissions;
   f) Cause of the excess emissions;
   g) Air pollutants involved;
   h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
   i) Measures taken to mitigate the extent and duration of the excess emissions; and
   j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.

2) The permittee shall submit the paragraph 1 information list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.
4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(5)(B)1.A(III)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)3.B]

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

1) The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.
2) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

10 CSR 10-6.100 Alternate Emission Limits

Proposals for alternate emission limitations shall be submitted on Alternate Emission Limits Permit forms provided by the department. An installation owner or operator must obtain an Alternate Emission Limits Permit in accordance with 10 CSR 10-6.100 before alternate emission limits may become effective.

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

1) The permittee shall submit full emissions report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the director.
2) The permittee may be required by the director to file additional reports.
3) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
4) The permittee shall submit a full EIQ for the 2014, 2017, 2020, and 2023 reporting years. In the interim years the installation may submit a Reduced Reporting Form; however, if the installation's emissions increase or decrease by more than five tons when compared to their last submitted full EIQ, the installation shall submit a full EIQ rather than a Reduced Reporting Form.
5) In addition to the EIQ submittal schedule outlined above, any permit issued under 10 CSR 10-6.060 section (5) or (6) triggers a requirement that a full EIQ be submitted in the first full calendar year after the permitted equipment initially operates.
6) The fees shall be payable to the Department of Natural Resources and shall be accompanied by the emissions report.
7) The permittee shall complete required reports on state supplied EIQ forms or electronically via MoEIS. Alternate methods of reporting the emissions can be submitted for approval by the director. The reports shall be submitted to the director by April 1 after the end of each reporting year. If the full emissions report is filed electronically via MoEIS, this due date is extended to May 1.
8) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
9) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
   a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
   b) Paving or frequent cleaning of roads, driveways and parking lots;
   c) Application of dust-free surfaces;
   d) Application of water; and
   e) Planting and maintenance of vegetative ground cover.

Monitoring:

The permittee shall conduct inspections of its facilities sufficient to determine compliance with this regulation. If the permittee discovers a violation, the permittee shall undertake corrective action to eliminate the violation.

The permittee shall maintain the following monitoring schedule:

1) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
2) Should no violation of this regulation be observed during this period then-
   a) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
   b) If a violation is noted, monitoring reverts to weekly.
   c) Should no violation of this regulation be observed during this period then-
      i) The permittee may observe once per month.
      ii) If a violation is noted, monitoring reverts to weekly.
3) If the permittee reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner to the initial monitoring frequency.

Recordkeeping:

The permittee shall document all readings on Attachment G, or its equivalent, noting the following:

1) Whether air emissions (except water vapor) remain visible in the ambient air beyond the property line of origin.
2) Whether equipment malfunctions contributed to an exceedance.
3) Any violations and any corrective actions undertaken to correct the violation.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.
2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-6.165 Restriction of Emission of Odors

This requirement is not federally enforceable.

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the department to monitor training provided to employees. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the department. Each person who offers training for asbestos abatement occupations must first obtain accreditation from the department. Certain business entities that meet the requirements for state-approved exemption status must allow the department to monitor training classes provided to employees who perform asbestos abatement.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
   a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
   b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
   c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.

d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.

2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
   a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
   b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
   c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
   d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
   e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
   f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.
4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.
5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR part 82*

10 CSR 10-6.280 Compliance Monitoring Usage

1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
   c) Any other monitoring methods approved by the director.
2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and

c) Compliance test methods specified in the rule cited as the authority for the emission limitations.

3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
   a) Applicable monitoring or testing methods, cited in:
      i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
      ii) 10 CSR 10-6.040, "Reference Methods";
      iii) 10 CSR 10-6.070, "New Source Performance Standards";
      iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
   b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

10 CSR 10-6.065, §(5)(E)2 and §(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.C General Record Keeping and Reporting Requirements

1) Record Keeping
   a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
   b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
2) Reporting
   a) All reports shall be submitted to the Air Pollution Control Program, Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
   b) The permittee shall submit a report of all required monitoring by:
      i) April 1st for monitoring which covers the January through December time period.
      ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
   c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit.
   d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
      i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7 of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.
      ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.

iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's annual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.

e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.

f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065 §(5)(C)1 and §(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

1) June 21, 1999;
2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(5)(C)1.A General Requirements

1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted under this rule.
6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit.

10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios

None.

10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) Compliance Requirements

1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
   a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
   b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
   d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
   a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
   b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances must be included in the compliance certifications. The compliance certification shall include the following:
   a) The identification of each term or condition of the permit that is the basis of the certification;
   b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
   c) Whether compliance was continuous or intermittent;
   d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
   e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)7 Emergency Provisions

1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions

limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:

a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
b) That the installation was being operated properly,
c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.

2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(5)(C)5 Off-Permit Changes

1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Off-permit changes shall be subject to the following requirements and restrictions:
   a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is a Title I modification; Please Note: Changes at the installation which affect the emission limitation(s) classifying the installation as an intermediate source (add additional equipment to the record keeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.
   b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change; and
   c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Bjoern Meyer, Plant Manager. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause

This permit may be reopened for cause if:

1) The Missouri Department of Natural Resources (MDNR) or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
2) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
   a) The permit has a remaining term of less than three years;
   b) The effective date of the requirement is later than the date on which the permit is due to expire; or
   c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
3) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065 §(5)(E)1.A and §(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

ATTACHMENT A
Monthly Combined HAPs Tracking Record

(a) Material used (Name, HAP CAS #)	(b) Amount of Material Used	(c) Density (Pounds per Gallon)	(d) Combined HAP Content (Weight %)	(e) Combined HAP Emissions (Tons)

Electric Arc Welding (EPA1)	(f) Amount of Monthly Throughput (1000 lbs)	(g) Emission Factor (lb/1000 lbs)	(h)
		0.32	
Total Natural Gas Combustion	**(i) Amount of Monthly Throughput (MMcf)**	**(j) Emission Factor (lb/MMcf)**	**(k)**
		1.8885	

(l) Total HAP emissions calculated for this month in tons:	
(m) 12-month rolling total HAP emissions total from previous month's Attachment A in tons:	
(n) Monthly HAP emissions total (l) from previous year's Attachment A in tons:	
(o) Current 12-month rolling total HAP emissions in tons: [(l) + (m) - (n)]	

(a) Record the names of all material used this month.
(b) Record the respective gallons, pounds, or tons of material used this month.
(c) Record the respective density of materials from their SDS used this month.
(d) Record the respective HAP content of the materials used this month. Obtain HAP content of material from their respective MSDS. If a range is given for the HAP content, use the highest in the range. If the material contains multiple individual HAPs, the combined HAP content (wt%) shall be obtained as the sum of all individual HAP contents (wt%).
(e) Calculate the HAP emissions.
If material usage is in gallons- [b] x [c] x [d] x [0.0005] = [e]
(f) Record the amount of monthly throughput for the Electric Arc Welder.
(g) HAP emission factor for the Electric Arc Welder taken from SCC 30905254.
(h) Calculate HAP emission from the Electric Arc Welder: (h) = [(f) x (g)] / 2000
(i) Record the MMcf of natural gas used by SAF-Holland, Inc.
(j) HAP emission factor for natural gas combustion was taken from AP-42, Section 1.4.
(k) Calculate HAP emission from natural gas combustion: (k) = [(i) x (j)] / 2000
(l) Sum each individual HAP emission for this month: (l) = [sum of all HAP emission in (e)] + (h) + (k)
(m) Record the 12-month rolling total HAP emission (o) from last month's Attachment A.
(n) Record the Monthly HAP emissions total (l) from previous year's Attachment A.
(o) Calculate the current 12-month rolling total HAPs emissions. **A value of less than 25.0 tons of combined HAPs indicates compliance.**

ATTACHMENT B
Monthly Individual HAPs Tracking Record

HAP Name:_____ CAS No.:_____

This sheet covers the month of _____ in the year _____.

(a)	(b)
List materials from attachment A which emit this specific HAP (Name, Type)	Individual HAP emissions from Attachment A [e] in Tons

Electric Arc Welding	(c) Monthly Throughput(1000 lbs)	(d) Emission Factor (lb/1000 lbs)	(e) Ind. HAP emissions (tons)
Natural Gas Combustion	**(f) Monthly Throughput (mmcf)**	**(g) Emission Factor (lbs/mmcf)**	**(h) Ind. HAP emissions (tons)**

(i) Total Individual HAP emissions calculated for this month, in Tons	
(j) 12-month rolling Individual HAP emissions total (l) from previous month's Attachment B, in Tons	
(k) Monthly Individual HAP emissions total (i) from previous year's Attachment B, in Tons	
(l) Current 12-month rolling total emissions this specific HAP in Tons: [(j) + (k) - (l)]	

(a) Record all materials that emit this specific HAP from this installation;
(b) Record the amount of HAP emissions already calculated for Attachment A in [e] in Tons;
(c) Record the amount of monthly throughput from the Electric Arc Welder
(d) Record the specific HAP emission factor for the Electric Arc Welder taken from SCC 30905254 if applicable.
(e) Calculate the HAP emissions from the Electric Arc Welder: (f) = [(c) x (d)] / 2000
(f) Record the amount of monthly throughput of natural gas used by SAF-Holland, Inc.
(g) Record the specific HAP emission factor for Natural Gas Combustion taken from AP-42, Section 1.4 if applicable.
(h) Calculate the HAP emissions from Natural Gas Combustion: (h) = [(g) x (h)] / 2000
(i) Sum each HAP emission for this month: (i) = [sum of all HAP emission in (b)] + (e) + (h)
(j) Record the 12-month HAP emission total (l) from previous month's Attachment B, in Tons
(k) Record the Monthly HAP emissions total (i) from previous year's Attachment B, in Tons.
(l) Calculate the current 12-month HAP emission total in Tons: [(i) + (j) – (k)]. A value less than 10.0 tons of HAPs indicates compliance.

ATTACHMENT C

Individual Hazardous Air Pollutants (HAP) and Volatile Organic Compounds (VOC) Calculation Sheet

Date:_____

Copy this sheet as needed.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6 (a)	Column 7 (b) (c)	Column 8	Column 9 (d)
Material Used (Name, Type)	HAP Name and CAS #	Maximum Application Rate (Gallons per hour)	Density (Pounds per gallon)	Individual HAP Content (Weight %)	Individual Total HAP Emissions (Tons per Year)	Screen Modeling Action Level (Tons per Year)	VOC Content (Weight %)	VOC Emissions (Tons per Year) for the Material
Example: paint ABC	Glycol Ether	0.98	12.34	4	2.12	5	32	16.74

Instructions: Calculate the potential emissions of each individual HAP contained in the material

(a) [Column 3] x [Column 4] x [Column 5] x [4.38] / 100 = [Column 6].

(b) Screen Modeling Action Levels (SMAL) for individual HAPs can be found at http://www.dnr.mo.gov/env/apcp/docs/cp-hapraltbl6.pdf

(c) If [Column 6] is greater than [Column 7], obtain permission from Air Pollution Control Program before using this material.

(d) [Column 3] x [Column 4] x [Column 8] x [4.38] / 100 = [Column 9]

(e) If a range of values is provided for HAP Content or VOC content, use the highest value in the range.

(f) Density, Individual HAP Content, and VOC Content should be obtained from the SDS, and if a range of values is provided, use the highest value in the range to demonstrate compliance.

If [Column 9] is greater than 20.86 tons per year, obtain permission from Air Pollution Control Program before using this material.

ATTACHMENT D
Monthly VOC Emission Tracking Record

This sheet covers _____ (Copy this sheet as needed.)
(month, year)

(a)	(b)	(c)	(d)	(e)
Material (Name, Product #)	Amount of Material used (gallons/month)	Density (lb/gal)	VOC Content (Weight %)	VOC Emissions (MMscf/month)
Example: Cyan Blue Base/D947 (90002141/54447-116)	10	7.73	73.14%	0.0283

Total Natural Gas Combustion	(f) Amount of Natural Gas Used (MMcf/month)	(g) Emission Factor (lb/MMcf)	(h)
		5.5	

(i) Total VOC Emissions Calculated for this Month in Tons	
(j) 12-month VOC Emissions Total (l) from Previous month's Worksheet in Tons	
(k) Monthly VOC Emissions Total (i) from Previous Year's Worksheet in Tons	
(l) Current 12-month Total of VOC Emissions in Tons: (l) = [(i) + (j) - (k)]	

(a) Record the names of each paint, coating, dilution solvent, resin, varnish, finishing product or solvent for which the SDS indicates VOC with (VOCs) used as a separate entry in the table that were used this month.
(b) Record the respective gallons of paint, coating, dilution solvent, resin, varnish, finishing product or solvent used this month. If specific gravity is provided, Density (lb/gal) = specific gravity x 8.33.
(c) Record the respective density of paint, coating, dilution solvent, resin, varnish, finishing product or solvent from the SDS
(d) Record the Respective VOC content of paint, coating, dilution solvent, resin, varnish, finishing product or solvent. Obtain VOC content of paint, coating, dilution solvent, resin, varnish, finishing product or solvents from their respective SDS. If a range is given for the VOC content, use the highest in the range.
(e) Calculate VOC emissions from paint, coating, varnish, inks, solvents, additives, etc: (e) = [(b) x (c) x (d)] / 2000.
(f) Record the MMcf of natural gas used by SAF-Holland, Inc. during this month.
(g) VOC emission factor for natural gas combustion taken from SCC 10200603.
(h) Calculate VOC emissions from natural gas combustion: (h) = [(f) x (g)] / 2000
(i) Sum each individual VOC emissions for this month: (i) = [sum of all VOC emissions in (e)] + (h)
(j) Record the 12-month rolling total VOC emissions (l) from last month's Attachment D.
(k) Record the monthly VOC emissions total (i) from previous year's Attachment D.

Calculate the current 12-month rolling total VOC emissions. **A value of less than 100.0 tons of VOC indicates compliance.**

ATTACHMENT E
Inspection/Maintenance/Repair/Malfunction Log

Emission Unit # _____

Date/Time	Inspection/Maintenance Activities	Malfunction Activities					
		Malfunction	Impact	Duration	Cause	Action	Initials

ATTACHMENT F
Fabric Filter Daily Pressure Drop Log

Date	Time	Inspector's Initials	Fabric Filter ID	Pressure Drop Reading (in w.c.)	Manufacture's Pressure Drop Range	Date	Time	Inspector's Initials	Fabric Filter ID	Pressure Drop Reading (in w.c.)	Manufacture's Pressure Drop Range

ATTACHMENT G
Fugitive Emission Observations

Date	Time	Emission Source	Visible Emissions		Excess Emissions		
			No	Yes[1]	Cause	Corrective Action	Initial

[1]If there are visible emissions, the permittee shall complete the excess emissions columns.

ATTACHMENT H
Monthly VOC Emission Tracking Record for EP12

This sheet covers _____ (Copy this sheet as needed.)
(month, year)

(a) Material (Name, Product #)	(b) Amount of Material used (gallons/month)	(c) Density (lb/gal)	(d) VOC Content (Weight %)	(e) VOC Emissions (Tons)
Example: Cyan Blue Base/D947 (90002141/54447-116)	10	7.73	73.14%	0.0283
(f) Total VOC Emissions Calculated for this Month in Tons				
(g) 12-month rolling VOC Emissions Total (i) from Previous month's Worksheet in Tons				
(h) Monthly VOC Emissions Total (f) from Previous Year's Worksheet in Tons				
(i) Current 12-month rolling Total of VOC Emissions in Tons: (i) = [(f) + (g) - (h)]				

(a) Record the names of each paint, coating, dilution solvent, resin, varnish, finishing product or solvent with (VOCs) used as a separate entry in the table that were used this month.
(b) Record the respective gallons of paint, coating, dilution solvent, resin, varnish, finishing product or solvent used this month.
(c) Record the respective density of paint, coating, dilution solvent, resin, varnish, finishing product or solvent from the SDS. If specific gravity is provided, density (lb/gal) = specific gravity x 8.33.
(d) Record the Respective VOC content of paint, coating, dilution solvent, resin, varnish, finishing product or solvent. Obtain VOC content of paint, coating, dilution solvent, resin, varnish, finishing product or solvents from their respective SDS. If a range is given for the VOC content, use the highest value in the range.
(e) Calculate VOC emissions from inks, solvents and additives: (e) = [(b) x (c) x (d)] / 2000.
(f) Sum each individual VOC emissions for this month: (f) = sum of all VOC emissions in (e)
(g) Record the 12-month rolling total VOC emissions (i) from last month's Attachment H.
(h) Record the monthly VOC emissions total (h) from previous year's Attachment H.

Calculate the current 12-month rolling total VOC emissions. **A value of less than 34.5 tons of VOC indicates compliance.**

Attachment I

Pressure Drop Log for Fabric Filters

Control Device ID	Date (Month/Day/Year)	Pressure Drop (inches water)	Within specifications? (Yes/No)

Attachment J
Materials Placed in Heat Cleaning Oven Tracking

Date (Month/Day/Year)	List all materials placed into Oven for that day

STATEMENT OF BASIS

Voluntary Limitations
In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a part 70 operating permit.

Permit Reference Documents
These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

1) Intermediate Operating Permit Application, received June 6, 2014;
2) 2013 Emissions Inventory Questionnaire, received April 3, 2014;
3) 2012 Emissions Inventory Questionnaire, received April 1, 2013;
4) 2011 Emissions Inventory Questionnaire, received March 30, 2012;
5) 2010 Emissions Inventory Questionnaire, received March 30, 2011;
6) 2009 Emissions Inventory Questionnaire, received June 10, 2010;
7) Construction Permit 0893-027;
8) Construction Permit 0296-003;
9) Construction Permit 0296-003A;
10) Construction Permit 112008-010;
11) Application for Authority to Construct, Project 2008-07-088;
12) Permit to Operate OP2009-042;
13) WebFIRE; and
14) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits
In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

None.

Other Air Regulations Determined Not to Apply to the Operating Permit
The Air Pollution Control Program (APCP) has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits*
This rule is not applicable because the installation is in an ozone attainment area.

10 CSR 10-6.250, *Asbestos Projects – Certification, Accreditation and Business Exemption Requirements*

The installation is not subject to these regulations unless they undertake any projects that involve any asbestos containing materials.

Construction Permit History

The following is a brief history of construction permits issued for this installation:

Construction Permit Number 0893-027

This permit was issued on August 11, 1993 to authorize the installation of one (1) additional paint spray booth to spray primers. There are several special conditions associated with the construction permit. The installation cannot use more than 15,000 gallons of primer in any consecutive 12-month period, and the VOC content of the primer shall not exceed 4.62 pounds per gallon. Monthly records of these values shall be kept for each primer used in the paint booth. The limit on Attachment H states that a value of less than 34.5 tons of VOC indicates compliance. This value was derived based on the limits of 15,000 gallons of primer and a maximum VOC content of 4.62 pounds per gall in the primer.

$$15{,}000\ gal * 4.62\ \frac{lb}{gal} * \frac{1\ ton}{2000\ lb} = 34.65\ tons$$

Construction Permit 0296-003

This permit was issued on January 31, 1996 to authorize the construction of an additional paint line and associated equipment. The new line consist of heated alkaline wash system, a heated iron phosphate wash system, a seal rinse system, a drying oven, two painting systems, a preheat oven, two curing ovens, and a heat cleaning oven, with a special condition that the installation shall not burn Teflon®, chlorinated plastics, or trash in the heat cleaning oven.

Construction Permit Number 0296-003A

This permit was issued on December 29, 2006 to amend construction permit 0296-003 to add an installation wide HAP emission limit of ten (10) tons individually and twenty-five (25) tons combined in any consecutive 12-month rolling average period. The amendment was requested due to a modification to the painting operation when the facility switched coatings from a solvent based coating to an aqueous based coating.

Construction Permit Number CP112008-010

This permit was issued on November 24, 2008 to authorize the installation of equipment for a new metals preparation and coating process. Special Condition 3.C. contains a typographical error. As written in the construction permit Special Condition 3.C states, "Attachment C or equivalent forms shall be used to show compliance with Special Condition 2.A through 2.B." However, the intent of this recordkeeping attachment is to demonstrate compliance with Special Condition 3.A and 3.B. In this operating permit the type has been corrected to reflect the intent.

New Source Performance Standards (NSPS) Applicability

40 CFR Part 60 Subpart Dc, *Standards of Performance for Small Industrial Steam Generating Units*

The regulation applies to steam generating units for which construction, modification, or reconstruction commenced after June 9, 1989 and that has a maximum design heat input of 29 megawatts (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).

The facility is not subject to this subpart based on §60.40c(a). From the 2013 EIQ, the maximum design heat input is less than ten (10) MMBtu/hr so this regulation does not apply.

Maximum Achievable Control Technology (MACT) Applicability

40 CFR Part 63 Subpart T, *National Emission Standards for Halogenated Solvent Cleaning*

The regulation applies to individual batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machines that use any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform, or any combination of these halogenated HAP solvent, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent.

This subpart does not apply to this installation since the installation does not use any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform as a cleaning or drying agent.

40 CFR Part 63 Subpart MMMM, *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products*

This subpart establishes national emission standards for hazardous air pollutants for miscellaneous metal parts and products surface coating facilities.

The subpart does not apply to the installation since it is not a major source for HAPs per §63.3881(b).

40 CFR Part 63 Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*

This subpart establishes national emission limitations and work practice standards for HAPs emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP.

This subpart does not apply to this installation since it is not a major sources of HAPs per §63.7485.

40 CFR Part 63 Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*

This subpart establishes national emission standards for HAPs for area sources involved paint stripping and miscellaneous surface coating operations.

This subpart does not apply to this installation since the installation does not perform paint stripping using methylene chloride or perform spray application of coatings that contain compounds of chromium, lead, manganese, nickel, or cadmium per §63.11170(a)(1) and §63.11170(a)(2). In the event that a paint stripping method is used that uses methylene chloride or perform spray application of coatings that contain the listed metal, the permittee will need to submit a permit amendment since the facility will then be subject to this regulation.

