United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

Permit Number: R10TNSR0100
Issued: September 30. 2014
AFS Plant I.D. Number: 16-077-E0006

Synthetic Minor Source Permit

This permit is issued in accordance with the provisions of the Federal Minor New Source Review Program in Indian Country, 40 CFR § 49.158, and applicable rules and regulations to,

Petersen Incorporated Idaho

for operations in accordance with the conditions listed in this permit, at the following location:

Fort Hall Reservation
463 S. Fortress Street
Pocatello, Idaho 83204

Person Responsible for Compliance: John Rasband
Environmental, Safety and Health Manager

1527 N. 2000W
Ogden, Utah 84404
Phone: 801-732-2054

Fax: 801-337-0680
Email: johnr@peterseninc.com

A technical support document that describes the bases for conditions contained in this permit is also available.

Kate Kelly, Director
Office of Air, Waste and Toxics
U.S. Environmental Protection Agency, Region 10

9/30/2014
Date

1. General Conditions

1.1. For purposes of this permit, the permitted source consists of the following equipment and/or activities:

Emission Unit ID	Description	Maximum Operation	Control Device1
PI-01	Coating Spray Booth, Sprayline Model TSDF 60-20-18 DT Custom Deluxe Side.	193,440 gallons per year	Fabric Exhaust Filters and Manometer
PI-02	Dry Abrasive Blasting Booth Enclosure (55 feet x 20 feet x 20 feet)	1,750 pounds of steel shot per hour throughput	Baghouse

1.2. Petersen Incorporated Idaho (Petersen or Permittee) shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Air Act.

1.3. Compliance with the terms of this permit does not relieve or exempt the permittee from compliance with other applicable Clean Air Act requirements or other applicable federal requirements, tribal, state or local laws or regulations.

2. Emission Limits and Work Practice Requirements

2.1. At all times, including periods of startup, shutdown, maintenance and malfunction, the Permittee shall, to the extent practicable, maintain and operate each emission unit, including any associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions and considering the manufacturer's recommended operating procedures. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

2.2. Volatile organic compounds (VOCs) emissions from this source shall not exceed 4.90 tons per year as determined on a rolling, 365-day basis, which shall be determined by calculating the emissions (tons) for each day and adding the emissions (tons) calculated for the previous 364 days.

2.2.1. Daily VOC emissions (tons) from the source shall be determined by multiplying the maximum VOC content percent by weight as a fraction (e.g., 100% is 1.0 and 50% is 0.50) by the coating density (pounds/gallon) and by the amount of VOC-containing material consumed (gallons/day) and dividing by 2000 pounds/ton.

2.2.2. Maximum VOC content percent by weight as a fraction shall be determined by 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. Other alternative methods approved by the EPA may be used to determine the VOC contents. The EPA reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for the material content determination, the data obtained shall supersede the MSDS.

2.3. Hazardous Air Pollutant (HAP) emissions from this source shall not exceed 21 tons per year as determined on a rolling, 365-day basis, which shall be determined by calculating the emissions (tons) for each day and adding the emissions (tons) for the previous 364 days.

2.3.1. Daily HAP emissions (tons) from the source shall be determined by multiplying the maximum HAP content percent by weight as a fraction (e.g., 100% is 1.0 and 50% is 0.50) by the coating density (pounds/gallon) and by the amount of HAP-containing material consumed (gallons/day) and dividing by 2000 pounds/ton.

2.3.2. Maximum HAP content percent by weight as a fraction shall be determined by the 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. Other alternative methods approved by the EPA may be used to determine the HAPs contents. The EPA reserves the right to require the Permittee to determine the HAP contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for the material content determination, the data obtained shall supersede the MSDS.

2.4. Emissions of any single HAP from this source shall not exceed 9 tons per year as determined on a rolling, 365-day basis, which shall be determined by calculating the emissions (tons) for each day and adding the emissions (tons) for the previous 364 days.