40 CFR Part 63 Subpart JJJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*

This subpart applies to industrial, commercial, or institutional boilers located at, or is part of, an area source of HAPs.

This subpart does not apply to this installation since each boiler used at the installation burns only gaseous fuels not combined with any liquid or solid fuels per §63.11195(e).

40 CFR Part 63 Subpart XXXXXX, *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories*

This subpart applies to area sources that primarily engage in operations listed in section §63.11514 (a)(1) through (a)(9).

This subpart does not apply to this installation since the installation is not primarily engaged in the operations in one of the nine source categories listed in §63.11514 (a)(1) through (a)(9).

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

In the permit application and according to APCP records, there was no indication that any Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements apply to this installation. The installation is subject to these regulations if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

None.

Updated Potential to Emit for the Installation

Pollutant	Potential to Emit (tons/yr)[1]
CO	6.95
Individual HAPs	<10.0
Total HAPs	<25.0
NO_x	8.27
PM_{10}[2]	14.37
$PM_{2.5}$[2]	12.72
SO_x	0.05
VOC	<100.0

[1]Each emission unit was evaluated at 8,760 hours of controlled annual operation unless otherwise noted. PTE includes emission limitations of the permit.

[2]The emissions for EP12, EP31, and EP35-EP37 were considered both PM_{10} and $PM_{2.5}$ since they were based off the MSDS values for density and MHDR. The emission units were given 99% control efficiency for PM10 and PM2.5 as they are required to operate fabric filters by Permit Condition 4.

Other Regulatory Determinations

10 CSR 10 – 6.220, *Restriction of Emissions of Visible Air Contaminants*

This rule establishes the maximum allowable opacity of visible air contaminant emissions.

Although the installation has emission sources that emit visible air contaminants, opacity monitoring is not required in this permit. EP-14, Lumber Sawing – Pallet Wood, has PM PTE less than 0.0004 lbs/hr. EPA1, Electric Arc Welding has PM PTE less than 0.36 lbs/hr. All combustion units are natural gas fired with potential emissions less than 0.5 lb PM/hr. Due to these potential emission rates, visible emissions are not expected. Therefore no monitoring or recordkeeping is required for these units.

The painting systems have a PM PTE of 1.3 lbs/hr, therefore monitoring is required of these emission units.

10 CSR 10 – 6.260, *Restriction of Emission of Sulfur Compounds*

This rule establishes the maximum allowable concentration of sulfur compounds in source emissions and in the ambient air.

This rule does not apply to any of the combustion equipment at the installation since all are fueled by pipeline grade natural gas per 6.260(1)(A)2.

10 CSR 10 – 6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*

The rule provides conditional exemptions that can be met by operation, monitoring, and maintenance procedures. In order for the conditional exemption to be maintained, fabric filter systems must be used at all time in EP-12, EP-31, EP-35, and EP-37 which is required in Permit Condition 4. By remaining in compliance with Permit Condition 4, the permittee will remain in compliance with 10 CSR 10-6.400.

EP-14 and EPA1 meet the conditional exemption requirement of §6.400(1)(B)12 as demonstrated below. §6.400(1)(B)12 states that emission units that at maximum design capacity have a potential to emit less than one-half (0.5) pounds per hours of particulate matter are exempt from this regulations.

EU #	Description	MHDR (MoEIS)	Emission Factor[1]	Potential to Emit
EP-14	Lumber Sawing – Pallet Wood	0.01 (tons/hr)	0.2 (lb PM/ton)	0.002 (lb/hr)
EPA1	Electric Arc Welding	0.07 (1000 lb/hr)	5.2 (lb PM_{10} /1000 lb)	0.364 (lb PM_{10}/hr)

[1]The EF for EP-14 was taken from AP 42 Table 10.6.4-7 and the EF for EPA1 was taken from WebFIRE using SCC 30905254.

EP-35 and EP-36 (Vac-U-Paint Spray System) meet the conditional exemption requirements of §6.400(1)(B)14 by meeting Permit Condition 4. Compliance is assured with the equipment and operating permit parameters in the permit condition. §6.400(1)(B)14 states that coating operations equipped with a control system designed to control at least ninety-five percent (95%) of the particulate overspray provided the system is operated and maintained in accordance with manufacturers' specifications or comparable maintenance procedures that meet or exceed manufacturers' specifications.

10 CSR 10 – 6.405, *Restriction of Particulate Matter Emissions from Fuel Burning Equipment Used for Indirect heating*

This rule restricts the emission of particulate matter for installations in which fuel is burned for the primary purpose of producing steam, hot water, or hot air or other indirect heating of liquids, gases, or solids and the products of combustion do not come into direct contact with process materials.

This rule does not apply to any of the indirect heating units at the installation since all are fueled by natural gas per 6.405(1)(C).

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons.

1) The specific pollutant regulated by that rule is not emitted by the installation.
2) The installation is not in the source category regulated by that rule.
3) The installation is not in the county or specific area that is regulated under the authority of that rule.
4) The installation does not contain the type of emission unit which is regulated by that rule.
5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

MEMORANDUM

DATE: March 11, 2015

TO: 2014-06-030

FROM: Jacob Robinett, Operating Permit Unit

SUBJECT: Response to Public Comments

Ten comments were received during the public comment period. Comments were received from Robert Cheever, Environmental Engineer for U.S. EPA Region 7, on Friday, December 5, 2014. The comments are addressed in the order in which they appear within the letter.

Comment #1: Plant wide Permit Condition PW001 establishes a voluntary annual limit of volatile organic compounds (VOCs) "for the entire installation" in any "consecutive 12-month rolling average period." For long-term emission limitations to be practically enforceable, compliance must be determined, at a minimum, on a 12-month rolling total basis; not on a rolling average basis. Therefore, EPA recommends MDNR change the emission limitation to a rolling total basis. Additionally, if this limitation is being placed on the equipment on-site at the time of the 2006 operating permit application, then EPA recommends MDNR specify the emission units which make up the "entire installation" subject to the VOC emission limitation.

Response to Comment: The emission limitation has been changed to a "consecutive 12-month period" instead of a "consecutive 12-month rolling average period." Sentences have been added to the list of Emission Points with Limitations and Emission Points without Limitations to explain what equipment is to be considered for plant wide limitations.

Comment #2: Plant wide Permit Condition PW002 establishes an annual limit of hazardous air pollutants (HAPs) "for the entire installation" in any "consecutive 12-month rolling average period." For long-term emission limitations to be practically enforceable, compliance must be determined, at a minimum, on a 12-month rolling total basis; not on a rolling average basis. Therefore, EPA recommends MDNR change the emission limitation to a rolling total basis. Additionally, if this limitation is being placed on the equipment on-site at the time when construction permits #0296-003A and #112008-010 were issued, then EPA recommends MDNR specify the emission units which make up the "entire installation" subject to the HAP emission limitation.

Response to Comment: The emission limitation has been changed to a "consecutive 12-month period" instead of a "consecutive 12-month rolling average period." Sentences have been added to the list of Emission Points with Limitations and Emission Points without Limitations to explain what equipment is to be considered for plant wide limitations.

Comment #3: Plant wide Permit Condition PW003 incorporates the applicable requirements associated with 10 CSR 10.6.220 and includes emission limitations and deviation reporting. However, the permittee is not required to conduct the required monitoring and record keeping applicable to 10 CSR 10-6.220. EPA is concerned as to how a permittee determines and reports deviations without performing monitoring. In many permit to operate, MDNR customarily includes the requirements associated with 10 CSR 10-6.220 in Section IV; Core Permit Requirements; which include the minimum monitoring and record keeping necessary to verify compliance. EPA suggests MDNR reconsider including the basic monitoring and record keeping normally associated with 10 CSR 10-6.220 included in most Section IVs. Also, EPA suggest that the emission limitations be worded to indicate the "permittee" is responsible and not "owner or other person."

Response to Comment: The permit has been modified to indicate the "permittee" is responsible and not "owner or other person." The permit has been modified as requested, as well as monitoring and recordkeeping have been included.

Comment #4: Emission limitation #2 in Permit Condition 1 requires "the applicant" to undertake a program to correct the problem. This requirement is a "permit condition" in an "operating permit" and EPA recommends MDNR revise the wording to reflect.

Response to Comment: "The applicant" has been changed to "the permittee."

Comment #5: Monitoring and record keeping requirements in Permit Condition 1 require the permittee to maintain monthly and rolling 12-month records detailing the amount and VOC content of materials used in emission unit EP12. However, MDNR's customary practice is to include, as an attachment, a sample data collection methodology to be used by the permittee to track compliance. Therefore, EPA recommends MDNR and SAF-Holland provide the appropriate compliance verification datasheet used to track the monthly and 12-month total VOC from EP12.

Response to Comment: Attachment H has been added to the permit to provide a tracking sheet for the monthly and 12-month total VOC emissions from EP12. The permit condition has been modified to reference the attachment.

Comment #6: Permit Condition 2 incorporates one applicable requirement from construction permit #0296-003A; while Permit Condition PW002 incorporates other applicable requirements from construction permit #0296-003A. EPA recommends MDNR move the applicable requirement in permit condition 2 to permit condition PW002. If not, then permit condition 2 should include a monitoring and or record keeping requirement to verify compliance with the operational specification.

Response to Comment: The HAP limitation is included in Permit Condition PW002 because it applies to all emission units with the potential to emit HAPs. The limit in Permit Condition 2 applies only to the heat cleaning oven. Permit Condition 2 has been modified by adding monitoring/record keeping and reporting requirements.

Comment #7: The wording of monitoring and record keeping requirement included in Permit Condition 3 does not agree with the explanation given under Construction Permit #112008-010 in the Construction Permit History portion of the Statement of Basis. EPA suggests MDNR review and coordinate the wording so that there is agreement between the Statement of Basis and Permit Condition 3.

Response to Comment: Statement of Basis has been revised to clarify and explain the Special Conditions of Construction Permit #112008-010.

Comment #8: The items listed under the equipment and operation parameters portion of Permit Condition 4 appear to be the listing of tasks and EPA would suggest to MDNR that the wording be modified to indicate that these are requirements that the permittee must undertake.

Response to Comment: The wording of the items listed under the equipment and operation parameters portion of Permit Condition 4 have been modified to clarify that these are requirements that the permittee must undertake.

Comment #9: It appears that some of the emission factors used within the attachments for compliance verification came from WebFIRE; however, WebFIRE is not shown as a permit reference document in the Statement of Basis. EPA suggests MDNR add WebFIRE to the list of permit reference documents.

Response to Comment: The Statement of Basis has been modified to add WebFIRE to the list of permit reference documents.

Comment #10: The Other Regulatory Determinations section in the Statement of Basis includes a discussion on 10 CSR 10-6.400. The sentence directly before the first tabular presentation says: "The units are in compliance as demonstrated below by having a controlled PTE less than the Emission Rate of the unit." MDNR appears to indicate this statement is included in §6.400(1)(B)14. However, §6.400(1)(B)14 says: "Coating operations equipped with a control system designed to control at least ninety-five percent (95%) of the particulate overspray provided the system is operated and maintained in accordance with manufacturers specification or comparable maintenance procedures that meet or exceed manufacturers' specifications." §6.400(1)(B)14 by itself would appear to exempt these two (2) emission points and EPA is unclear as to the origin of this statement. EPA suggests MDNR review the discussion under 10 CSR 10-6.400 and remove extraneous statements.

Response to Comment: The Statement of Basis has been modified to clearly reflect the exemptions.

From: Zayudis, Peter [DNR]
To: Webber, Robert
Subject: Synthetic Minor Source Permit Comments-Thurston Manufacturing
Date: Tuesday, April 12, 2016 4:13:06 PM
Attachments: removed.txt
IDNR_Comments_ThurstonMFG_SyntheticMinorSourcePermit_041216.pdf

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Bob,

Here are comments regarding the Thurston Manufacturing Synthetic Minor Source Permit. You will receive a hardcopy in the mail. If you have any questions, please let me know.

Thanks

Pete

PETER ZAYUDIS Environmental Engineer Senior
Iowa Department of Natural Resources
P 515.725.9578 | F 515.725.9501 | Email.
peter.zayudis@dnr.iowa.gov
Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324
www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692
WWW.IOWADNR.GOV
Leading Iowans in Caring for Our Natural Resources.

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

CERTIFIED MAIL

Bob Webber
Tribal NSR Coordinator
Air Permitting & Compliance Branch
Air and Waste Management Division
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard, Lenexa KS 6619

Subject: Comments on Proposed Synthetic Minor Source Permit for Thurston Manufacturing Company, Permit R7-TMNSR-FY16-001

Dear Mr. Webber:

The Iowa Department of Natural Resources (DNR) appreciates the opportunity to provide comments regarding the draft Synthetic Minor Source permit for the Thurston Manufacturing Company facility located at 1708 H Avenue, Thurston, Nebraska 68062 within the exterior boundaries of the Winnebago Indian Reservation.

Thurston Manufacturing Company operates a sister facility in Iowa. DNR is concerned that many of the issues noted this letter regarding the draft permit, if left unaddressed, could create inequities in how two facilities with the same owner/operator and processes are regulated within the region. The DNR requests that the comments provided do not delay the issuance of the synthetic minor source permit and does not prevent Thurston Manufacturing Company from initiating construction on this project.

Enforceable as a Practical Matter

The DNR concurs with EPA that the draft permit establishes restrictions to limit potential emissions for all criteria pollutants below major source applicability thresholds for purposes of Title V Operating Program (Title V) and Prevention of Significant Deterioration (PSD). However, the permit appears to be overly burdensome on the source to demonstrate that its minor source status is maintained on an ongoing basis.

The methods utilized in the draft permit to maintain the source's minor status should establish limits that are enforceable as a practical matter[1], are achievable in practice and consider the sources operations. Below are some of the specific instances where the draft permit does not appear to meet these criteria.

- In Section IV: General Permit Requirements (G), EPA states that "should EPA determine that calculated emissions are approaching or exceeding an emission limit, or should EPA determine that the permittee is failing to maintain adequate recordkeeping requirements, EPA may revise, reopen or modify the permit to require daily calculations of emissions". If EPA plans to change the recordkeeping frequency EPA

[1] As defined in 40CFR§49.167

should establish clear criteria in the permit for when the additional recordkeeping, such as daily monitoring of material usage and emissions will occur. Such a general requirement does not establish a clear method to determine compliance and does not include the appropriate monitoring and recordkeeping and is not enforceable as a practical matter.

- In Section IV: General Permit Requirements, the draft permit includes the requirement that "The emission units subject to this construction permit shall not cause or contribute to a violation of any National Ambient Air Quality Standards (NAAQS) or to a violation of a PSD increment." Including this requirement in a permit incorrectly places the responsibility for ensuring that the NAAQS is being met on the facility. The Clean Air Act (CAA) places the responsibility for achieving the NAAQS on the applicable governing authority through their respective implementation plans. In cases where an approved State or Tribal Implementation Plan does not exist, this responsibility passes to the EPA. Such a general requirement does not establish a clear method for the source to determine compliance and does not include the appropriate monitoring and recordkeeping and is not enforceable as a practical matter.

- Thurston Manufacturing will have difficulty demonstrating that *"All air exiting the booth during coating operations shall pass through the exhaust filters*" as required in section II A(1)vi. Even with the daily visible observation, is it truly reasonable to expect all emissions to pass through the filters?

- Based on the DNR's experience with $PM_{2.5}$, Thurston Manufacturing will have difficultly documenting that control equipment as required in permit sections II A(1)vi, B(1)ii, G(1)ii, H(1)ii can achieve at minimum 90 percent capture of $PM_{2.5}$ emissions and in permit section II C(1)iii can achieve at minimum 99 percent capture of $PM_{2.5}$ emissions. Control efficiencies for $PM_{2.5}$ very greatly and are usually achieve much less control than typical for PM and PM_{10}.

- The permit does not establish an averaging period for pressure drop monitoring as required in sections II A(1)viii-ix, B(1)vi-vii, C(1)v-vi, G(1)v-vi, H(1)v-vi. This does not establish a clear method to determine compliance.

- The DNR questions the regulatory purpose of requiring "the permittee shall retain an inventory of spare filters … to ensure rapid replacement in the event of filter failure" as required in permit sections II A(1)x, B(1)vii, G(1)vii, H(1)vii. If source does not retain an inventory onsite, does the source have potential to exceed an annual emission limit? Again, this requirement places significant burden on the source comply with such a requirement.

Emission Limits

The DNR questions the need to establish plant-wide emissions levels for PM, PM_{10}, $PM_{2.5}$, NOx, VOC and HAP and require the source to the monitor emissions on an ongoing basis. Easier mechanisms could be used such as establishing material usage limits/material content limits or establish pollutant specific short-term limits for each emission unit.

For example, a maximum welding wire usage on an annual basis could be established with the corresponding "worst case wire" material content requirements, all potential emissions from welding operations at the source are limited and the source can easily comply by tracking monthly wire usage and retaining safety data sheets

demonstrating the wire used at the source. These types of restrictions may be easier for the source to comply with and would reduce the recordkeeping, monitoring and reporting as required within the draft permit.

If the ton per year emission limits are determined to be appropriate and remain in the final permit, the DNR questions the need for both the NOx, and $PM_{2.5}$ limits.

- NOx: The limit appears to be based on worst case emission scenario from each plasma cutting operation operating at maximum design rate and maximum hours of operation per year. The NOx limit appears to be unnecessary since potential emissions from these sources represent "worst case emission scenario" and do not require restriction on emissions or operation to maintain the facility's minor status for purposes of the Title V and PSD.

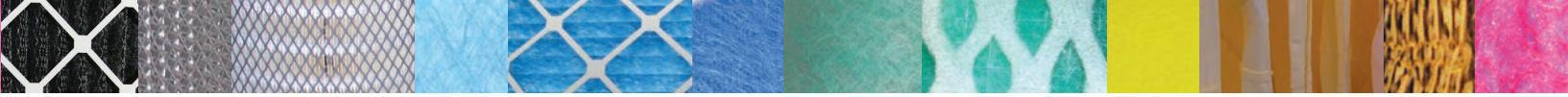
- $PM_{2.5}$: The draft permit establishes a source-wide PM_{10} cap and restricts PM_{10} below PSD and Title V applicability thresholds. $PM_{2.5}$ is defined as a subset of PM_{10} and the PM_{10} emission limit inherently restricts the potential emissions from $PM_{2.5}$ below PSD and Title V applicability thresholds.

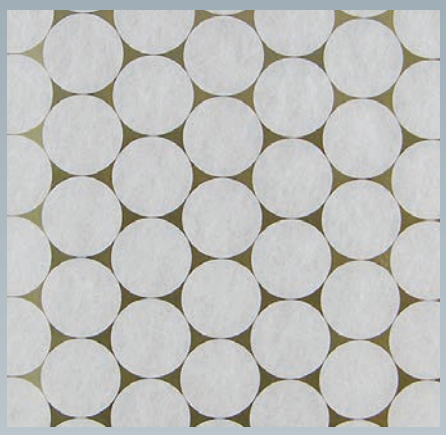
Again, DNR appreciates the opportunity to provide comments regarding the draft Synthetic Minor Source permit for the Thurston Manufacturing Company. If you have any questions regarding the comments provided, please contact me at (515) 725-9525.

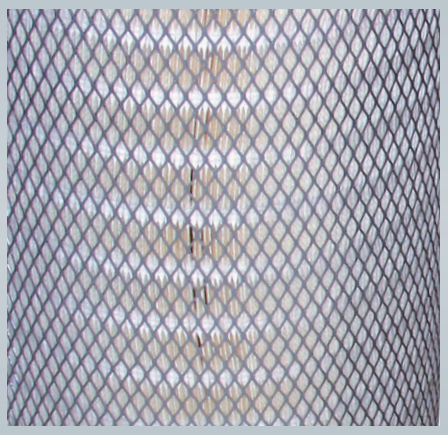
Sincerely,

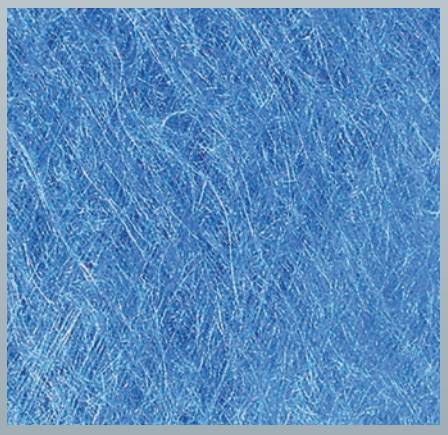
Eric Hansen for Catharine Fitzsimmons

Catharine Fitzsimmons
Bureau Chief
Air Quality Bureau
Iowa Department of Natural Resources

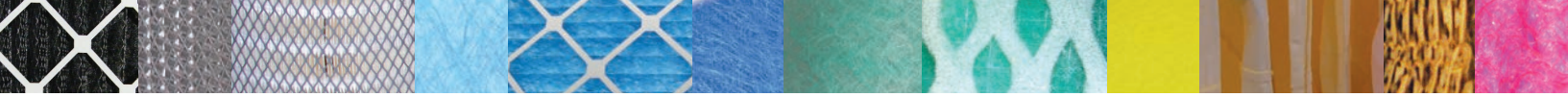








CHEMCO
PRODUCT CATALOG

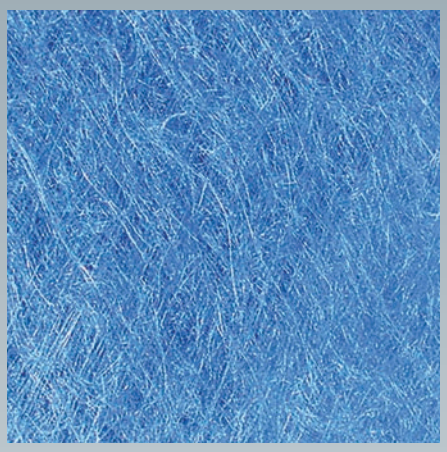


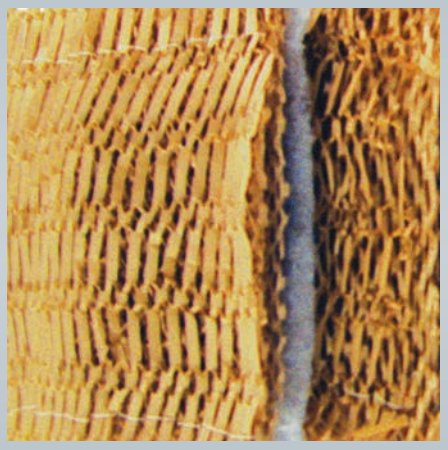
CHEMCO COMPANY HISTORY

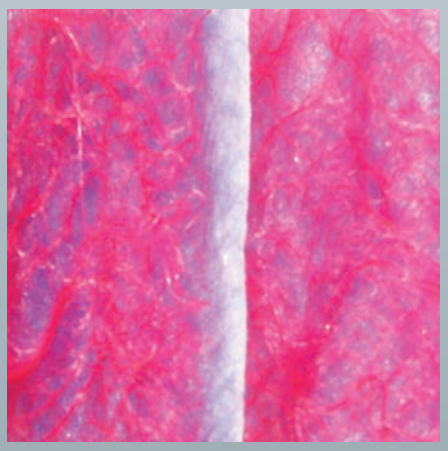
Throughout our 50 year history, Chemco Manufacturing Company has re-defined the art of coatings, filtration, and spray booth maintenance. Robert Spiegel, a chemist, founded the company in 1964. Mr. Spiegel recognized the fact that significant innovations had to be developed and implemented in order to find solutions for existing overspray collector technology shortcomings. As a result of his commitment to excellence and innovation, he developed and introduced the first spun-bond fiberglass paint arrestor. Today, fiberglass paint arrestors have yet to be equaled for their high capture efficiencies and holding capacities, all at a lower cost of purchase.

Currently, Chemco Manufacturing is still an innovative filtration company that is constantly striving to build "a better mousetrap." We always provide our customers with quality products that are environmentally compatible to meet and exceed their needs. For nearly half a century, Chemco's vision and leadership in manufacturing, sales and marketing have been unmatched in the spray booth and filtration industry. Chemco sees the value in surrounding itself with the highest quality employees in their respective fields, people with innovative forward thinking ideas that have an understanding and commitment to uncompromised customer satisfaction. That is why Chemco, its team and products are considered to set "The Standard of Excellence in the Industry."

CONTENTS



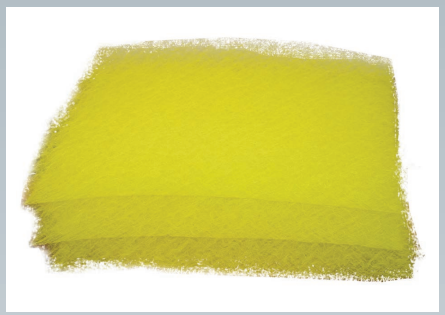




PAINT ARRESTORS

CHEMCO

Slim



T-12

Duo

Mono

FIBERGLASS PAINT ARRESTORS

SLIM

A long-time favorite among government and military installations, the SLIM is a 1" orange/white thick all-purpose economy paint arrestor filter designed for use as a pre-filter or with two filters in tandem. The SLIM provides basic overspray efficiency at a minimal cost. The efficiency rating for this filter is 98.75%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020SP	20"x20"	100/case
2025SP	20"x25"	100/case
RROLLSLM	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

T-12

An economical choice for general purpose spray applications, its bright yellow highly visible color provides added spray booth illumination while maintaining optimal air flow. This 2" filter pad is a general spray application use filter at an attractive price point. The efficiency rating for this filter is 98.3%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020T12	20"x20"	100/case
2025T12	20"x25"	100/case
YROLLT12	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

DUO

Our DUO is one of the most popular paint arrestors in use throughout the United States. Chemco's classic DUO filter features a progressive density construction that meets the needs of the widest variety of finishing applications. This filter is designed to provide longevity, efficiency, and economy for most painting applications. This 2" thick filter is white/green in color. This filter has an efficiency rating of 98.21%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020DP	20"x20"	100/case
2025DP	20"x25"	100/case
GROLLDUO	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

MONO

Chemco's second most popular paint arrestor, the MONO was designed with wood workers and heavy coating applications in mind. Its unique "open face" design eliminates face loading while utilizing progressive density technology to ensure longevity and efficiency. This 2" thick filter pad is white in color with an efficiency rating of 98.66%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020MP	20"x20"	100/case
2025MP	20"x25"	100/case
WROLLMON	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

PD

Chemco's PD Media is a beefier version of our popular DUO. This 2" green top filter features a progressive density construction that meets the needs of the widest variety of finishing applications. The efficiency rating of this filter is 98.95%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020PD	20"x20"	100/case
2025PD	20"x25"	100/case
GROLLPD	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

GPF ULTRA

Chemco's GPF Ultra offers finishers the capability of using an ultra-high efficiency filter at a competitive cost. GPF Ultra can be used as a standalone filter or pre-filter. This 1 5/8" thick filter is green/yellow in color and can be used with a wide range of finishes. GPF Ultra is a popular choice for those trying to stop as much paint and finish particulate as possible. GPF Ultra provides high paint holding capacity and can replaces conventional 2" dense polyester filtration without sacrificing extended service life. This efficiency rating of this filter is 99.43%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020GPF	20"x20"	100/case
2025GPF	20"x25"	100/case
ROLLGPF	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

FMP-18

Chemco's FMP-18 features a unique micro-filament fiber structure and technology that dramatically increases the filter's area while optimizing air flow. This open weave design promotes depth loading. Due to its smaller fiber diameter, Chemco's FMP-18 contains 33% more fiber strands than a standard fiberglass filter. Its heavy weight provides maximum efficiency without a drastic increase in cost. This highly visible 2.5" yellow colored filter has an efficiency rating of 99.07%.

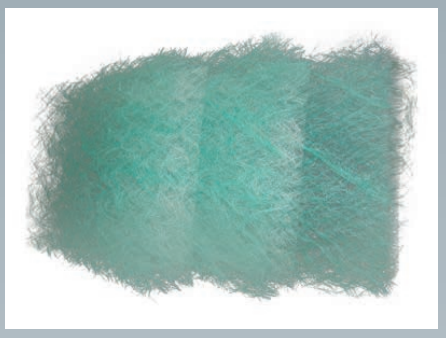
CATALOG NUMBER	DIMENSIONS	PACKAGING
2020FMP18	20"x20"	100/250 case
2025FMP18	20"x25"	100/200 case
ROLLFMP18	300' roll	Each
Available roll widths 20", 25', 30", 36", 42", 48", 60", 72", 84", 96"		

T-22YX

Our T22YX filter is a 2.5" thick fiberglass media that is widely used in automotive down draft applications. This filter features 50% more surface area than standard paint arrestors for operations that require added efficiency and longevity. This white with a yellow exit filter has an efficiency rating of 99.03%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020T22YX	20"x20"	100/250 case
2025T22YX	20"x25"	100/200 case
YXROLLT22	300' roll	Each
Available roll widths 20", 25', 30", 36", 42", 48", 60", 72", 84", 96"		

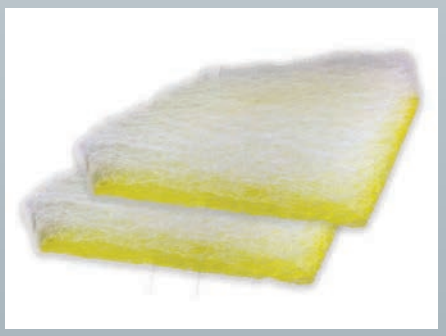
Chemco will custom cut all fiberglass paint arrestors to any length using standard available roll widths. Call for availability.



PD

GPF Ultra

FMP-18

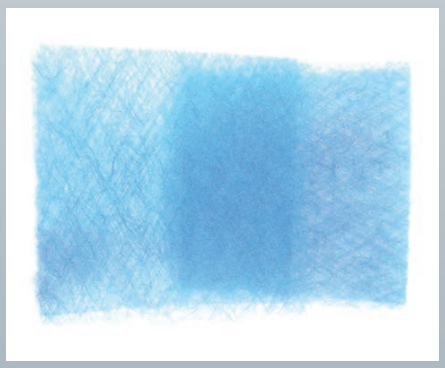


T-22YX

HS-2

Maxguard

Aqua 1



BTO

HS-2

This open face layered fiberglass media with Polyester backing is an economical choice for finer particulate capture found in quick dry and powder coating applications. This filter pad efficiency rating is 99.35%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020HS2	20"x20"	100/case
2025HS2	20"x25"	100/case
PROLLHS2	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

MAXGUARD

MAXGUARD is one of the best overspray collectors available today. Unlike any filter in the market, the MAXGUARD features two distinct layers of fiberglass protection with a poly backing. The layers complement each other to provide unmatched longevity, paint holding capacity, and efficiency resulting in low in-use cost. Its unique three tone color range allows an operator to effectively determine the filter's service life while providing uncompromising particle efficiency and longevity. This open face filter can master all coatings and finishes. This filter pad efficiency rating is 99.10%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020MPB	20"x20"	100/case
2025MPB	20"x25"	100/case
ROLLMPB	200' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84"		

AQUA 1

The Aqua-1 is the only industry paint arrestor designed exclusively for water-borne coatings and finishes. The AQUA 1 is comprised of a proprietary non-soluble binder that allows for an exceptionally long service life. This filter is light blue in color and has an efficiency rating of 98.90%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020AQ1	20"x20"	100/case
2025AQ1	20"x25"	100/case
BROLLAQ1	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

BTO

This 2.5" thick highly specialized fiberglass filter has been tackified for use with higher efficiency applications, rapid air-dry paints and dust. The efficiency of this filter is over 99.49%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020BTO	20"x20"	100/case
2025BTO	20"x25"	100/case
BROLLBTO	300' roll	Each
Available roll widths 20", 25", 30", 36", 42", 48", 60", 72", 84", 96"		

Chemco will custom cut all fiberglass paint arrestors to any length using standard available roll widths. Call for availability.

POLYESTER PAINT ARRESTORS

N-POLY

N-Poly is a standard 1" medium-loft paint arrestor. As a single layer, its construction provides maximum efficiency and optimal air flow. N-Poly is also widely popular as a pre-filter in multi-stage wet and spray-to-waste powder coating applications. Efficiency rating of this filter is 99.93%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020NPOLY	20"x20"	50/case
2025NPOLY	20"x25"	50/case
NROLLPOLY	90' roll	Each
Available roll widths 20", 25", 30", 36", 40", 50", 60", 72", 84", 90"		

CHEMLOFT

Chemco's ChemLoft overspray collector is a 2" high-loft filter with extended service life and efficiency. The ultimate in particle efficiency, ChemLoft rapidly eliminates most by-pass challenges for the widest range of coatings. Like N-Poly, ChemLoft serves double-duty as a liquid paint arrestor and powder coating pre-filter. Efficiency rating is 99.98%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020CLOFT	20"x20"	25/case
2025CLOFT	20"x25"	25/case
ROLLCLOFT	60' roll	Each
Available roll widths 20", 25", 30", 36", 48", 60", 72", 84", 90"		

PAINT POCKETS®

Paint Pockets® unique design holds up to five times more overspray than other filters, enabling you to cut your filter changes by up to 80%. The three-dimensional "pockets" embedded in the front face of Paint Pockets® more than double its surface area, allowing the arrestor to capture and hold very large quantities of overspray. Paint Pockets® is available in both pads and rolls in a white (PPW) and green (PPG) version.

Paint Pockets® white efficiency rating is 99.84% and green is slightly less @ 99.43%.

WHITE PAINT POCKETS®

CATALOG NUMBER	DIMENSIONS	PACKAGING
202030PPW	20"x20"	30/case
202530PPW	20"x25"	30/case
WROLLPP	50' roll (white)	Each
Available roll widths 24", 30", 36", 40", 45", 48", 60"		

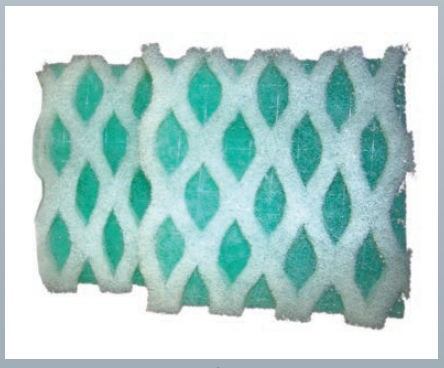
GREEN PAINT POCKETS®

CATALOG NUMBER	DIMENSIONS	PACKAGING
202040PPG	20"x20"	40/case
202540PPG	20"x25"	40/case
GROLLPP	60' roll (green)	Each
Available roll widths 24", 30", 36", 40", 48", 60"		

N-Poly

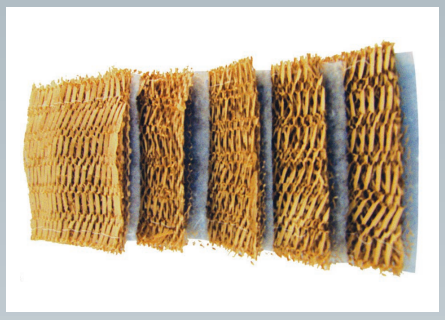
Chemloft

White Paint Pockets®



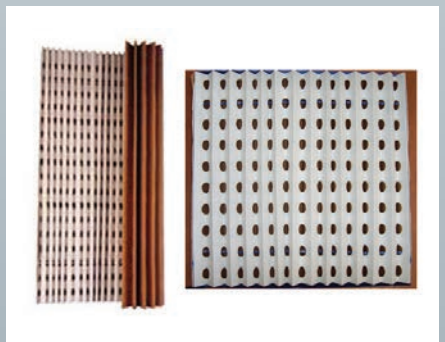
Green Paint Pockets®

Expanded Paper Filter



Expanded Paper Filter with Poly Back

Superpad



Chemco Accordion Style Cardboard

SPECIALTY PAINT ARRESTORS

EXPANDED PAPER FILTER

The Chemco PMM paint arrestor is a 6 paper layer honeycomb design. Often used as a pre-filter, it can be used in tandem to increase efficiency. The PMM provides modest efficiency with steady airflow. The efficiency rating (not in tandem) is 97.33%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020BKPMM	20"x20"	70/case
2025BKPMM	20"x25"	70/case
BLKPMM	45" wide rolls	Each
Available roll lengths 30', 40'		

EXPANDED PAPER FILTER WITH POLY BACK

Our PS2 adds efficiency to the PMM technology by bonding it to a non-woven high efficiency polyester backing. Again, like PMM, the PS2 provides longevity and steady airflow but with far superior arrestance efficiency. The efficiency rating is 99.37%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020BKPS2	20"x20"	60/case
2025BKPS2	20"x25"	60/case
BLKPS2	45" wide rolls	Each
Available roll lengths 6', 7', 8', 30', 40'		

SUPERPAD

Our SUPERPAD replaces all older Styrofoam baffle filter technology. The filter is made up of 100% polystyrene which completely dissolves in most waste thinner. It also is compact and stackable for minimal freight charges. The SUPERPAD will outperform most Styrofoam paint arrestors on the market today.

CATALOG NUMBER	DIMENSIONS	PACKAGING
202020SUPER	20"x20"	20/case

CHEMCO ACCORDION STYLE CARDBOARD

An industry classic, Chemco offers a full line of Accordion Style Cardboard filters. The traditional accordion style design provides consistent air flow and efficiency with an extended service life. The efficiency rating is 98.17%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
2020BKAF	20"x20"	40/case
2025BKAF	20"x25"	40/case
3630BLKAF	36"x30'	Each

CHEMCO ACCORDION STYLE CARDBOARD w/POLY BACKING

Our Accordion filter with a Poly Backing is designed for higher efficiency. The efficiency rating for the Poly Back Cardboard filter is 98.61%.

CATALOG NUMBER	DIMENSIONS	PACKAGING
3630BLKAFP	36"x30'	Each

CHEMCO POCKET BAG FILTERS

Polyester pocket filters are ideal for use in multi-stage spray booths. Constructed with high performance environmentally safe, polyester media. Pocket filters are tear resistant and won't rupture before or after installation. The optional galvanized metal header or self-sealing pocket ring eliminates racking and distortion. The pocket configuration in each filter results in even airflow, full inflation and minimal resistance. Deep pockets allow for optimal paint holding capacity and protracted service life. Typical applications include industrial and automotive spray booths, powder coating operations, HVAC, and a variety of additional industrial uses.

ONE LAYER EP MEDIA 2 POCKET BAG FILTER

This economical filter is a 2 pocket self sealing filter used for wet spray and powder coating applications.

CATALOG NUMBER	SIZE
202015BAFG	20"x20"x15"
202515BAFG	20"x25"x15"
242415BAFG	24"x24"x15"
202015BAFCIF*	20"x20"x15"
202515BAFCIF*	20"x25"x15"
242415BAFCIF*	24"x24"x15"

*Carbon impregnated media

ONE LAYER TACKY 2 POCKET BAG FILTER

Chemco's tackified 2 pocket bag self sealing extended surface area filter is primarily used in wet spray applications.

CATALOG NUMBER	SIZE
202015BAFGT	20"x20"x15"
202515BAFGT	20"x25"x15"
242415BAFGT	24"x24"x15"

ONE LAYER TACKY, ONE LAYER 45% MEDIA

This tackified 2 pocket bag self sealing filter with extended surface area has a higher efficiency rating.

CATALOG NUMBER	SIZE
202015BAFGT2	20"x20"x15"
202515BAFGT2	20"x25"x15"
242415BAFGT2	24"x24"x15"

All Chemco Pocket Bag Filters are available with a header or header and gasket option. Chemco's header option incorporates a galvanized metal frame on the front side of the filter which aids in sealing.

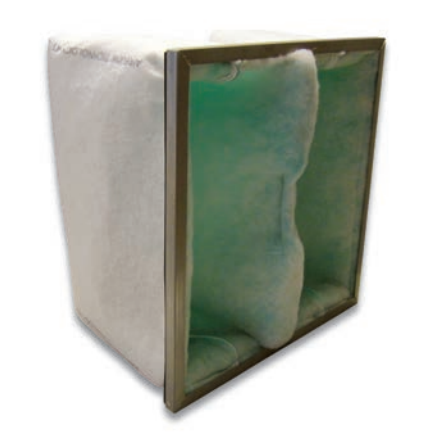
The optional gasket aids in cutting down on any particulate bypass. Please call for availability.

One Layer 2 Pocket Bag Filter

One Layer Tacky 2 Pocket Bag Filter

One Layer Tacky, One Layer 45% Media

One Layer EP, One Layer 65% Media



One Layer Tacky, One Layer 45% Media with Header and Gasket

Mach III and Mach II

ONE LAYER EP, ONE LAYER 65% MEDIA (no header)

Our highly efficient 2 pocket self sealing filter is also primarily used in wet spray applications.

CATALOG NUMBER	SIZE
202015BAFPCN	20"x20"x15"
202515BAFPCN	20"x25"x15"
242415BAFPCN	24"x24"x15"

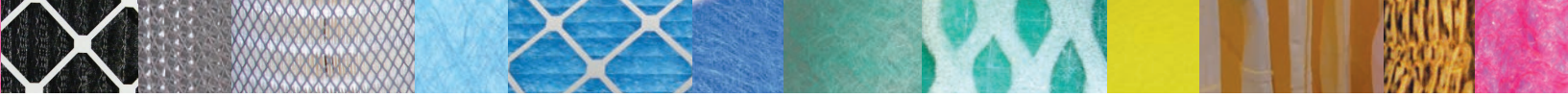
All Chemco Pocket Bag Filters are available with a header or header and gasket option. Chemco's header option incorporates a galvanized metal frame on the front side of the filter which aids in sealing.

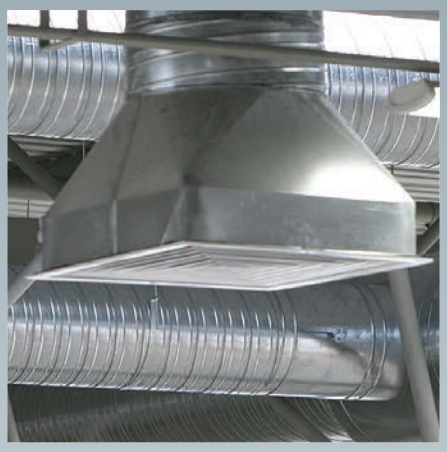
The optional gasket aids in cutting down on any particulate bypass. Please call for availability.

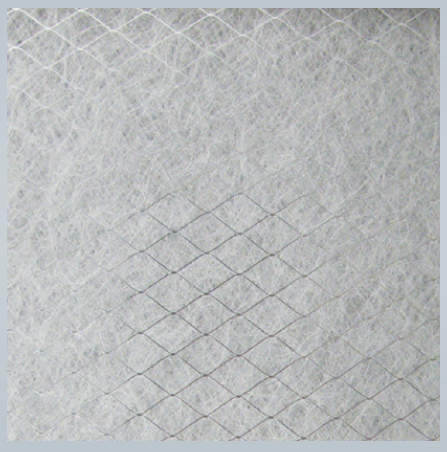
MACH II AND MACH III

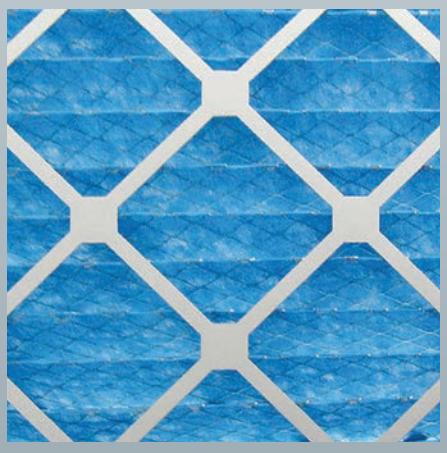
The Mach II two-stage and Mach III three-stage arrestor systems meet the EPA method 319 requirements for the aerospace industry. The Mach II and Mach III are ideal where extremely high paint particulate capture efficiency is required.