2.4.1. Daily emissions (tons) of any single HAP from the source shall be determined by multiplying the maximum HAP content percent by weight as a fraction (e.g., 100% is 1.0 and 50% is 0.50) by the coating density (pounds/gallon) and by the amount of HAP-containing material consumed (gallons/day) and dividing by 2000 pounds/ton.

2.4.2. Maximum HAP content percent by weight as a fraction shall be determined by the 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. Other alternative methods approved by the EPA may be used to determine the HAPs contents. The EPA reserves the right to require the Permittee to determine the HAP contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for the material content determination, the data obtained shall supersede the MSDS.

2.5. Emissions of particulate matter (PM) from this source shall not exceed 9.90 tons/year as determined on a rolling 12-month basis by calculating the emissions (tons/month) for each month and adding the emissions for the previous eleven months.

2.6. Emissions of particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}) from this source shall not exceed 4.90 tons/year as determined on a rolling 12-month basis by

calculating the emissions (tons/month) for each month and adding the emissions for the previous eleven months.

2.7. Emissions of particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$) from this source shall not exceed 2.90 tons/year as determined on a rolling 12-month basis by calculating the emissions (tons/month) for each month and adding the emissions for the previous eleven months.

2.8. All spray-applied coating operations must be applied in the spray booth.

2.9. All VOC-containing and HAP-containing materials (e.g., coatings, thinners, and clean-up solvents) shall be stored in closed containers.

2.10. All waste materials containing VOC and HAPs (e.g., soiled rags) shall be stored in sealed containers until properly disposed.

2.11. The spray booth must be equipped with an exhaust filter certified by the manufacturer to achieve 98% capture of PM, PM_{10}, and $PM_{2.5}$. All air exiting the spray booth during any coating operations shall pass through this exhaust filter at all times. The permittee shall use published filter data provided by filter vendors to demonstrate compliance with this requirement. The exhaust filters shall be operated and maintained in accordance with manufacturer's specifications. Copies of the filter vendors data shall be available onsite for use by the permittee and EPA. Any time periods when the coating operations are being performed and the exhaust filter is not fully operational, exhaust filter is not in good operating condition, or the exhaust from the spray booth coating operation is not being routed to the filter shall be documented.

2.12. All dry abrasive blasting operations shall be performed inside the blast booth enclosure. All equipment associated with the dry blasting operations shall be operated according to manufacturer's specifications.

2.13. All exhaust air from the dry abrasive blasting operations shall be captured and vented to a baghouse control device at all times. The baghouse control device shall be operated and maintained during all times when the dry abrasive blasting operations are being performed. The baghouse control device shall be operated and maintained according to manufacturer's specifications. Copies of the manufacturer's specifications shall be available onsite for use by permittee and EPA. Any time periods when the dry abrasive blasting operations are being performed and the baghouse is not fully operational, the baghouse is not in good operating condition, or the exhaust from the dry blasting operations is not being routed to the baghouse shall be documented.

2.14. The baghouse control device shall be operated and maintained such that it achieves a control efficiency of greater than or equal to 89 percent for PM, PM_{10} and $PM_{2.5}$. Pressure drop across the baghouse control device shall be maintained within the range specified by manufacturer's specifications. The permittee shall use published control efficiency and pressure drop range data provided by baghouse vendors to demonstrate compliance with this requirement.

2.15. The steel shot throughput in the dry abrasive blasting operations shall not exceed 31,755 pounds per year as determined on a rolling, 12-month basis by calculating the pounds of steel shot throughput (pounds/month) for each month and adding the pounds of steel shot throughput for the previous eleven months.

3. Monitoring and Recordkeeping Requirements

3.1. The spray booth exhaust filters shall be visually inspected with respect to pressure drop, alignment, saturation, tears, holes and any other condition that may affect the filter's performance and maintain a daily written record of filter inspections at least once every 24 hours while the spray booth is operating. The exhaust filters shall be replaced according to the manufacturer's specifications.