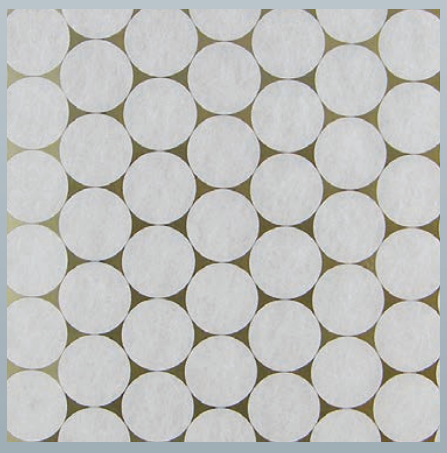
CATALOG NUMBER	SIZE
202015MACH2	20"x20"x15"
202515MACH2	20"x25"x15"
242415MACH2	24"x24"x15"
202015MACH3	20"x20"x15"
202515MACH3	20"x25"x15"
242415MACH3	24"x24"x15"











INTAKE/ HVAC FILTERS

CHEMCO

PAFIF

AFR-1 Intake Filter Media

FF-560 GX Intake Filter Media

PAFIF (polyester w/internal wire frame filter)

This self supported tackified polyester intake filter (Series 65) is designed for a velocity of up to 400 FPM. Unaffected by humidity, this intake filter has a low initial resistance which allows it to not shut down airflow upon installation.

CATALOG NUMBER	SIZE	PACKAGING
1620PAFIF	16"x20"x2"	20/carton
1625PAFIF	16"x25"x2"	20/carton
2020PAFIF	20"x20"x2"	20/carton
2020PAFIFE	20"x20"x1" ECONOMY	20/carton
2020PAFIFD	20"x20"x1" DRY	20/carton
2025PAFIF	20"x25"x2"	20/carton
2048PAFIF	20"x48"x2"	10/carton
2050PAFIF	20"x50"x2"	10/carton
20100PAFIF	20"x100"x2"	4/carton
2424PAFIF	24"x24"x2"	20/carton
ROLLGT	20", 36", 48", 60", 72"	135' rolls

All sizes are available in 1" Economy or 1" Dry option.
For availability, call 1-800-323-0431.

AFR-1 INTAKE FILTER MEDIA (diffusion media)

Series AFR-1 media is a scrim backed high quality intake filter used in air makeup units for spray booths. Constructed of 100% polyester filter media with an impregnated tackifier. AFR-1 is a popular filter media used in applications where dust control is of important concern. This intake filter media type boasts efficiency levels greater than 95% on particles 7-10 microns and greater.

CATALOG NUMBER	SIZE	PACKAGING
2020BKDMA	20"x20"	20/case
2025BKDMA	20"x25"	20/case
2020DMAFIFA*	20"x20"	20/case
2025DMAFIFA*	20"x25"	20/case

*Internal wire frame

Call for availability of custom cut pads and blankets.

FF-560 GX INTAKE FILTER MEDIA (premium diffusion media)

Series FF-560 GX media is specially designed as a premium intake filter media used in air makeup units for spray booths. This filter media is non-woven synthetic fiber based with a progressive density multi-layering construction. FF-560 GX filter media yields a high dust loading capacity, longer filter life and premium grade fractional efficiency. Efficiency levels are rated at 99+ % at 7-10 microns and greater. FF-560 GX is heat resistant and has a special tackifier which increases its performance in spray booths.

CATALOG NUMBER	SIZE	PACKAGING
2020BKDMF	20"x20"	20/case
2025BKDMF	20"x25"	20/case
2020DMAFIFF*	20"x20"	20/case
2025DMAFIFF*	20"x25"	20/case

*Internal wire frame

Call for availability of custom cut pads and blankets.

PLAF (pleated w/cardboard frame)

This cardboard framed panel air filter consists of pleated synthetic fibers with a metal grid support on one side.

CATALOG NUMBER	SIZE	PACKAGING
12241PLAF	12"x24"x1"	12/carton
12242PLAF	12"x24"x2"	12/carton
12244PLAF	12"x24"x4"	6/carton
14251PLAF	14"x25"x1"	12/carton
14252PLAF	14"x25"x2"	12/carton
16201PLAF	16"x20"x1"	12/carton
16202PLAF	16"x20"x2"	12/carton
16204PLAF	16"x20"x4"	6/carton
16252PLAF	16"x25"x2"	12/carton
18242PLAF	16"x24"x2"	12/carton
20201PLAF	20"x20"x1"	12/carton
20202PLAF	20"x20"x2"	12/carton
20204PLAF	20"x20"x4"	6/carton
20251PLAF	20"x25"x1"	12/carton
20252PLAF	20"x25"x2"	12/carton
20254PLAF	20"x25"x4"	6/carton
24241PLAF	24"x24"x1"	12/carton
24242PLAF	24"x24"x2"	12/carton
24244PLAF	24"x24"x4"	6/carton
*Popular sizes listed. All available in 1", 2" and 4" deep pleats.		

PAF (polyester w/cardboard frame)

The PAF filter has a metal support grid system instead of a scrim back. The filter is 100% non woven polyester and is highly moisture resistant. UL 900 class 2 rated.

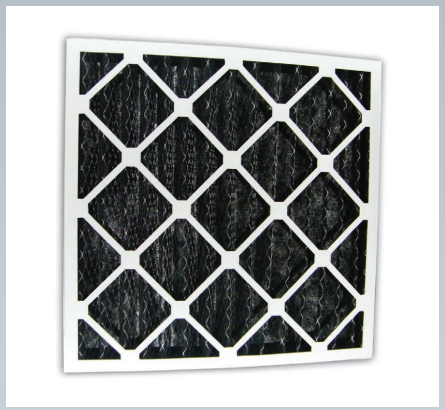
CATALOG NUMBER	SIZE	PACKAGING
14251PAF	14"x25"x1"	12/carton
14252PAF	14"x25"x2"	12/carton
16201PAF	16"x20"x1"	12/carton
16202PAF	16"x20"x2"	12/carton
16251PAF	16"x25"x1"	12/carton
16252PAF	16"x25"x2"	12/carton
20201PAF	20"x20"x1"	12/carton
20202PAF	20"x20"x2"	12/carton
20251PAF	20"x25"x1"	12/carton
20252PAF	20"x25"x2"	12/carton
24241PAF	24"x24"x1"	12/carton
24242PAF	24"x24"x2"	12/carton

PLAF

PAF

Do you have a Paint Booth Filtration problem? Chemco Technical Representatives are available to assist.

AF



CIF

AF (fiberglass w/cardboard frame)

AF is a fiberglass filter that features a scrim back on the air exit side. UL 900 class 2 rated.

CATALOG NUMBER	SIZE	PACKAGING
15201AF	15"x20"x1"	12/carton
15202AF	15"x20"x2"	12/carton
16201AF	16"x20"x1"	12/carton
16202AF	16"x20"x2"	12/carton
20201AF	20"x20"x1"	12/carton
20202AF	20"x20"x2"	12/carton
20251AF	20"x25"x1"	12/carton
20252AF	20"x25"x2"	12/carton
24241AF	24"x24"x1"	12/carton
24242AF	24"x24"2"	12/carton

CIF (charcoal impregnated pleated air filter)

The CIF carbon pleated filter is non woven media carbon filled with a moisture resistant frame. This filter provides a high removal efficiency of nuisance odors.

CATALOG NUMBER	SIZE	PACKAGING
16251PLAFCIF	16"x25"x1"	12/carton
16252PLAFCIF	16"x25"x2"	12/carton
2020PLAFCIF	20"x20"x1"	12/carton
20202PLAFCIF	20"x20"x2"	12/carton
2025PLAFCIF	20"x25"x1"	12/carton
20252PLAFCIF	20"x25"x2"	12/carton
24241PLAFCIF	24"x24"x1"	12/carton
24242PLAFCIF	24"x24"x2"	12/carton
24244PLAFCIF	24"x24"x4"	6/carton
20ROLLCIF	20"x100'	100' roll

Can't find what you are looking for? Chemco can help. Call 1 800 323-0431.









POWDER AND DUST CARTRIDGES

CHEMCO

80/20 Paper-Poly

CHEMCO CARTRIDGES FOR POWDER AND DUST COLLECTION

Regardless of the nature of your dust collection application, Chemco has the answer for all of your cartridge filtration needs. No matter what the load volume, micron size or shape of the particulate; whether the particulate is flammable, abrasive, hygroscopic, or agglomerating; whether the air is being returned to the plant or exhausted outside of the building; **Chemco has the solution to all your dust collection needs.**

CHEMCO MEDIA STYLES

80/20 (PP) PAPER-POLY BLEND

Chemco's 80/20 blend (PP) cartridges offer high efficiency, durability and performance appropriate for a wide variety of dust applications, including blast booths, carbon black, pharmaceutical, powder-coating and dry chemical processing. **Pleat spacing can be widened** for applications where larger or irregularly shaped dust particles enter the collector, such as fiberglass and composite grinding and tobacco processing.

Our 80/20 blend cartridges offer improved efficiency, moisture-resistance, and dust cake release without added pressure drop compared to 100% cellulose style filters.

Tomato cage supports can be used instead of outer screens for coarse wood sanding, chaffe-tolerant grain handling, and some buffing applications.

FLAME-RETARDANT 80/20 (DF)

Chemco builds flame-retardant 80/20 blend (DF) dust cartridges for applications where sparks or flammable dust can enter the dust collector, such as welding, plasma cutting, flame-cutting, laser, metallizing and ferrous metal grinding. As is the case with our regular 80/20 cartridges, flame-retardant filters can be made with **wider pleat spacing** as well, for applications like coarse grinding or ferrous metals.

NANOFIBER (NP)

Chemco's MERV 15 rated, "Nano-fiber" (NP) cartridge filter technology sets a new standard in fractional efficiency and extended service life for cartridge filtration. Offering near PTFE-membrane performance characteristics at only one-third the cost.

Nano-fiber offers significantly greater fractional efficiency, extended filter life and longer maintenance service intervals than do untreated substrates. In addition Nano fibers are stronger and more durable, allowing the cartridge to withstand more stringent pulse-cleaning conditions

Nano-fiber cartridge filters are an ideal choice for FDA-compliant or clean room environments where high efficiency is required, as well as those applications where heavy dust loading, hazardous dust or challenging conditions typically result in cartridge blinding and shorter service life.

Nano-fiber media also outperforms in applications that can produce soot or unburned hydrocarbons, such as welding or metallizing. Nano-fiber is also offered in a flame-retardant (NF) version for applications where sparks or flammable dusts are possible.

Nano-fiber cartridges are also the ideal choice for **powder reclaim operations.** In addition, powder coaters can use nano-fiber filters where heavy loading or finer micron-sized powder can lead to cartridge blinding and shorter service life (i.e., users spraying black-colored powder or powder-coating operations equipped with combination cyclone/cartridge-style collection systems).

SPUN-BOND POLYESTER (PC)

Chemco's 100% spun-bond polyester (PC) media is a higher efficiency, "surface-loading" filter media featuring wider pleat-spacing than all depth-loading filters, resulting in enhanced cleaning capability during back purging cycles and lower pressure drop. Our spun-bond polyester cartridges can be pulsed cleaned at lower PSI, saving on compressed air and energy costs. Unlike filters made with cellulose media, spun-bond polyester filters can be washed and reused with soap and water, do not require outer screen support and do not lint.

Chemco's 100% spun-bond polyester dust cartridges are ideal for any applications where abrasion-resistant or high-strength media is required. Paper, cardboard, cement, cocoa, coffee, aluminum oxide and rubber grinding dust applications are ideal for this media style.

SPUN-BOND POLYESTER (KC)

Chemco is one of the few sources in the powder and dust collection market that offer the 100% spun-bond polyester (KC) media with the advanced "dual-dimple" pleat design. This superior pleating technology substantially improves the overall performance and service life of spun-bond polyester media, even under heavy dust loading. By imparting the dual (opposing) dimples down the length of each individual pleat, uniform pleat spacing and full utilization of filter surface area is guaranteed, resulting in optimal cleaning capability of back purging cycles and lower pressure drop.

TREATED POLYESTER AND SYNTHETIC MEDIA

For applications requiring high strength media and superior dust release characteristics (i.e., cement, cardboard, paper, carbon black, and some rubber grinding) we offer **spun-bond polyester media options with either hydro/oleo-phobic treatment (KW) for moisture and oil resistance, as well as aluminized (KL) finishes for static dissipation.**

For applications where moisture is an issue or those with larger particles, agglomerative or hygroscopic dusts, such as salt, sugar, clay, cocoa, coffee, detergents, milk powder, and stearates; **synthetic media (SP) is available in a 90/10 polyester/fiberglass blend.**

For high temperature applications we offer a high efficiency, **proprietary blend of 10 oz.**

PTFE (PT) MEMBRANE

Higher efficiency applications such as food, asbestos, pesticides, fluidized bed dryers and agglomerating materials, **PTFE membrane-laminated (PT) cartridges** are also available.

Chemco's top of the line PTFE-laminated powder cartridges offer the best filtration technology available today. Our expanded PTFE is laminated over a 100% spun-bond polyester substrate which providing lower surface resistance and better release properties than any other filter in the powder market today. Its slick and microporous surface offers 100% efficiency at 1 micron and above, does not require seasoning, and is the optimum choice for ultra-fines, high moisture or humid environments. The PTFE membrane is also the favorite choice of the automotive and appliance industries where nothing but the finest quality finish will do.

Spun-Bond Poly

Chemco has a solution for all your Powder and Dust collection needs. Call 1 800 323-0431 for assistance.

ALSO AVAILABLE:

- **Stainless Steel construction** for use in food and drug grade or chemically corrosive applications
- **Variable pleat count and depth**
- **Precoated or carbon-impregnated treatments** upon request
- **Other media, special endcaps and custom sizes** to meet specific needs of any application
- **Polyisoprene, neoprene or silicone gaskets**
- **Proprietary OEM designs**

OEM REPLACEMENTS

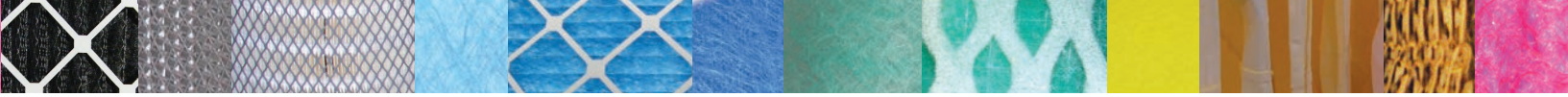
Chemco manufactures custom designs, as well as replacement cartridges and upgrades for the following OEMs and more…

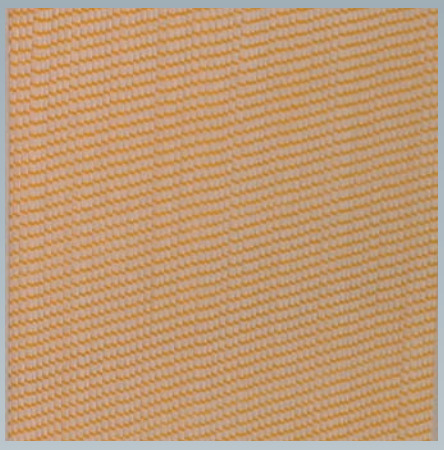
- AAF
- AirFlow Systems
- Binks Sames
- Blastec
- Camfil-Farr
- Colmet
- Deimco
- Donaldson
- Global Finishing
- Hoffman
- Iontech
- ITW/Gema
- MAC
- Micro Air
- Nordson
- Pangborn
- Ramco
- Torit
- UAS
- Wagner
- Wheelabrator

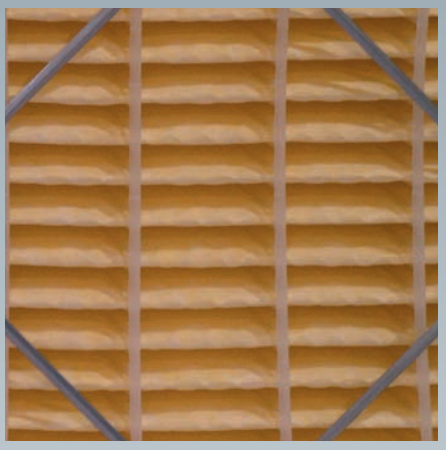
INDUSTRIES WE SERVE

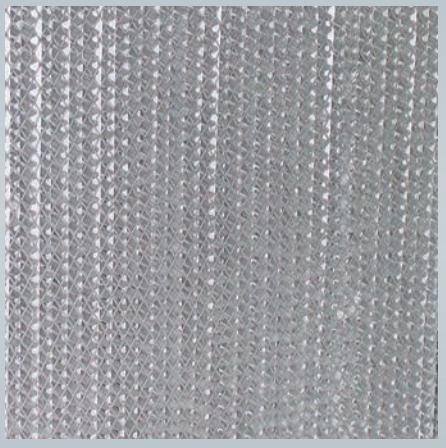
- Abrasive Blasting
- Appliance Manufacturing
- Asbestos
- Auto and Parts Operations
- Carbon Black
- Cement Production
- Chemical Plants
- Coal Processing
- Composites and Fiberglass
- Food Processing
- Foundries
- Grain and Feed
- Laser/Plasma Cutting
- Lawn/Farm Equipment
- Metal Grinding
- Military
- Mineral Processing
- Nonferrous Metals
- Pharmaceutical
- Plastics
- Powder Coating
- Pulp and Paper
- Rubber
- Steel mills
- Textile
- Welding
- Wood and Forest Products
- Wood and Metal Furniture

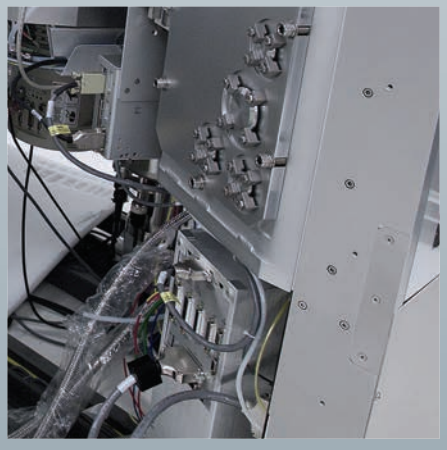
Chemco has a solution for all your Powder and Dust collection needs. Call 1 800 323-0431 for assistance.

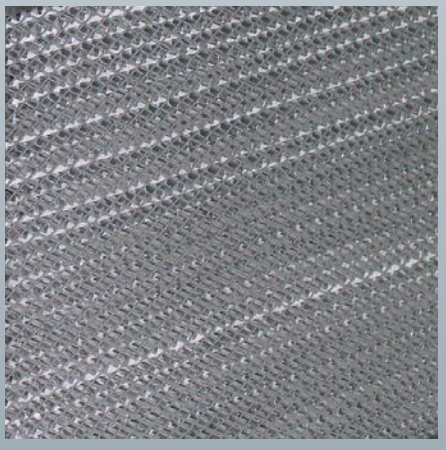












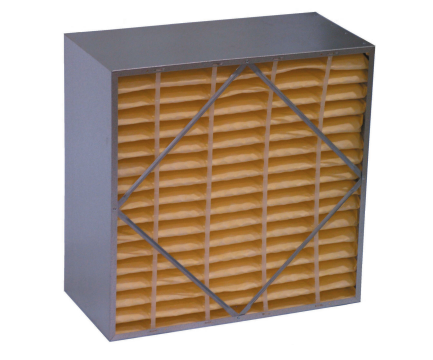
FINAL FILTERS

CHEMCO

Multi-Cell Final 95% efficiency

Multi-Cell Final 95% efficiency (single header)

Multi-Cell Final 95% efficiency (double header)



Rigi-Pak Final 95% efficiency

MULTI-CELL FINAL 95% EFFICIENCY

Chemco's multi-cell filter is one of the most popular final filters in use throughout the USA by OEM manufacturers. This filter incorporates a metal outer screen to protect and hold the media pleats together. This 95% efficient filter is fabricated with pleated media packs made of water-resistant all-glass micro-fiber media encased in polypropylene housings. Sizes listed are nominal and not actual.

CATALOG NUMBER	SIZE
12241295ASH	12"x24"x12"
24201295ASH	24"x20'x12"
24201295ASH	24"x20"x12"
24241295ASH	24"x24"x12"
25201295ASH	25"x20"x12"

All Multi-Cell Final Filters are available in single or double header design.

RIGI-PAK FINAL 95% EFFICIENCY

The Rigi-Pak Final filter has plastic separators that uniformly divide and hold the pleats in place instead of customary metal screening. Our separators do not detract from efficiency and performance of this filter, but do lower cost. This filter has no header and the rated efficiency is 95%.

CATALOG NUMBER	SIZE
20201295RPAK	20"x20"x12"
20241295RPAK	20"x24"x12"
24241295RPAK	24"x24"x12"

All Rigi-Pak Final Filters are available in single or double header design.

MICRO PLEAT FINAL 95% EFFICIENCY

Our Micro Pleat Final filter provides more media surface area for superior retention of smaller particulates. This filter also has a polypropylene frame which allows the user to get this pleat pack in smaller quarter applications as compared to flimsy cardboard frame filters. This filter can be installed where moisture and bacteria build up is an issue.

CATALOG NUMBER	SIZE
FFMP1625295	16"x25"x2"
FFMP1625495	16"x25"x4"
FFMP2020295	20"x20"x2"
FFMP2020495	20"x20"x4"
FFMP2024295	20"x24"x2"
FFMP2024495	20"x24"x4"
FFMP2025295	20"x25"x2"
FFMP2025495	20"x25"x4"
FFMP2424295	24"x24"x2"
FFMP2424495	24"x24"x4"

Can't find what you are looking for? Chemco can help. Call 1 800 323-0431.

CELLULOSE FINAL FILTERS

100% cellulose fiber in a galvanized frame. 95% ASHRAE efficiency. An OEM replacement offering.

CATALOG NUMBER	SIZE
FLPAP1424	14"x24"x2"
FLPAP1723	17"x23"x2"
FLPAP2420	24"x20"x2"
FLPAP2424	24"x24"x2"
FLPAP24203	24"x20"x3.5"

CHEMCO HEPA FILTERS

Chemco HEPA Filters are designed to provide the highest level of filtration available for commercial and industrial applications. They are widely used in hospitals, clean rooms, pharmaceutical plants, and in hundreds of other systems where clean air is critical in the protection of people, processes and equipment. All HEPA Filters are constructed using only the highest quality components and are available in efficiencies of 99.97%, 99.99% and 99.999% on 0.3 micron particles. Standard construction Chemco HEPA Filters are manufactured with galvanized steel cell sides (UL Class 1) or particle board cell sides (UL Class 2). Multiple cell side options are also available.

Chemco Standard Capacity HEPA Filters offer an excellent combination of high efficiency, factory tested performance, and economical initial purchase price. The filter is designed to operate under normal conditions, with the 12" deep model capable of maintaining a pressure drop of 1.0" w.g. at airflows up to 260 feet per minute.

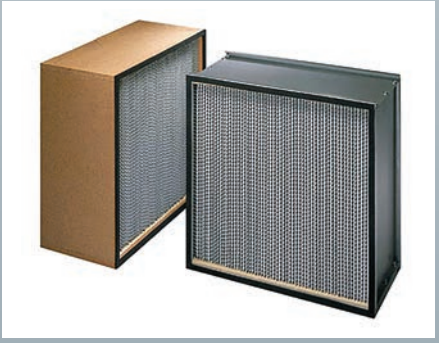
Chemco High Capacity HEPA Filters are designed to operate in applications with higher airflows up to 500 FPM (Feet per Minute). Constructed with approximately 50% more filter media than Standard Capacity Filters, Chemco's High Capacity HEPA Filters can operate at velocities up to 2000 CFM with only a slight increase in pressure drop and offer several additional performance advantages: lower average pressure drop at equivalent airflows; can operate at higher airflows with only slight increase in resistance; extended media means longer service life, fewer filter changes, and reduced maintenance and disposal costs; reduced space requirements for filter banks, fewer filters required; excellent choice for new systems and renovations of existing systems.

Call for availability and more information.

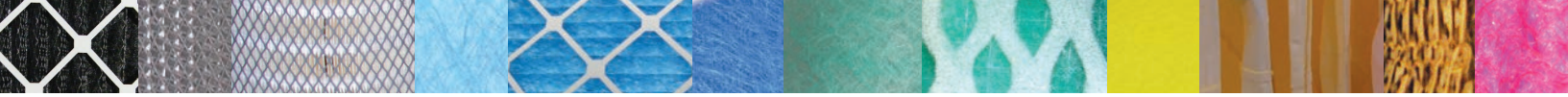
Rigi-Pak Final 95% efficiency (single header)

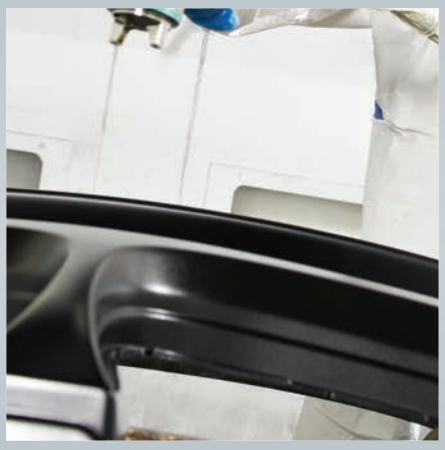
Micro Pleat Final 95% efficiency

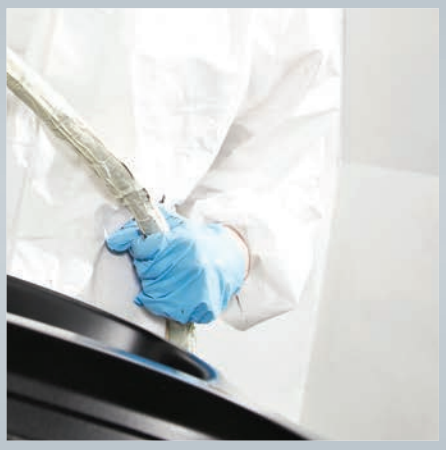
Cellulose Final

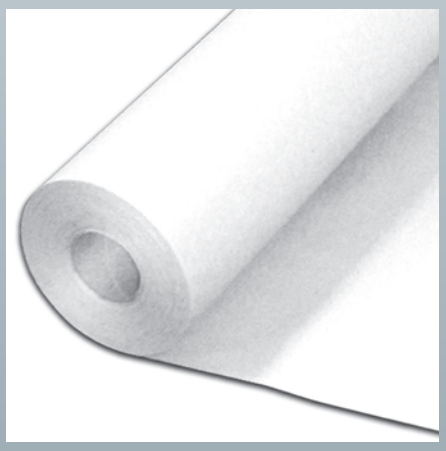


HEPA Final Filters







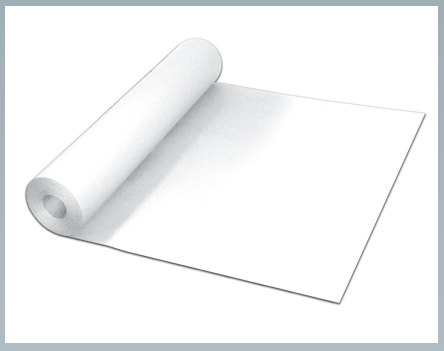


FLOOR COVERING

CHEMCO

Why you need to use Chemco's Flame Retardant Surface Protection

Virtually all fire inspectors and insurance underwriters require the use of removable coatings and coverings in and around spray booths. With safety and fire regulations increasing each year, why wait for that unannounced safety inspection to get your facility OSHA compliant. For a minimal investment you can ensure safety and fire protection of your factory and employees.



HIGH STRENGTH FLOOR COVERING

Chemco's strongest surface protection stands up to the heaviest machinery and foot traffic. Its unique, non-porous design prevents penetration to the substrate beneath. Popular with government and military operations, this exclusive Chemco tear-resistant product is highly durable. Color: white.

CATALOG NUMBER	SIZE
36HSFRP	36"x300'
48HSFRP	48"x300'
60HSFRP	60"x300'
72HSFRP	72"x300'

100# WHITE FLAME RETARDANT FLOOR PAPER

Our best selling surface protection is as tough as it is popular. The 100# paper weight ensures durability and absorption even under constant operator traffic. Its bright white color promotes booth illumination. The 100# white is conveniently marked with its flame retardant rating for fast easy compliance with inspectors. Available in a wide array of sizes and it works well on all spray booths.

CATALOG NUMBER	SIZE
36SKFRP	36"x300'
42SKFRP	42"x300'
60SKFRP	60"x300'
72SKFRP	72"x300'
84SKFRP	84"x300'

80# WHITE FLAME RETARDANT FLOOR PAPER

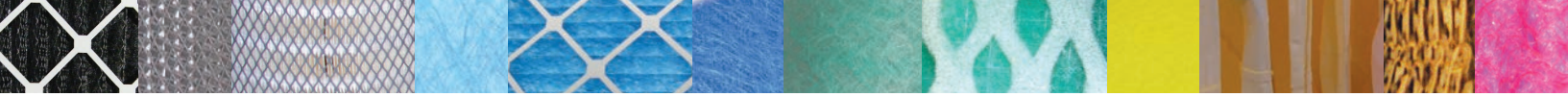
Chemco's highly efficient, white 80# surface protection is ideal for light spray operations.

CATALOG NUMBER	SIZE
3680FRP	36"x300'
4280FRP	42"x300'
6080FRP	60"x300'
7280FRP	72"x300'
8480FRP	84"x300'

70# WHITE FLAME RETARDANT FLOOR PAPER

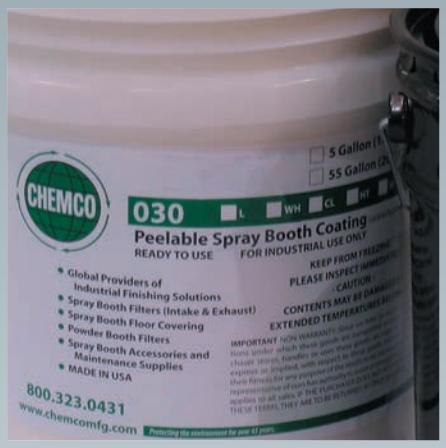
This economical surface protection is white in color, easy to use, and available exclusively from Chemco in 500' rolls. Popular in mixing rooms and low-traffic areas, this product offers immediate OSHA compliance at minimal cost.

CATALOG NUMBER	SIZE
36NTFRP	36"x500'
42NTFRP	42"x500'
60NTFRP	60"x500'
72NTFRP	72"x500'



NOTES*

* Okay, we'll be honest. When we redesigned our catalog, we had one page left over. To maintain the flow of the back sections, we had to put it here. Feel free to use it when you call one of our representatives at **1-800-323-0431.** You'll also note that the lines are spaced 1/4" apart, in case you want to use this page to design something cool. Or, you can use it for random doodling. The choice is yours!



REMOVABLE SPRAY BOOTH COATINGS

Five gallon pails

55 gallon drum

WATER BASED SPRAY BOOTH COATINGS

030-WH WHITE PREMIUM PLUS PROTECTIVE COATING

030-WH White Premium Plus is the highest quality water based formula available in the world and it is by far the easiest to remove of any strippable coating in the marketplace today. It can be applied to the widest range of surfaces.

030-L WHITE PREMIUM

030-L is Chemco's most popular water-based formula in the marketplace. The bright white color and high tensile strength make it an ideal choice for safety conscious spray booth operators. This safe, non-hazardous formula dries to a white finish.

030-CL CLEAR

Our 030-CL is the premier clear water-based booth coating for spray booth operators. This safe, non-hazardous formula dries to a clear finish for windows, lights, and pre-coated booths.

030-HT AND 030-HTC WHITE AND CLEAR HIGH TEMPERATURE

Chemco's 030-HT and 030-HTC are our strippable coatings for the automotive industry. They feature the same benefits as our 030-L and 030-CL, but with a temperature resistance of 225°.

030-E WHITE ECONOMY

Chemco's 030-E is our economy grade low cost offering of a water based peelable booth coat.

030-FD FAST DRY

Chemco's 030-FD "fast dry" white water based peelable coating is formulated with over 50% solids content, providing more square foot coverage per gallon than any of our booth coating offerings. Re-coating spray booth walls with this product takes less time and material, reduced dry time, hence decreasing production down time.

030-TK, DR, WHITE AND CLEAR WASHABLE COATING

Chemco offers a full line of washable spray booth coatings. Available in white and clear as well as Dry-Touch, and Tacky-Touch, each of these coatings is easy to apply and will wash off with a pressurized water spray.

030-FT FREEZE-THAW

Chemco's 030-FT is a 5-cycle freeze-thaw water based peelable coating that facilitates shipping in the cold winter months. The color is an eggshell-white.

Please note: If the 030-FT arrives frozen, it must be stored above freezing for a minimum of 72 hours and allowed to return to ambient temperatures. After the product thaws, it must be agitated. At this point, it is ready for application. Failure to allow proper thawing will result in a loss of peelability and coverage.

Can't find what you are looking for? Chemco can help. Call 1 800 323-0431.

SOLVENT BASED SPRAY BOOTH COATINGS

791-WH WHITE PREMIUM

Chemco's 791-WH booth coating sets the standard for solvent based removable coatings. This highly strippable, fast drying, and easy to apply product is our largest selling.

791-CL CLEAR COATING

This crystal clear version of the 791-WH is ideal for windows, lights, and pre-coated booths. A fast drying product that is easy to apply.

PROTECTIVE COATING FIVE GALLON PAILS

BASE	CATALOG NUMBER	COLOR	APPLICATION	COVERAGE
Water	05WH030	White	Premium tensile strength and peelability	225 SF@2mil
Water	05L030	White	Peelable	250 SF@2mil
Water	05CL030	Clear	Peelable	250 SF@2mil
Water	05HT030	White	Heat resistant to 225°, peelable	225 SF@2mil
Water	05HT030C	Clear	Heat resistant to 225°, peelable	100 SF@2mil
Water	05E030	Egg Shell White	Economy, peelable	245 SF@2mil
Water	05FD030	Egg Shell White	Fast dry, peelable	350 SF@2mil
Water	05TK030W	White	Tacky touch, washable	225 SF@ 2mil
Water	05TK030	Clear	Tacky touch, washable	100 SF@2mil
Water	05DR030W	White	Dry touch, washable	225 SF@2mil
Water	05DR030	Clear	Dry touch, washable	100 SF@2mil
Water	05FT030	Egg Shell White	Freeze-thaw, peelable	275 SF@2mil
Solvent	05WH791	White	Peelable, fast drying, highly strippable	225 SF@2mil
Solvent	05CL791	Clear	Peelable, fast drying, highly strippable	125 SF@2mil

*Please note that all Square Footage figures are approximate and on a per gallon basis.

PROTECTIVE COATING 55 GALLON DRUMS

BASE	CATALOG NUMBER	COLOR	APPLICATION	COVERAGE
Water	55WH030	White	Premium tensile strength and peelability	225 SF@2mil
Water	55L030	White	Peelable	250 SF@2mil
Water	55E030	Egg Shell White	Economy, peelable	245 SF@2mil
Water	55FD030	Egg Shell White	Fast dry, peelable	225 SF@2mil
Water	55FT030	Egg Shell White	Freeze-thaw, peelable	350 SF@2mil
Solvent	55WH791	White	Peelable, fast drying, highly strippable	225 SF@2mil

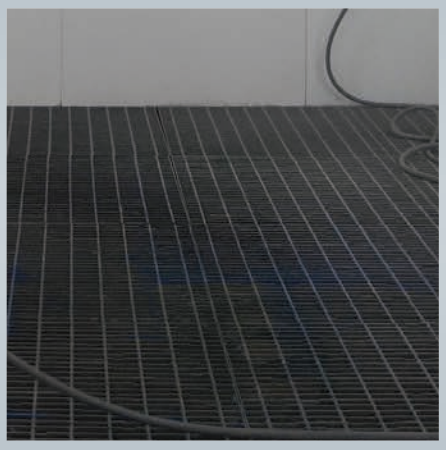
*Please note that all Square Footage figures are approximate and on a per gallon basis.

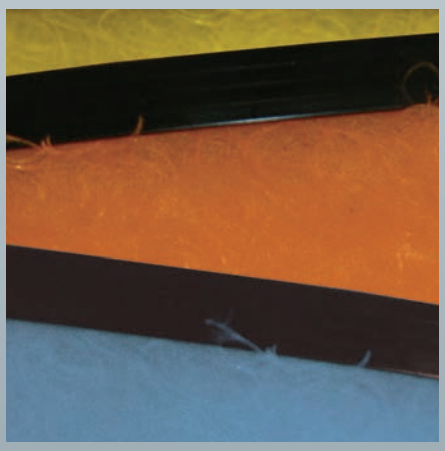
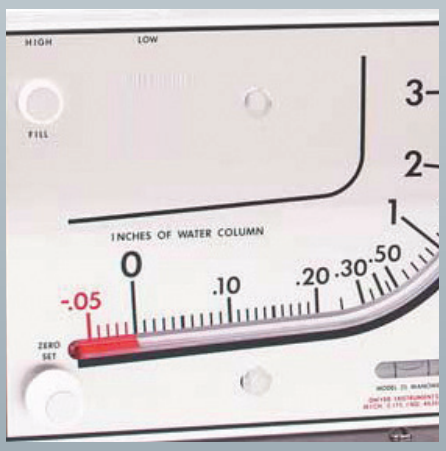
Please note: Most all of our coatings are available in 55 gallon drums or 5 gallon pails. Please check with your local Chemco representative for size availability for your selected coating.

Call Chemco for all your Paint Booth Maintenance needs.





ACCESSORIES

PRESSURE POT LINERS

Chemco's line up of disposable pressure pot liners are an economical choice to fit various sizes of Binks, Graco, or DeVilbis pressure pots. The costly and time consuming job of cleaning pressure pots is eliminated with the use of Chemco's disposable liners. The savings in time and labor is far greater than the cost of the liner. Booth versatility is also maximized as disposable liners make it quick and easy to switch from one paint or coating to another. Liners containing unused material can be set aside for later use if desired. Chemco's vacuum formed disposable liners are particularly advantageous when the spray medium is unusually difficult to clean up, such as two-package urethanes, epoxy adhesives.

CATALOG NUMBER	SIZE (GAL.)	CAPACITY	STYLE*	COMPATABILITY**	PACKAGING
2GALLBPPL	2	2.8	RB	B, GR	20-100
2GALLDPPL	2	2,8	WT, RB	DB	10
2GALLHPPL	2	N/A	FB	H	20
5GALLBPPL	5	9.8	RB	B	24
5GALLDPPL	5	9.8	WT, RB	DB	20
5GALLGPPL	5	9.8	F	B, GR	10-100
10GALLBPPL	10	11.8	F	B	12
10GALLDPPL	10	11.8	FB	DB	8
15GALLDPPL	15	19.8	FB	DB	10

* RB-Round Bottom, WT-Wide Top, F-Flat Bottom, FB-Flexible Bottom

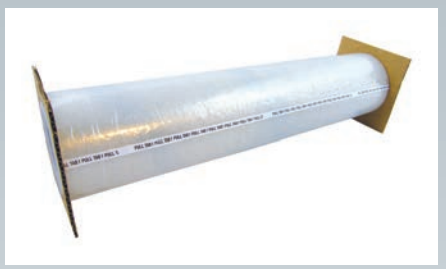
** B-Binks, GR-Gracco, DB-DeVilbis, H-Hedwin

Pressure pot liners

CHEMGUARD

Chemco's popular ChemGuard protective film is an easy solution to windows and lights. this highly durable, self releasing film allows for easy application and removal. Available in 12"x100' and 18"x100' rolls. 24 hour shipping is also available.

CATALOG NUMBER	QUANTITY
1210024	12"x100'
1810024	18"x100'

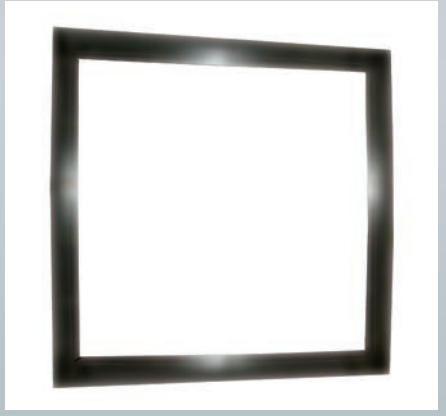


Chemguard

HOLDING FRAMES

Chemco offers 20"x20" and 20"x25" galvanized steel holding frames to fit any booth.

CATALOG NUMBER	SIZE
2020FRAMES	20"x20"
2025FRAMES	20"x25"



Holding frame

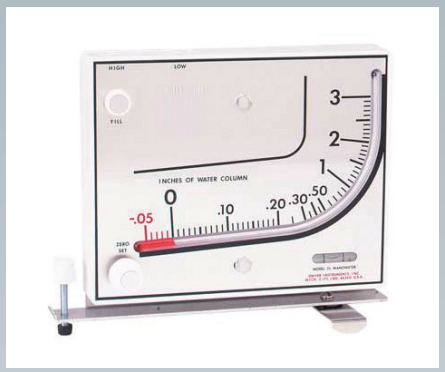
RETAINING GRIDS

Chemco's retaining grid system snap into your existing frame and incorporate impaling prongs which allow for quick placement of paint arrestor media pads.

CATALOG NUMBER	SIZE
2020GRIDS	20"x20"
2025GRIDS	20"x25"
2436GRIDS	24"x36"

Retaining grid

Quick Lock



Manometer

QUICK LOCK TRACK SYSTEM

The Quick Lock Filter Loading System is a fast and economical way to add that second layer of exhaust filtration to your spray booth. This rigid vinyl material house a groove to hold filter blanket media that can be cut from a roll and installed as needed. There are no gaps, sags or tears when using this product — compared to conventional hooks. Quick Lock is available in 5' wide pieces and are packaged individually.

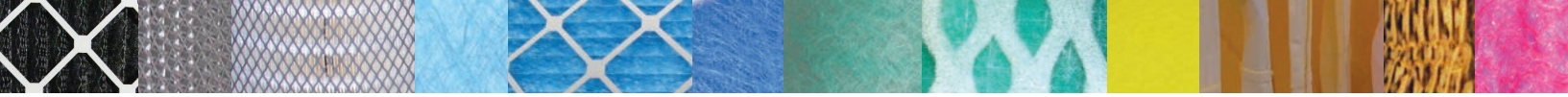
CATALOG NUMBER	SIZE
QUICK LOCK	5'

MANOMETER

Manometer gauge helps ensure you achieve maximum life of your spray booth exhaust filters. High quality and durable to make your spray booth safe and efficient.

CATALOG NUMBER
MANOMETER

Call Chemco for all your Paint Booth Maintenance needs.



CHEMCO MANUFACTURING — SALES TERMS AND CONDITIONS

PRICING
Your Chemco account representative will provide you with current pricing at any time. Prices are subject to change without notice.

MINIMUM ORDERS
All products must be ordered in quantities as provided by this catalog.