3.2. The pressure drop across the baghouse control device shall be monitored, read, and recorded once every 24 hours while the dry abrasive blasting operations are being performed. The time and date of each pressure drop reading, and whether or not the observed pressure drop was within or outside the range specified by the manufacturer's specifications shall be recorded.

3.3. Each day, the Permittee shall calculate and record the daily emissions of VOC and HAPs at the source for the previous calendar day using the calculation techniques required in Condition 2.

3.4. Each day, the Permittee shall calculate and record the daily rolling 365-day emissions for VOC and HAPs of the previous calendar day by using the daily emissions calculated for the previous 365 days pursuant to Condition 3.3.

3.5. By the tenth of each month, the Permittee shall calculate and record the monthly and the rolling 12-month total PM, PM_{10}, and PM2.5 emissions and amount of steel shot throughput using the calculation techniques required in Condition 2.

3.6. The Permittee shall track and record the operations for the source, such that VOC and HAP, emissions can be calculated on a daily and rolling, 365-day basis, and PM, PM_{10}, and $PM_{2.5}$ emissions and amount of steel shot throughput can be calculated on a monthly and rolling, 12-month basis. Records shall include, but not be limited to:

- 3.6.1. VOC-containing and HAP-containing materials purchase records;
- 3.6.2. Daily gallons of VOC-containing and HAP-containing material usage;
- 3.6.3. Name and Material Safety Data Sheets (MSDS) for all VOC-containing and HAP-containing materials used on-site;
- 3.6.4. Density in pounds per gallon of each VOC-containing and HAP-containing material used;
- 3.6.5. Percent by weight of all VOC and HAPs in each material used;
- 3.6.6. Spray booth filter efficiency vendor data and purchase records
- 3.6.7. The date when each spray booth filter is replaced
- 3.6.8. Steel shot material purchase records, throughput, and hours of operation
- 3.6.9. Daily baghouse pressure drop readings during dry abrasive blasting operations
- 3.6.10. The date when each baghouse filter is replaced
- 3.6.11. Baghouse filter efficiency data, purchase and usage records
- 3.6.12. Emission factors used; and
- 3.6.13. Any other information used to determine daily emissions of VOC, HAPs, and monthly PM, PM_{10}, and $PM_{2.5}$ and amount of steel shot throughput.

3.7. The Permittee shall maintain records of emission calculations and parameters used to calculate emissions for at least five years.

4. Reporting Requirements

4.1. Once each year, the Permittee shall, along with the annual registration required by 40 CFR § 49.138(e)(2), submit to the EPA a report containing the 365 daily rolling 365-day emission calculations and twelve monthly rolling 12-month emissions calculations for the previous calendar year.

4.2. The report required under Condition 4.1 shall contain a description of all emissions estimating methods used, including emission factors and their sources, a summary of materials usage, assumptions made, and production data.

4.3. EPA Mailing Address. All submittals, notifications and reports to the EPA shall be sent to:

Original Documents go to the EPA at:

Tribal Air Permits Coordinator
U.S. EPA – Region 10,
1200 Sixth Avenue,
Suite 900 (AWT-150),
Seattle, WA 98101

Copies go to the Tribal Contact at:

Air Quality Program Manager
Shoshone-Bannock Tribes
Fort Hall Reservation
P.O. Box 306
Fort Hall, Idaho 83203

United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
AWT-150
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

Permit Number: R10TNSR0100
Issued: September 30, 2014
AFS Plant ID Number: 16-077-E0006

Technical Support Document

Synthetic Minor Source Permit

Permit Writer: Bryan Holtrop

Petersen Incorporated Idaho

Purpose of Owner-Requested Synthetic Minor Source Permit And Technical Support Document

Title 40 Code of Federal Regulations Section 49.158 establishes a permitting program to provide for the establishment of Federally-enforceable and enforceable as a practical matter requirements for air pollution sources located within Indian country. The owner or operator of an air pollution source who wishes to obtain a Federally- and practicably-enforceable limitation on the source's actual emissions or potential to emit must submit an application to the Regional Administrator requesting such limitation. The United States Environmental Protection Agency (EPA) then develops the permit via a public process. The permit remains in effect until it is modified, revoked or terminated by the EPA in writing.

This document, the technical support document, fulfils the requirement of 40 CFR Section 49.158(b)(4) by describing the proposed limitation and its effect on the potential to emit of the air pollution source. Unlike the Air Quality Permit, this Technical Support Document is not legally enforceable. The Permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the Permittee from the requirements of the permit.

Table of Contents

1. EPA Authority to Issue Synthetic Minor Source Permits

On July 1, 2011 the United States Environmental Protection Agency (EPA) adopted regulations (76 FR 38748) codified at 40 CFR sections 49.151 through 49.161, establishing a Federal Implementation Plan (FIP) under the Clean Air Act for Indian country. This FIP includes minor New Source Regulations (NSR) for the protection of air resources in Indian country. This permit has been developed pursuant to 40 CFR § 49.158 which creates an air permitting mechanism for major sources that wish to voluntarily limit emissions to become synthetic minor sources.

2. Project Description

2.1 Background

Some sources have the potential to emit one or more pollutants in major source amounts, but have actual emissions that are below the major source thresholds. These sources are called ‘‘synthetic minor sources’’ and the term means a source that otherwise has the potential to emit regulated NSR pollutants in amounts that are at or above the thresholds for major sources under certain applicable federal air quality programs, but has taken a restriction so that its potential to emit is less than the thresholds for major sources. Such restrictions must be enforceable as a practical matter (as defined in 40 CFR § 49.152).

Four federal air quality programs exist that apply to major sources of air pollution: Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) construction permits; Title V operating permits; and Maximum Achievable Control Technology (MACT) standards. The definition of “major source” is slightly different in each program, but is generally based on the amount of pollutants emitted by a source. A source that would otherwise be major can avoid these programs by voluntarily limiting emissions of the regulated NSR pollutants to less than the thresholds for applicability in each program. The EPA’s minor NSR program for Indian country can be used by sources to establish limits for avoiding PSD, NNSR, and Title V permitting programs, and MACT major source standards.

2.2 Request Description

On November 3, 2011, the EPA Region 10 received an application from Petersen Incorporated Idaho requesting emission limits be established for their plant on the Fort Hall Reservation, to avoid being subject to the PSD and Title V permitting programs, and MACT major source standards.

3. Plant Information

3.1 Ownership & Location

Petersen Incorporated Idaho (Petersen or Permittee) is the owner and operator of this plant. This synthetic minor source permit establishes emission limits on the operation of Petersen’s plant on the Fort Hall Reservation in Idaho.

3.2 Plant Description

Petersen is a custom fabricator of steel products. Produced products are used in a variety of applications including mining, hazardous material storage containers, nuclear waste containers and oil and gas.

As a custom fabricator there is no single process but most products follow the process outlined below.

a. Raw materialsl are received at the plant from suppliers. Raw materials include mainly carbon steel and some stainless steel in various forms such as plate, flat bar, angle and beam. Other raw materials include filler material (weld wire), solvents and paints.

b. Steel is then pre-processed by cutting, shearing, bending, grinding, or sawing.

c. Pre-processed steel is then fitted and welded together to meet customers requirements.

d. Completed products that are to be painted, are blasted with steel shot to remove mill scale and rust as well as to apply a profile to improve the adhesion of the paint.

e. The products will then be painted to customer specifications in the paint booth and shipped to the customer when dry.

f. Parts are moved throughout the plant via forklift, or overhead crane.