PRIVATE LABELING
CHEMCO can provide private labeling if the product category ordered meets the required quantity minimum. Setting up a private label account requires extra lead time to process artwork and receive the necessary approvals. An initial artwork set up charge will apply.

TERMS
ALL Orders are net 30 days. Past due invoices are subject to a 1.5% per month late fee.

CREDIT CARDS
CHEMCO accepts Visa, MasterCard, and American Express for payment. Credit card payments for merchandise will be accepted and processed only at the time the order is shipped and invoiced. Credit card payments will also be accepted for outstanding invoices.

FREIGHT
The customer is responsible for all freight charges on all merchandise order quantities.

DROP SHIPPING
CHEMCO can drop ship your order if requested.

PHONE SCHEDULING OF DELIVERIES
If there is a charge assessed by the freight companies for phone scheduling of deliveries. Payment of this charge is the customers responsibility, and will be included on your invoice.

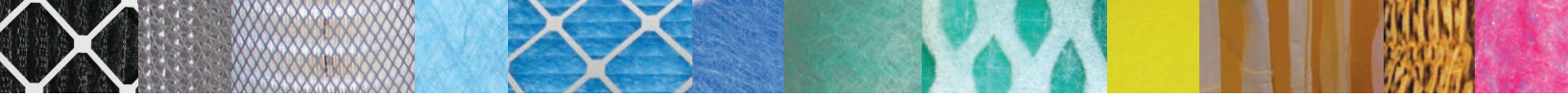
PROOF OF DELIVERY
Proof of delivery is available for a $10.00 charge.

BACK ORDERS AND DISCONTINUED PRODUCTS
All back ordered products will be shipped as soon as they are made available. Customers will be notified of backorders, and product status can be obtained anytime from your CHEMCO representative or our customer service department. The customer also will be notified if a product in our catalog has been discontinued. If available, a substitute product will be recommended.

ADDITIONS OR CANCELLATIONS TO AN EXISTING ORDER
CHEMCO will do its best to accommodate changes or additions to an existing order. Additions to an existing order that has already been shipped will be treated as a new order, subject to the same terms and conditions. Cancellation of all or part of an existing order will be processed if possible; however, CHEMCO cannot be held responsible for merchandise that has already been shipped or is in the process of being shipped. This policy does not apply to private label orders.

RESTOCKING
Products ordered in error may be returned with a Chemco issued return authorization (RMA) from CHEMCO. Invoice number and order date must be supplied. Authorization to return products must be requested within 45 days from the date of the invoice. All returned products are subject to a 20% re-stocking fee plus freight. Discontinued product my not be returned at any time.

WARRANTY
Individual product warranties vary. See your CHEMCO representative for details. CHEMCO MANUFACTURING COMPANY warrants the buyer that CHEMCO products will be free from defects in material and workmanship for the listed warranty period. Any defective CHEMCO product that fails during the applicable warranty will be replaced free of charge, exclusive of labor. The defective product must be undamaged and returned to CHEMCO at 515 Huehl Road, Northbrook, IL 60062 for inspection. CHEMCO's obligation is limited to replacement of goods that are proven to be defective. The full warranty period, for any defective CHEMCO product actually purchased by the buyer, will apply to its replacement. Upon receipt of returned goods, Chemco, will check all product for personal damage. These warranties and remedies do not apply to any products or components that have been subject to misuse (including any use in violation of CHEMCO's instructions for that product) and neglect (including indadequate maintenance, improper storage, incorrect installation or that have been damaged in transit). The forgoing warranties and remedies are exclusive and there are no other warranties, oral or written, expressed or implied, with respect to any products sold hereunder, whether as to merchantability fitness for a particular purpose or any other matter. CHEMCO will not, under any circumstances, whether as a result of breach of contract, breach of warranty, tort or otherwise, be liable for consequential, incidental, special or exemplary damages including, but not limited to, loss of profits, revenues, loss of use or damage to any associated equipment, cost of capital, cost of substitute products, facilities or services, downtime costs, or claims of buyer's customers. Liability on any claim of any kind for any loss or damage arising out of, resulting from, or concerning any aspect of this agreement or from the products or services furnished hereunder, shall not exceed the price of the specific product or shipment that gives rise to claim. This warranty is void if payment in full is not made in accordance with the invoice terms. Warranty periods become effective with the date of purchase.



CHEMCO MANUFACTURING COMPANY

515 Huehl Road, Northbrook, IL 60062-2336

800-323-0431 • FAX 800-336-7706 • www.chemcomfg.com

Filtration Technologies

Air & Waste Management Association Meeting

Tim Elsner
Chrissy Klocker
Donaldson Company Inc.

October 9, 2012

Donaldson
FILTRATION SOLUTIONS

Agenda

- Efficiency Overview
- Control Technologies
- Questions to Ask
- Retro Fitting of Existing Installations
- Questions

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Efficiency Overview

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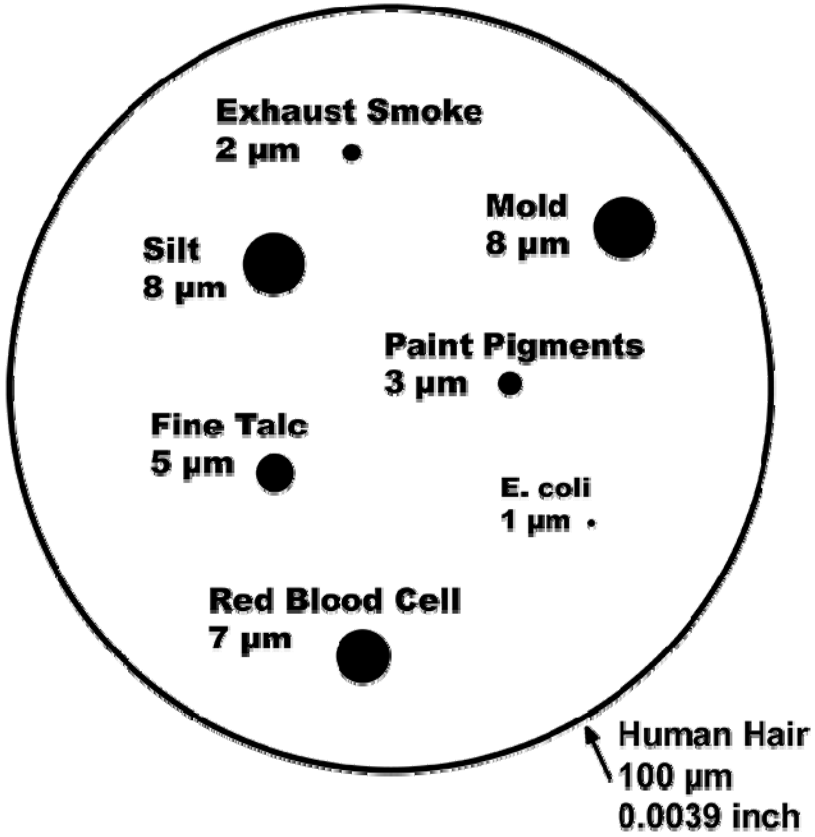
How Big is a Micron?



http://www.velcon.com/aviation/images/Micron-Graph_000.png

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Efficiency ratings of Dry Collectors

- Fabric bags do not have a standard efficiency rating

- Cartridge and Panel filters follow the MERV standard for an initial efficiency rating

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What is MERV?

- MERV – Minimum Efficiency Reporting Value
- Worst case performance of a filter when dealing with particles in the range of 0.3 to 10 microns
- Higher MERV ratings correspond to a greater percentage of particles captured on each pass
- MERV ratings from 1-20

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MERV Table

Standard 52.2 Minimum Efficiency Reporting Value (MERV)	Composite Average Particle Size Efficiency, % in Size Range, nm			Average ASHRAE Arrestance, %, by Standard 52.1 Method	Minimum Final Resistance	
	Range 1 (0.3 - 1.0)	Range 2 (1.0 - 3.0)	Range 3 (3.0 - 10.0)		PA	Inches of Water
1	n/a	n/a	E3 < 20	Aavg < 65	75	0.3
2	n/a	n/a	E3 < 20	65 ≤ Aavg < 70	75	0.3
3	n/a	n/a	E3 < 20	70 ≤ Aavg < 75	75	0.3
4	n/a	n/a	E3 < 20	75 ≤ Aavg	75	0.3
5	n/a	n/a	20 ≤ E3 < 35	n/a	150	0.6
6	n/a	n/a	35 ≤ E3 < 50	n/a	150	0.6
7	n/a	n/a	50 ≤ E3 < 70	n/a	150	0.6
8	n/a	n/a	70 ≤ E3	n/a	150	0.6
9	n/a	E2 < 50	85 ≤ E3	n/a	250	1.0
10	n/a	50 ≤ E2 < 65	85 ≤ E3	n/a	250	1.0
11	n/a	65 ≤ E2 < 80	85 ≤ E3	n/a	250	1.0
12	n/a	80 ≤ E2	90 ≤ E3	n/a	250	1.0
13	E1 < 75	90 ≤ E2	90 ≤ E3	n/a	350	1.4
14	75 ≤ E1 < 85	90 ≤ E2	90 ≤ E3	n/a	350	1.4
15	85 ≤ E1 < 95	90 ≤ E2	90 ≤ E3	n/a	350	1.4
16	95 ≤ E1	95 ≤ E2	95 ≤ E3	n/a	350	1.4

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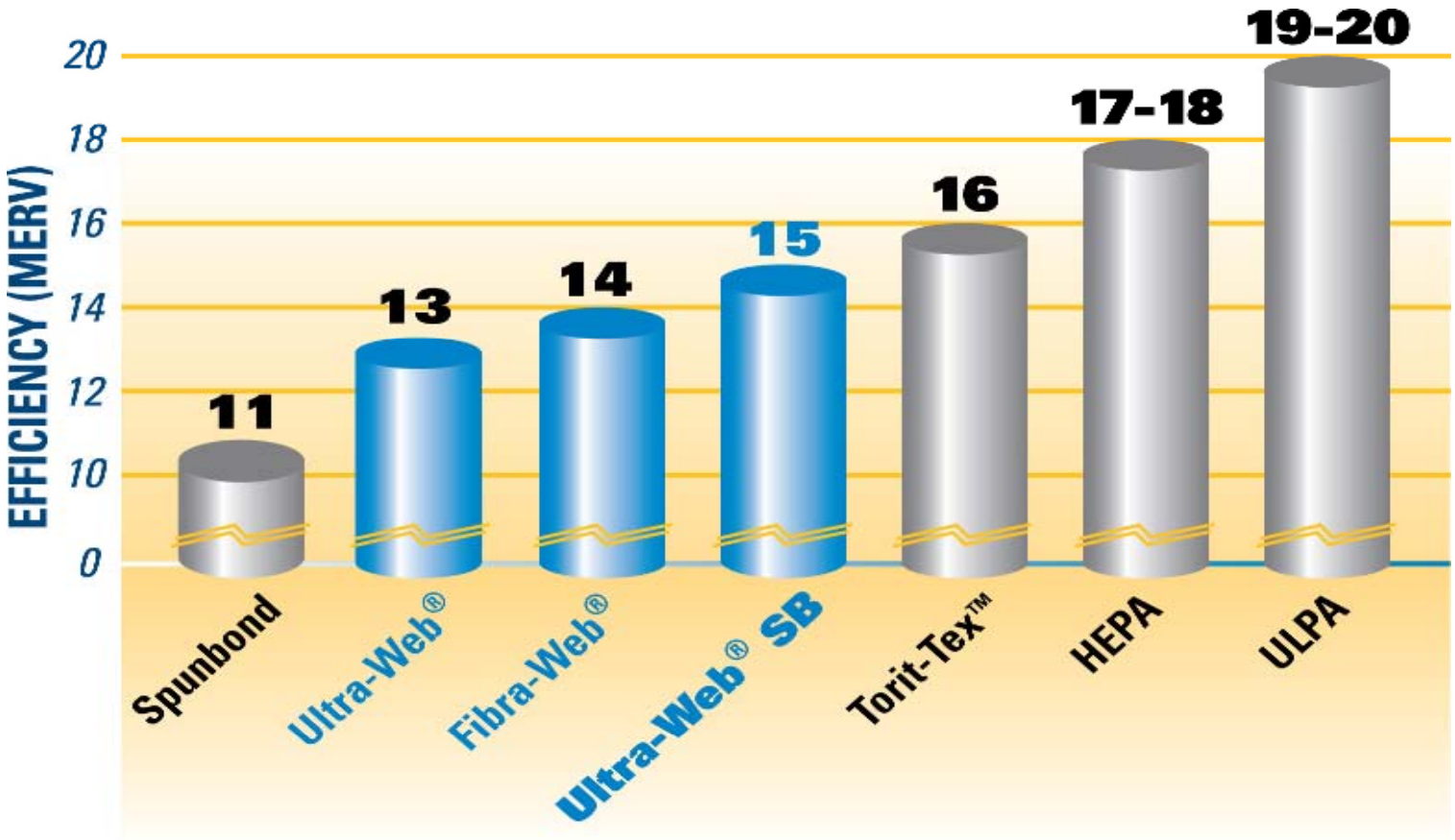
Donaldson MERV Ratings



At MERV 13, standard first-fit Ultra-Web filters still provide the best value for most applications. No other standard first-fit filter comes even close.

*Established through independent lab testing based on ASHRAE Test Standard 52.2-1999

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Control Technologies

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Cartridge Collectors

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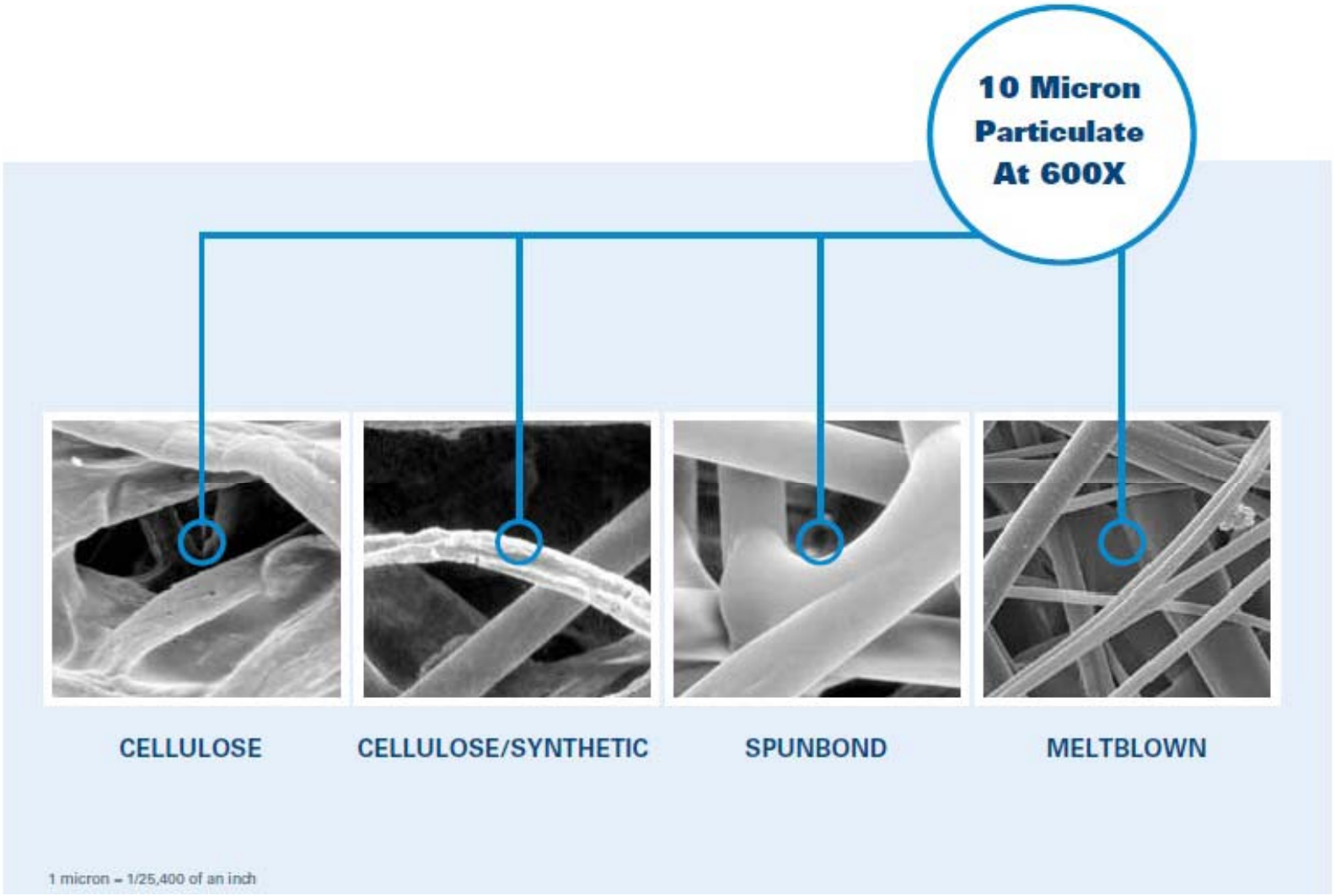
Filter Medias



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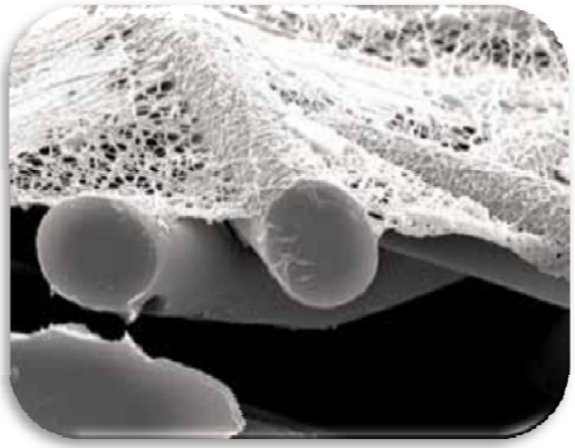
Industry-Leading Solutions

Ultra-Web®

The world standard for advanced nanofiber air filtration

- Nanofibers allow surface loading
  - Lower pressure drop
  - Long life
- 28 years of successful applications



Clean Ultra-Web Filter

Surface-loaded Ultra-Web Filter

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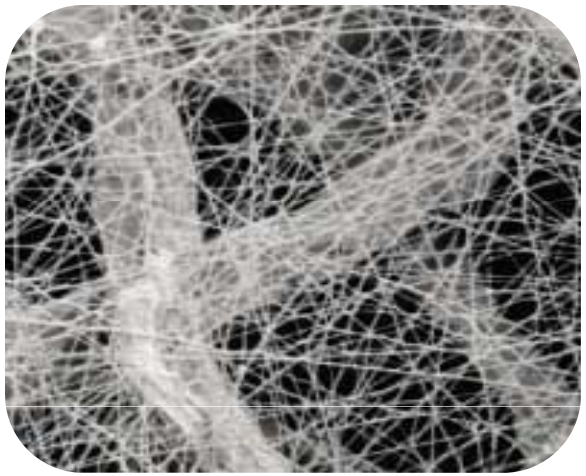
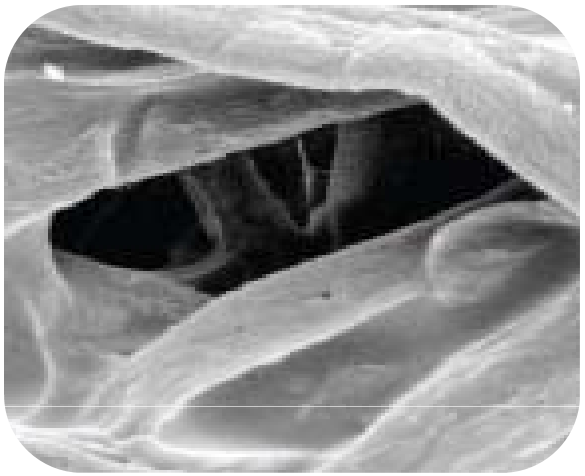
What is Ultra-Web®?

- Made with an electrospinning process that produces a very fine, continuous, resilient fiber of 0.2-0.3 micron in diameter
- Patented media technology
- Engineered to perfection
- Highly effective filtration media on submicron particulate
- Intuitively surface loading



Ultra-Web



Cellulose

10 Micron Particulate at 600X

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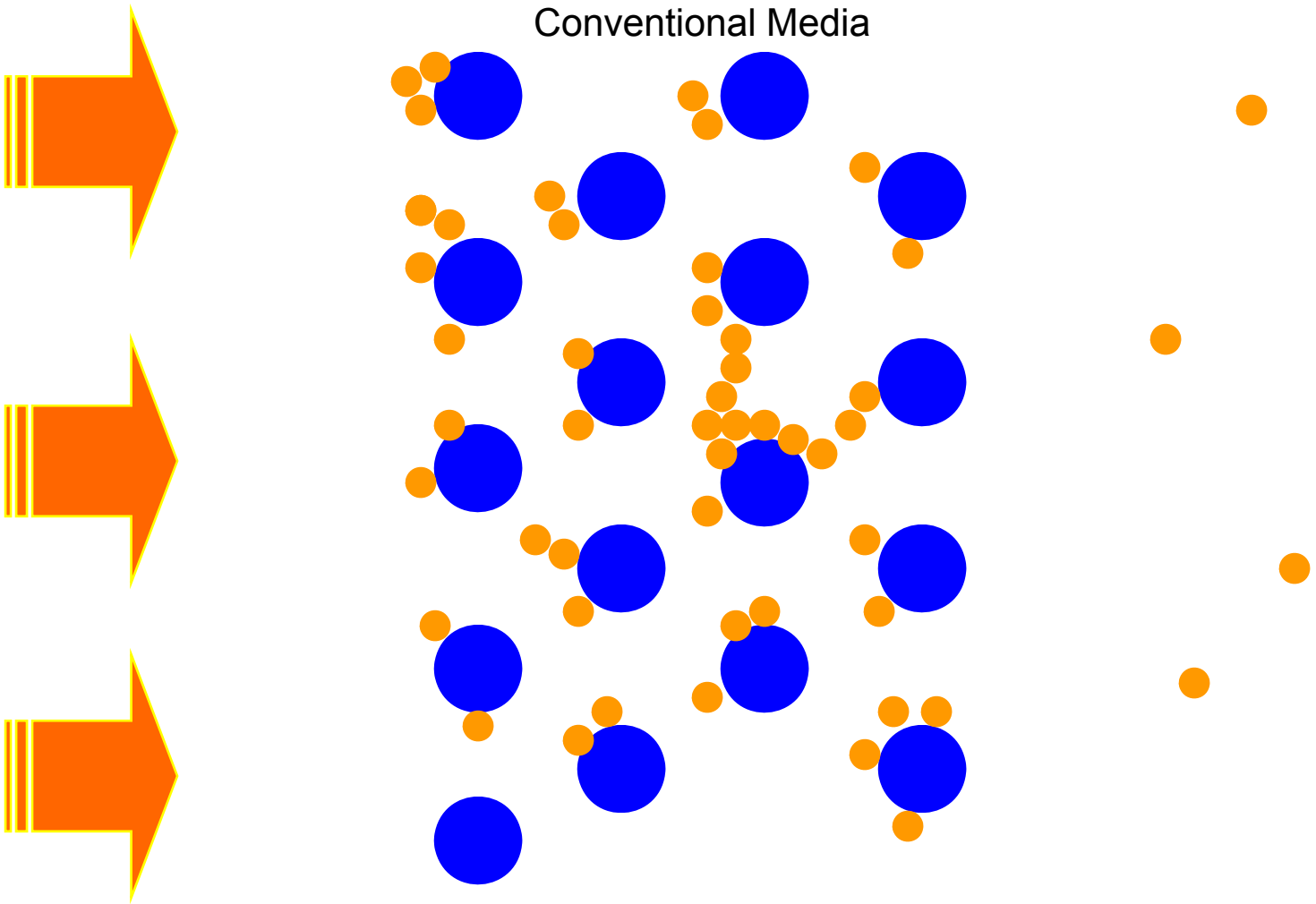
Depth-Loading



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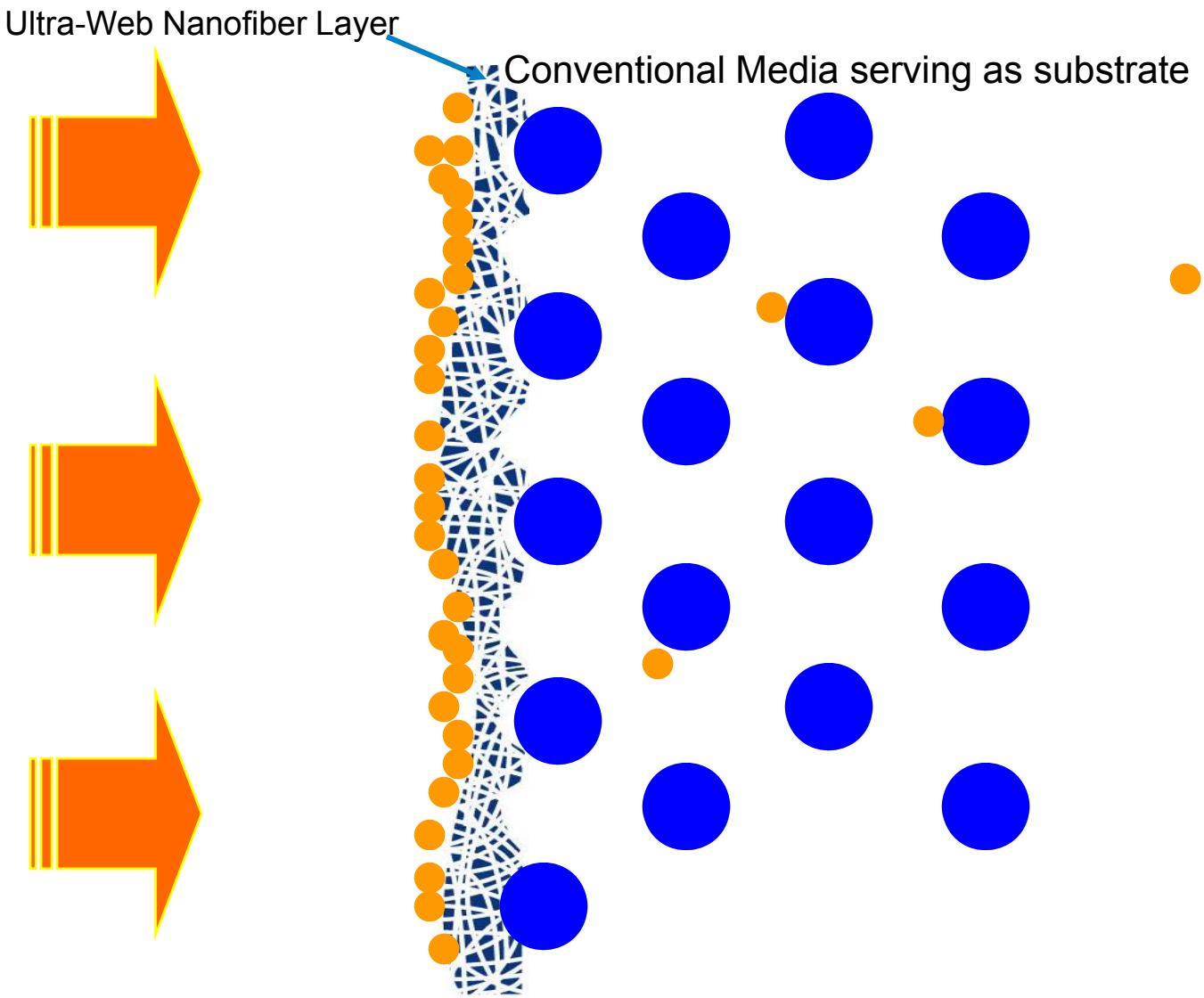
Surface Loading



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Baghouse Collectors

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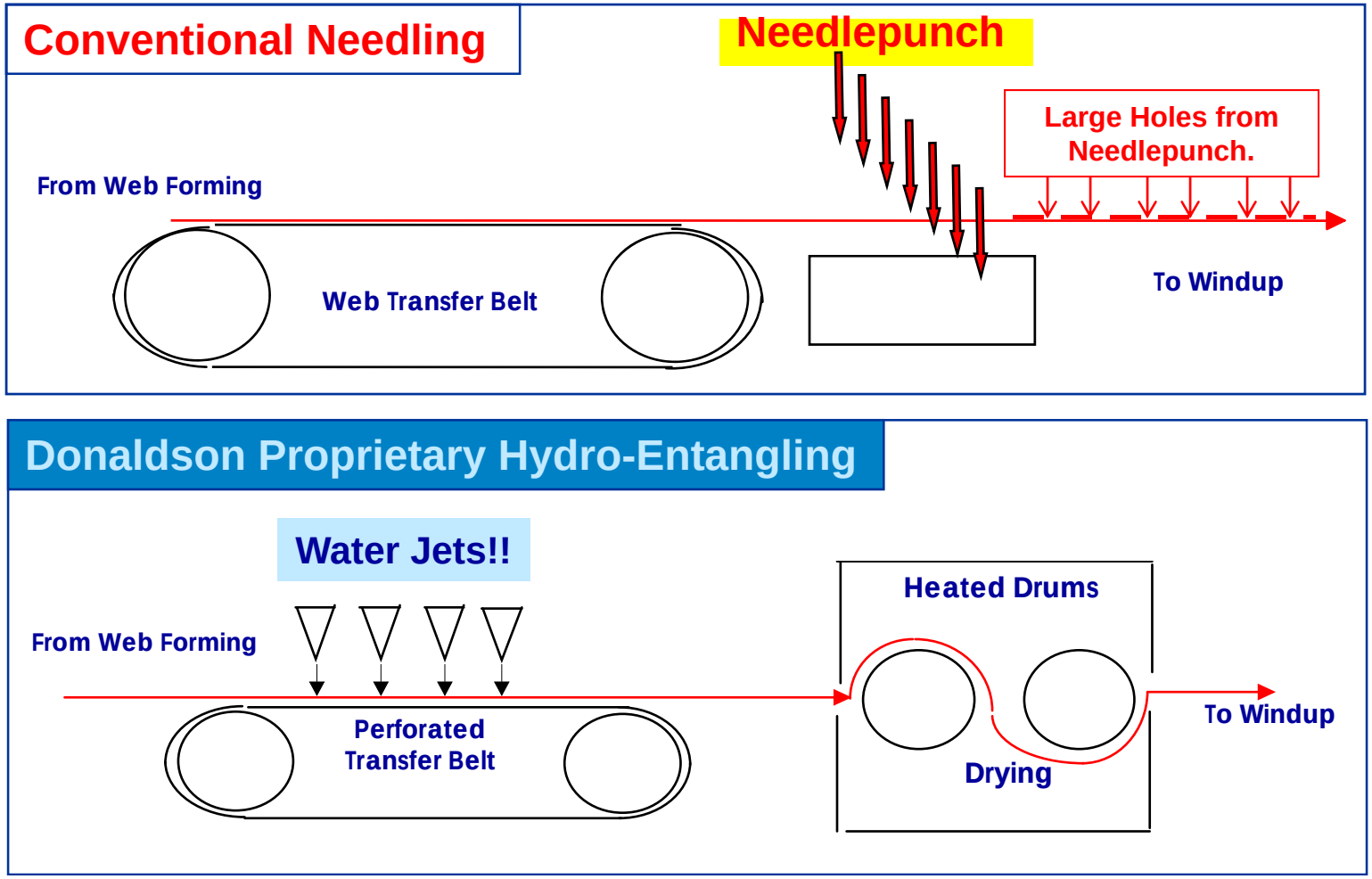
Needling vs Hydro-Entanglement



Dura-Life Fibers are Smaller than 16 oz Polyester (33%)

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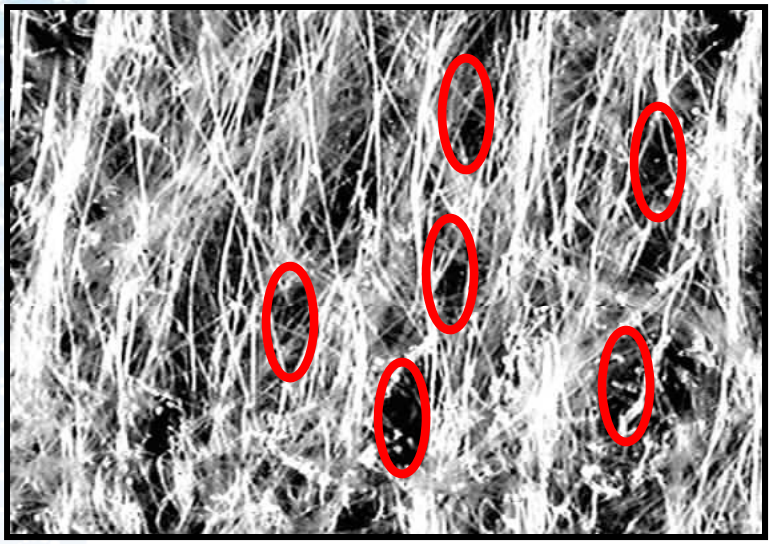
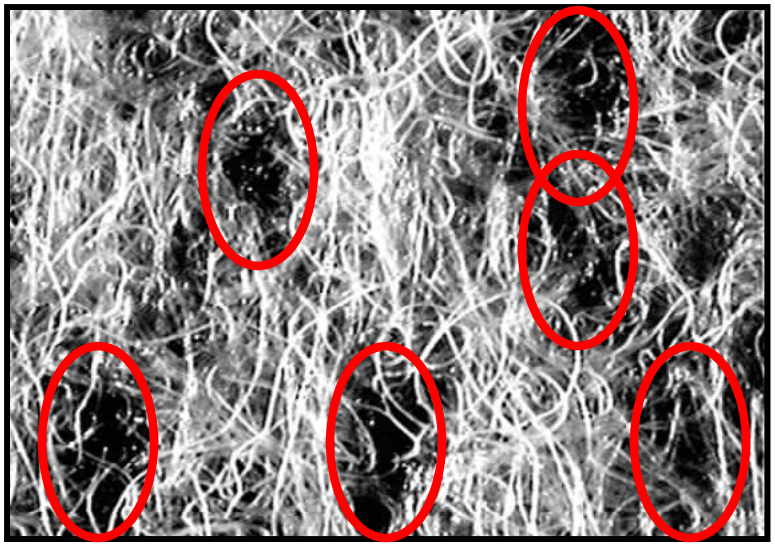
Dura-Life Filter Media



10.5 oz DURA-LIFE



16 oz Standard Polyester

Hydro-entangling and Smaller Fibers Result in:

- More Uniform Material than Standard Polyester Felt
- +19% Reduction in Maximum Pore Size

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Surface Loading

Inside Surface of Dirty Bags:

Dura-Life Bag
Clean Air Side (300x)

Needled Polyester Bag
Clean air Side (300x)

Dura-Life:
Dust has pulsed off and has not embedded on inside of filter bag.

16oz Poly:
Dust has embedded on inside of filter bag, causing filter to blind off.

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Better Pulsing

Dura-Life Bag in Service for 7 Months
Application: Cement Dust

Before Pulsing

Surface evenly coated with cement dust.

After Pulsing

Surface returned to original appearance after pulse cleaning.

The benefit to the customer:
A better cleaning filter means pressure drop will remain lower, longer.
Thus providing longer filter life!

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Pleated Bags

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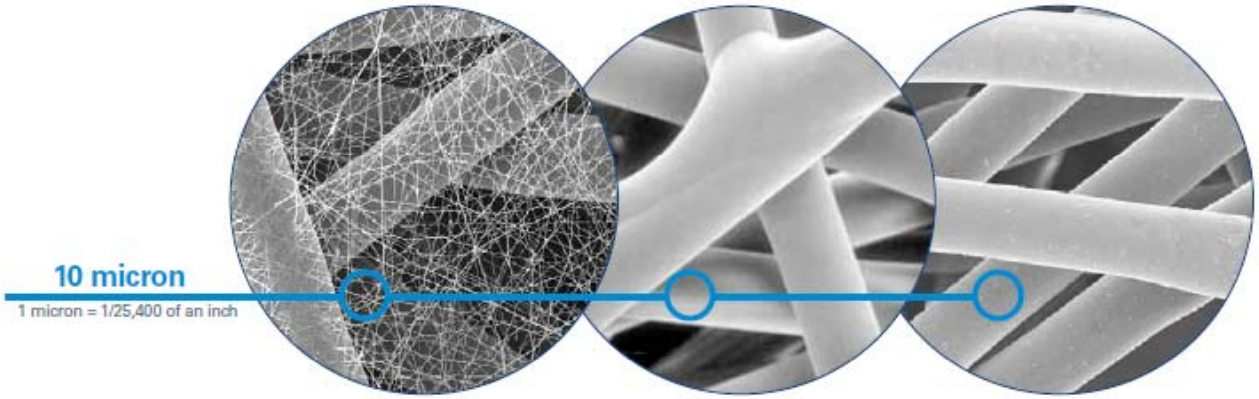
Ultra-Web on Spunbond



Ultra-Web SB Nanofiber Technology (600x)

Spunbond Media (600x)

Standard 16 oz. Polyester Media (600x)

Pleated Bag Filters	3-10 µm	1-3 µm	0.3-1 µm
Ultra-Web® SB Pleated Bag Filters MERV 15 Rating	**Excellent**	**Excellent**	**Excellent**
Spunbond Pleated Bag Filters	Excellent	Fair	Fair
16 oz. Polyester Felt Bag Filters	Fair	Fair/Poor	Poor

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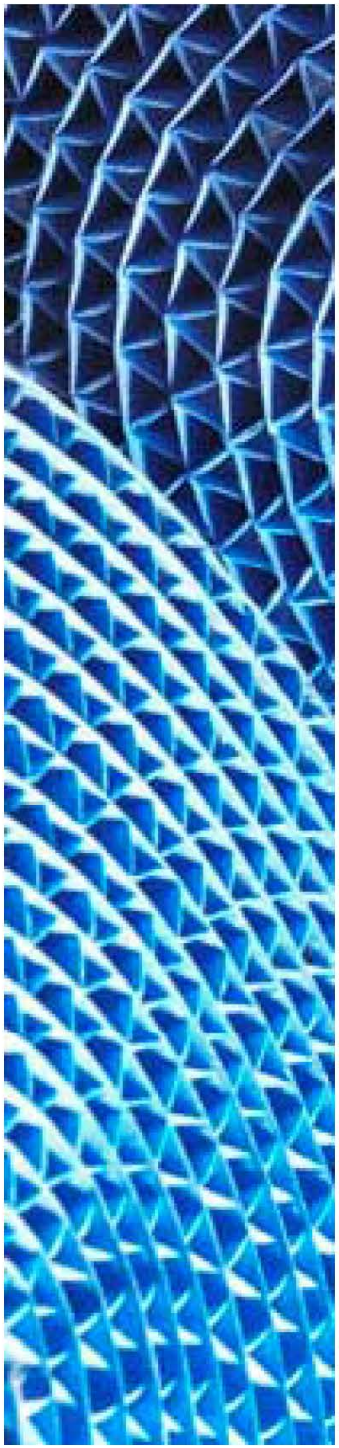
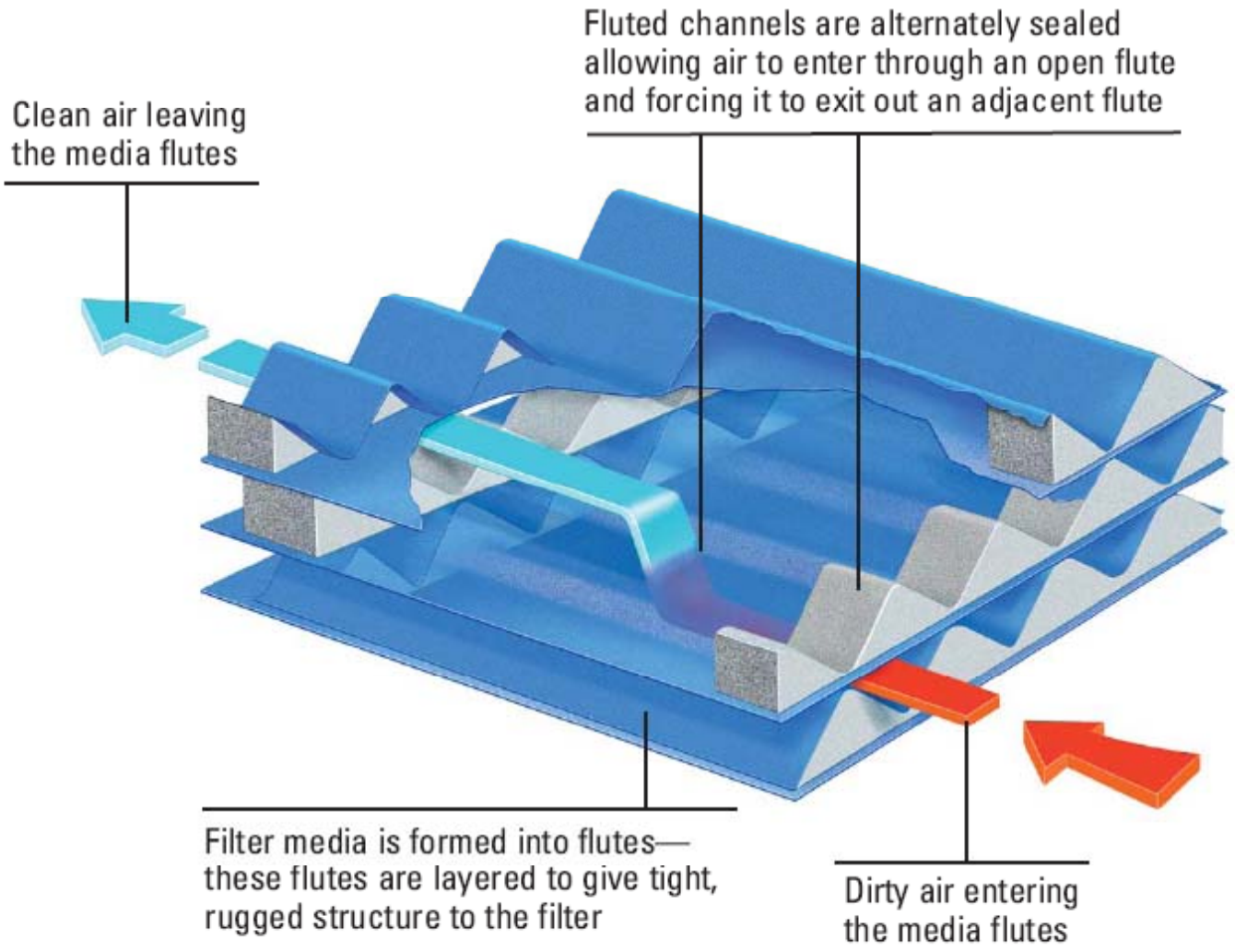
FILTRATION SOLUTIONS



PowerCore®

Smaller. Smarter Collectors.™

What is PowerCore®?