The synthetic minor source permit identifies and describes the emission units and emission controls at the Petersen plant to which this permit applies and are shown below.

Emission Unit ID	Description	Maximum Operation	Control Device1
PI-01	Coating Spray Booth, Sprayline Model TSDF 60-20-18 DT Custom Deluxe Side.	193,440 gallons per year	Fabric Filters and Manometer
PI-02	Dry Abrasive Blasting Booth Enclosure (55 feet x 20 feet x 20 feet)	1,750 pounds of steel shot per hour throughput	Baghouse

3.3 Local Air Quality

Petersen has requested this permit for its operations on the Fort Hall Reservation. This reservation is currently unclassifiable or attains the national ambient air quality standards for all criteria pollutants except particulate matter less than or equal to 10 micrometers in diameter

(PM10). An area is unclassifiable when there is insufficient monitoring data. Areas of the country where air pollution levels exceed the national ambient air quality standards are designated "nonattainment." The Fort Hall Reservation is currently designated as nonattainment for PM10. Note that PSD applies only in attainment and unclassifiable areas and NNSR applies in nonattainment areas. Ambient air quality designations are presented in 40 CFR Part 81.

4. Regulatory Analysis and Permit Content

4.1 Evaluation of Request

The EPA has calculated the uncontrolled emissions inventory based on maximum production levels estimated by the Permittee, and assuming these production levels would be sustained over 8,760 hour/year. These emissions are summarized as follows:

Particulate matter (PM):	101 tons/yr
Particulate matter (PM_{10}), aerodynamic diameter less than 10 microns:	55 tons/yr
Particulate matter ($PM_{2.5}$), aerodynamic diameter less than 2.5 microns:	18 tons/yr
Sulfur dioxide (SO_2):	<1 tons/yr
Greenhouse gases (GHG), CO_2-equivalent basis:	2,884 tons/yr
Carbon monoxide (CO):	6 tons/yr
Nitrogen oxides (NOx):	15 tons/yr
Volatile organic compounds (VOC):	276 tons/yr
Lead (Pb):	0 tons/yr
Hazardous air pollutants (HAP):	413 tons/yr
Largest single HAP – $Xylenes_{total}$:	258 tons/yr

Based on the EPA's calculations, the plant has the potential to emit more than PSD or Title V major source thresholds 250 tons per year (tpy) and 100 tpy respectively of volatile organic compounds (VOC). Particulate matter (PM), particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$), carbon monoxide (CO), nitrogen oxides (NOx), and sulfur dioxide (SO_2) are predicted to be below the PSD, NNSR, and Title V major thresholds of 100 and 250 tpy. Greenhouse gas (GHG) emissions are predicted to be less than the Title V threshold of 100,000 tpy on a carbon dioxide equivalent (CO2e) basis. Lead emissions are predicted to be well below the Title V and MACT applicability thresholds. HAP (total and individual) emissions are predicted to be above Title V and MACT applicability thresholds. Without enforceable emission limits, the plant's operation would be subject to Title V and any potential or operational changes at the plant would potentially be subject to PSD and MACT. The permittee also requested synthetic minor emission limitations for PM, PM_{10} and $PM_{2.5}$ to stay below the emission thresholds of 10, 5, and 3 tons per year, respectively, under the Federal minor New Source Review (NSR) Program in Indian Country at 40 CFR 49.153. See Appendix A for emission inventory details showing potential emissions based on practically enforceable conditions from the emission units limited by the permit.