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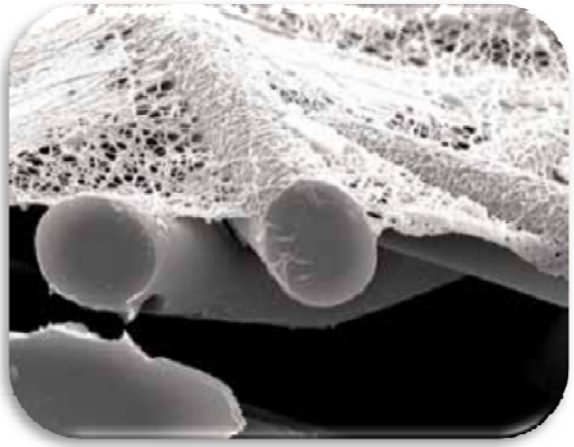
Ultra-Web on PowerCore



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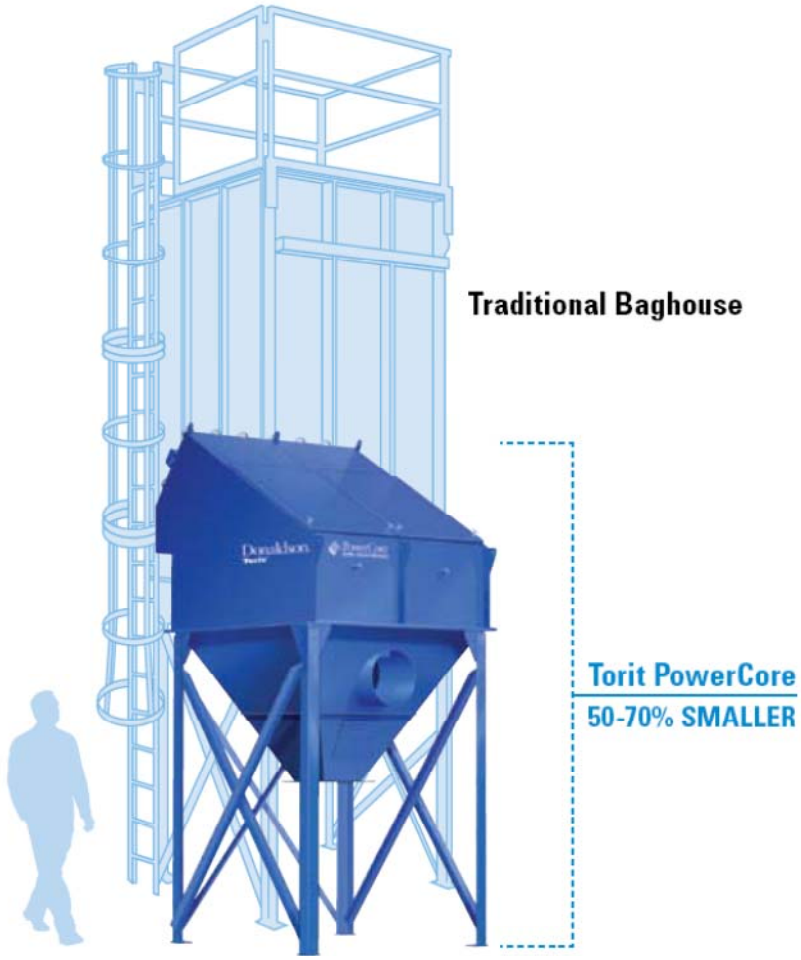
Greatly Reduced Collector Size

70% Shorter



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Retro Fitting Existing Installations

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Cartridge Collectors

- Ultra-Web Media
  - MERV 13
- Torit-Tex Media (PTFE on Spun Bond)
  - MERV 16
- High Temp Media (Up to 350°F)
  - MERV 13
- Donaldson can retro-fit other companies collectors

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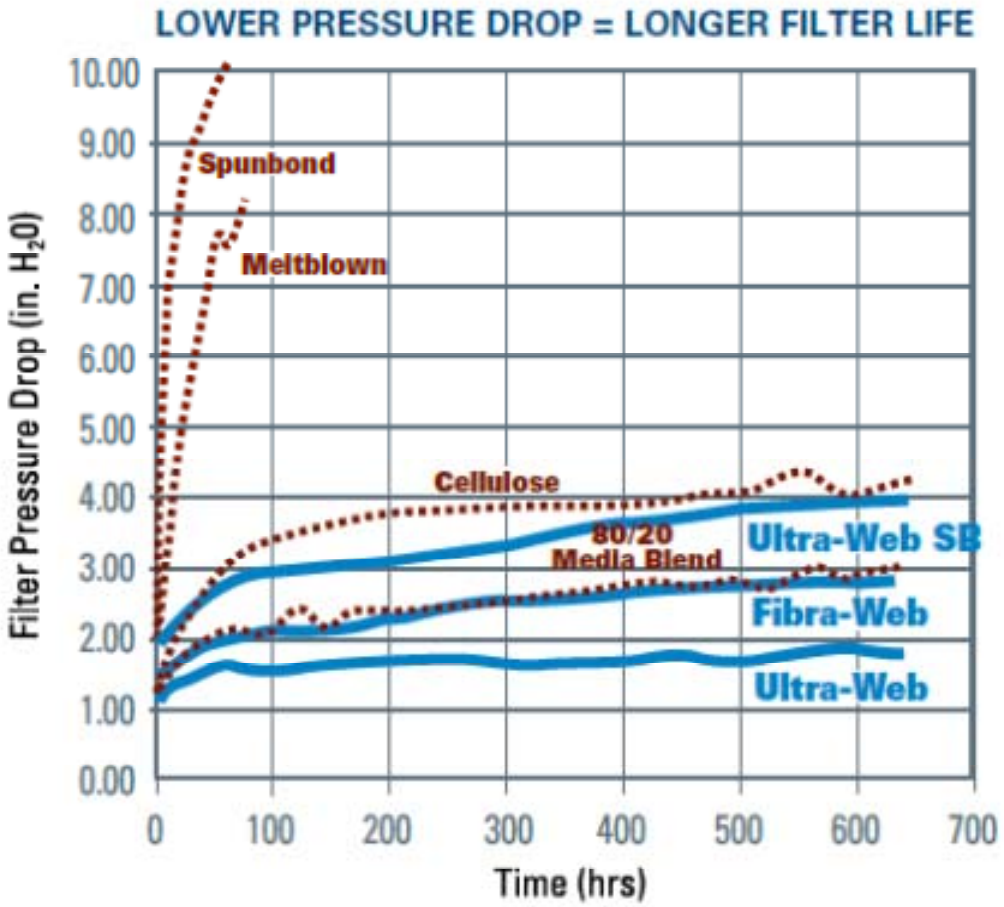
Energy Savings



Results were derived testing Atomite test dust in an 8-cartridge collector @1.0 gr./cu.ft, Goyen Millennium valves, 90 psi cleaning pressure, 100ms on time 10 second off time. Airflow goal = 4064 scfm.

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Baghouse Collectors

- Dura-Life Media
  - Varying types of lengths and sizes
- Pleated Spun Bond Media
  - Varying types of lengths and sizes
  - Filters 60” in length and below can offer Ultra-Web

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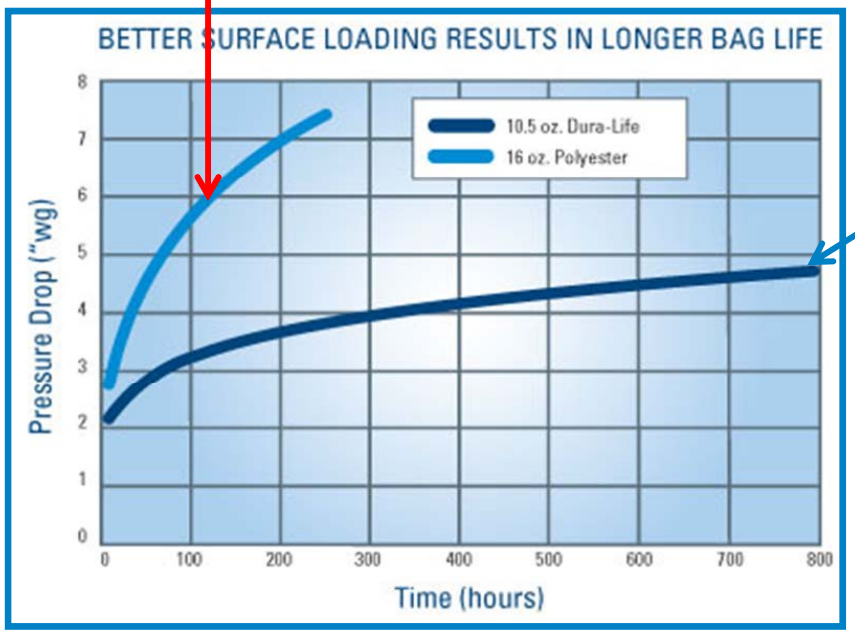
Longer Filter Life

16 oz Poly

Dura-Life



Pressure Drop →

Filter Life (hours) →

Dura Life provides 2-3 times more filter life than standard 16 oz polyester when replacing due to pressure drop.

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Questions to Ask

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What is the process?

- Particulate Generation
- Toxicity of the particulate
- State and Local Regulations
- Temperature
- Any additives
  - Moisture
  - Bonding agents
  - Rouge

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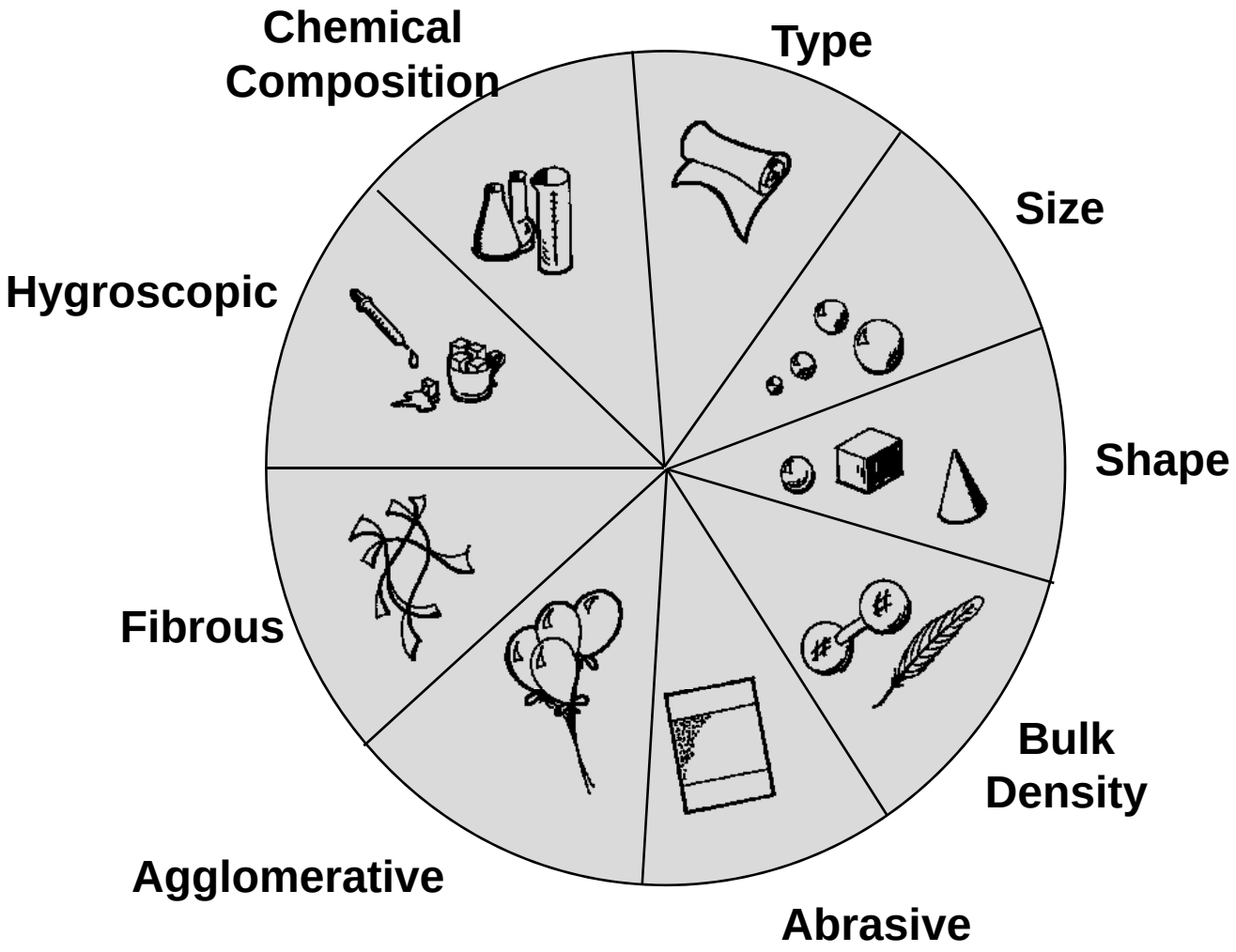
What is the particulate?



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Where is the collector location?

- Indoors
  - Footprint
  - Recirculation
  - Explosion Mitigation
- Outdoors
  - Environmental Impacts
  - Recirculation
  - Explosion Mitigation

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Summary

- MERV 10 and higher is rated to capture over 50% of particles in the 1-3 micron range
- Surface loading can increase efficiency and filter life
- Most existing units can be retrofitted to meet the new standards
- Ask questions

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Thank you for your time

Questions?

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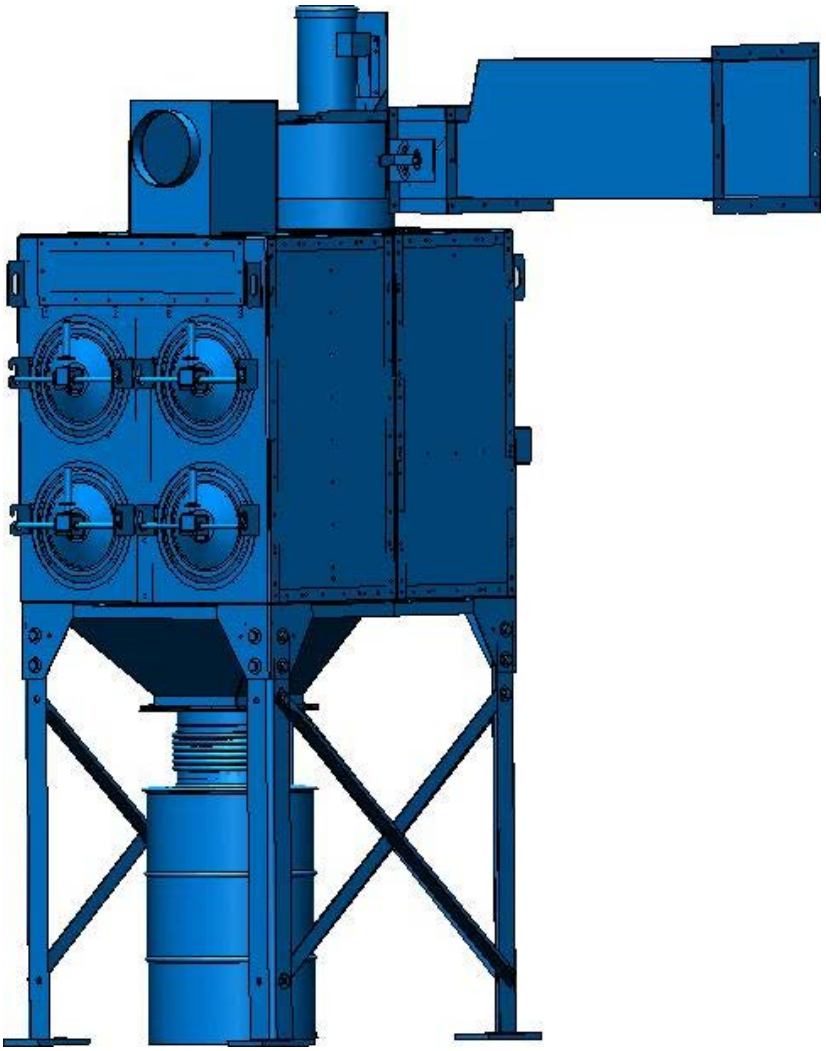
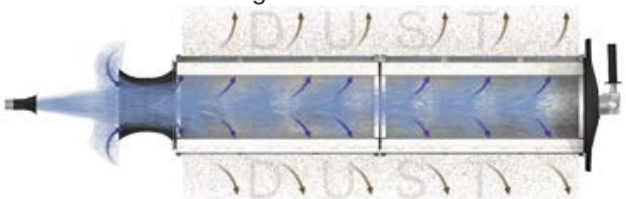
VK Series Dust Collectors



Fewer Pulse are needed to clean the cartridge filters, so less compressed air is used. This a substantial cost saving for the customer over the life of the unit.



UNMATCHED CLEANING EFFICIENCY
Viking dust collectors are engineered for powerful filtration at lower total costs. The cartridge cleaning system cleans more filter area, lengthens filter life, reduces maintenance costs, and uses less compressed air than typical backflush systems.
LOWER ENERGY NEEDS

Viking dust collectors help you conserve costly resources. The cartridge cleaning system requires less compressed air, and each unit incorporates an energy efficient EPACT motor. The amp load is smaller, and voltage requirements are less restrictive.

SMALL FOOTPRINT

Our compact design allows you to locate dust collectors in virtually any area.

EAR-FRIENDLY OPERATION

Walk by a Viking dust collector, you won't hear the telltale BANG! of a competitor's cartridge cleaning system. Our cartridge cleaning system is much quieter, by up to 15 DBA, depending on the type of pulse system used.

STANDARD FEATURES:

Construction: 12 and 14 gauge steel
Paint: Industrial grade Viking blue, textured baked enamel, inside & outside
Compressed Air: Requires 90 PSI for incremental rotos
Wind Load: Rated to 100 mph
Control Panel/Electrical: All package collectors come complete with factory installed motor starter and overload protection, step-down transformer, 20 mm push button start/stop switches, solid state timer board with fuse protection
Housing Pressure: Rated to +/- 20 inches w.c.
Filtration Efficiency: 99.999% > .8 microns, 99.995% .3 to .8 microns, rated by ASHRAE 52.2 using atomite test dust
Hopper: Collection hopper is standard equipment
Click the chart below to view in full size.

DIMENSIONS AND SPECIFICATIONS

VK Models	Filter Quantity	Total Filter Media Area (FT²)	Valve Quantity	Module Quantity	Unit Weight (LBS)	Compressed Air Consumption SCF/ PULSE	Compressed Air Consumption SCFM @P/Min	Height	Width	Depth
VK 2 - 2 - SD	2	510	2	1	954	1.7	10.2	7' 8"	2' 1"	5' 1"
VK 4 - 2 - SD	4	1020	4	1	1317	1.7	10.2	7' 8"	3' 7"	5' 1"
VK 6 - 2 - SD	6	1530	6	1	1726	1.7	10.2	7' 8"	5' 4"	5' 1"
VK 2 - 2 - DD	2	510	2	1	890	1.7	10.2	5' 4"	2' 1"	5' 1"
VK 4 - 2 - DD	4	1020	4	1	1197	1.7	10.2	5' 4"	3' 7"	5' 1"
VK 6 - 3 - DD	6	1530	6	1	2020	1.7	10.2	6' 11"	3' 7"	5' 1"
VK 6 - 3 - SD	6	1530	6	1	1726	1.7	10.2	9' 4"	3' 7"	5' 1"
VK 8 - 2 - H55	8	2040	4	1	1922	1.7	10.2	10' 3"	3' 9"	7' 3"
VK 16 - 2 - H55	16	4080	8	2	3237	3.4	20.4	10' 3"	7' 6"	7' 3"
VK 24 - 2 - H55	24	6120	12	3	4552	5.1	30.6	10' 3"	11' 3"	7' 3"
VK 32 - 2 - H55	32	8160	16	4	5947	6.8	40.8	10' 3"	15' 0"	7' 3"
VK 12 - 3 - H55	12	3060	6	1	2420	1.7	10.2	11' 11"	3' 9"	7' 3"
VK 24 - 3 - H55	24	6120	12	2	4016	3.4	20.4	11' 11"	7' 6"	7' 3"
VK 36 - 3 - H55	36	9180	18	3	5612	5.1	30.6	11' 11"	11' 3"	7' 3"
VK 48 - 3 - H55	48	12240	24	4	7288	6.8	40.8	11' 11"	15' 0"	7' 3"
VK 60 - 3 - H55	60	15300	30	5	8884	8.5	51	11' 11"	18' 9"	7' 3"
VK 72 - 3 - H55	72	18360	36	6	10480	10.2	61.2	11' 11"	22' 6"	7' 3"
VK 16 - 4 - H55	16	4080	8	1	2873	1.7	10.2	13' 7"	3' 9"	7' 3"
VK 32 - 4 - H55	32	8160	16	2	4762	3.4	20.4	13' 7"	7' 6"	7' 3"
VK 48 - 4 - H55	48	12240	24	3	6651	5.1	30.6	13' 7"	11' 3"	7' 3"
VK 64 - 4 - H55	64	16320	32	4	8620	6.8	40.8	13' 7"	15' 0"	7' 3"
VK 80 - 4 - H55	80	20400	40	5	10509	8.5	51	13' 7"	18' 9"	7' 3"
VK 96 - 4 - H55	96	24480	48	6	12398	10.2	61.2	13' 7"	22' 6"	7' 3"
VK 112 - 4 - H55	112	28560	56	7	14367	11.9	71.4	13' 7"	26' 3"	7' 3"
VK 128 - 4 - H55	128	32640	64	8	16256	13.6	81.6	13' 7"	30' 0"	7' 3"
VK 20 - 5 - H55	20	5100	10	1	3400	1.7	10.2	17' 6"	3' 9"	7' 3"
VK 40 - 5 - H55	40	10200	20	2	5700	3.4	20.4	17' 6"	7' 6"	7' 3"
VK 60 - 5 - H55	60	15300	30	3	7900	5.1	30.6	17' 6"	11' 3"	7' 3"
VK 80 - 5 - H55	80	20400	40	4	10250	6.8	40.8	17' 6"	15' 0"	7' 3"
VK 100 - 5 - H55	100	25500	50	5	12600	8.5	51	17' 6"	18' 9"	7' 3"
VK 120 - 5 - H55	120	30600	60	6	14950	10.2	61.2	17' 6"	22' 6"	7' 3"

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