To avoid being subject to Title V, PSD, MACT and Tribal minor NSR the Permittee requested potential to emit limits (called synthetic minor limits) be created in a synthetic minor source

permit. The permit will limit emissions, production and operations on a rolling 12-month basis to:

- Not more than 4.90 tpy for VOC (avoids Title V, PSD and Tribal minor NSR);
- Not more than 25 tpy for total HAPS (avoids Title V and MACT): and
- Not more than 9 tons of any individual HAP (avoids Title V and MACT).
- Not more than 9.90, 4.90, and 2.90 for PM, PM_{10}, and $PM_{2.5}$, respectively (avoids Tribal minor NSR)

4.2 Other Federal Requirements

Endangered Species Act (ESA) Impacts: The EPA is obligated to consider the impact that a federal project may have on listed species or critical habitats. Because the permit contains voluntarily requested emission limits, the EPA concludes that issuance of the permit will not affect a listed species or critical habitat. Therefore, no additional requirements will be added to the permit for ESA reasons. The EPA's "no-effect" determination concludes the EPA's obligations under Section 7 of the ESA. (See Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act, FWS and NMFS, March 1998, at Figure 1).

National Environmental Policy Act (NEPA) Review: Under Section 793(c) of the Energy Supply and Environmental Coordination Act of 1974, no action taken under the Clean Air Act shall be deemed a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. The permit in this case is an action taken under regulations implementing the Clean Air Act and is therefore exempt from the NEPA.

National Historic Preservation Act (NHPA): No part of the plant is listed in the National Register. Consequently, no adverse effects are expected and further review under the NHPA is not indicated.

Environmental Justice (EJ): The plant is located in Pocatello, Idaho within the Fort Hall Reservation. Links to maps that show environmental justice indicators for poverty and people of color are available at http://yosemite.epa.gov/R10/ocrej.nsf/environmental+justice/maps. For this permit action, the EPA is seeking input regarding possible EJ concerns and whether the Permittee's operations might cause a disproportionately high environmental or public health impact to a low income or minority population.

4.3 Permit Conditions

The permit includes the requested emission limits as well as monitoring, recordkeeping and reporting requirements necessary to assure compliance with the limits. Each section of the permit is discussed below. The permit is organized into four sections as follow:

Permit Section 1: General Conditions

This section of the permit contains conditions of a general nature that apply to the plant. Permit Condition 1.1 identifies the emission units at the source. Permit Condition 1.2 requires the Permittee to comply with all of the conditions in the permit.

The permit establishes voluntarily requested limits by the permittee and related compliance assurance provisions to restrict the source's potential to emit. It does not contain other Clean Air Act requirements to which the plant is or may be subject, such as the Federal Air Rules for Indian Reservations (FARR) at 40 CFR Part 49.121 through 49.139; New Source Performance Standards, 40 CFR Part 60; or National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 61 and 63. As specified in Permit Condition 1.3, compliance with the terms of the permit in no way relieves or exempts the Permittee from compliance with other applicable Clean Air Act requirements or of any other applicable federal, tribal, state, or local law or regulation.

Permit Section 2, Potential to Emit Emission Limits, Work Practice Requirements and Production and Operational limits

Permit Conditions 2.1 through 2.15 contains annual potential to emit emissions limits (in tons per year), work practice requirements, and production and operational limits that have been established as a result of the synthetic minor permitting action. The work practice requirements and production and operational limits are necessary to assure that the annual potential emission limits for VOC, HAPs, PM, PM_{10}, and $PM_{2.5}$ are enforceable as a practical matter on the emission units identified in Permit Condition 1.1.

Permit Section 3, Monitoring and Recordkeeping Requirements

Permit Conditions 3.1 through 3.6 require monitoring and recordkeeping necessary to calculate and assure compliance with the annual potential to emit emission limits for VOC, HAPs, PM, PM_{10}, and $PM_{2.5}$.. Emissions are to be calculated for all the emission units identified in Permit Condition 1.1. Further, under Permit Condition 3.7, the Permittee is required to maintain copies of required emissions calculations and all supporting documentation for a period of five years.

Permit Section 4, Reporting Requirements

Condition 4.1 requires the Permittee to annually submit to the EPA a record of the 365 daily rolling 365-day and twelve monthly rolling 12-month emissions calculations. For ease in coordinating submittals, this report is required to be submitted concurrently with the annual FARR registration submittal.

Condition 4.2 requires that the annual report must include details on how the emissions were calculated as well as identify the sources for various data elements. Condition 4.3 requires the report and copies of the report be sent to the EPA and the Tribal contact, respectively.

5. Permit Procedures

5.1 Public Notice and Comment

As required under 40 CFR § 49.157, the draft operating permit must be publicly noticed and made available for public comment as follows:

1. Make available for public inspection a copy of the draft operating permit prepared by the EPA, the technical support document for the draft permit, the application,

and all supporting materials including in at least one location in the area affected by the air pollution source (see 40 CFR § 49.157(a));

2. Provide copies of the notice to the owners or operators of the air pollution source, the Tribal governing body, and the Tribal environmental organizations as well as Idaho Department of Environmental Quality (see 40 CFR § 49.157(b)(1)(i));
3. Publish the public notice of the availability of the draft permit and supporting materials and of the opportunity to comment using appropriate means of notification including on the EPA Web site (see 40 CFR § 49.157(b)(1)(ii)); and
4. Provide for a 30-day period for submittal of public comments, starting upon the date of publication of the notice (see 40 CFR § 49.157(b)(2)(ix));

As required in 40 CFR § 49.157(c), the EPA must consider all public comments in preparing a final Permit decision and technical support document. The EPA must keep a record of the commenters and of the issues raised during the public participation process and such records must be available to the public.

For this permit, a notice was published in the Idaho State Journal and Sho-Ban News and a 30-day period for public comment was made available. The public comment period ended on September 29, 2014. The only comments received during this time were from the permittee. The permittee requested additional production and operational limitations, monitoring, and recordkeeping requirements to further assure compliance with the voluntarily requested synthetic minor emission limitations. These comments were accepted and the appropriate changes were made to the permit.

6. Abbreviations and Acronyms

AFS	Aerometric Information Retrieval System Facility Subset
CFR	Code of Federal Regulations
CO	Carbon monoxide
EJ	Environmental Justice
EPA	United States Environmental Protection Agency (also U.S. EPA)
ESA	Endangered Species Act
FARR	Federal Air Rules for Reservations
FR	Federal Register
HAP	Hazardous air pollutant (plural: HAPs)
HMA	Hot mix asphalt
MACT	Maximum Achievable Control Technology (Title 40 CFR Part 63)
NESHAP	National Emission Standards for Hazardous Air Pollutants (40 CFR Parts 61 and 63)
NHPA	National Historical Preservation Act
NOx	Nitrogen oxides
NNSR	Nonattainment New Source Review
NSPS	New Source Performance Standards (40 CFR Part 60)
PM	Particulate matter
PM10	Particulate matter ≤ 10 micrometers
PM2.5	Particulate matter ≤ 2.5 micrometers

PSD	Prevention of Significant Deterioration (40 CFR Part 52)
PTE	Potential to emit
RAP	Recycled asphalt pavement
SO2	Sulfur dioxide
Title V	Title V of the Clean Air Act
TPY	Tons per year
TSD	Technical Support Document
VOC	Volatile organic compound

APPENDIX A

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Summary of Annual Emissions

Point Source Emissions

Unit ID	Description	Potential to Emit (tons/year)								
		CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC	Lead	GHG[1]
PI-1	Spray Paint Booth	0.00	0.00	0.16	0.16	0.16	0.00	4.96	0.00	0.00
PI-2	Abrasive Blasting	0.00	0.00	9.43	4.54	0.45	0.00	0.00	0.00	0.00
PI-3	Welding	0.00	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00
PI-4	Cutting	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PI-5	Heaters/Furnaces (nat. gas)[2]	6.11	13.02	2.86	1.05	1.05	0.08	0.76	6.88E-05	2,503.08
PI-6	Heaters (Propane)[3]	0.22	0.39	0.01	0.02	0.02	0.04	0.00	1.34E-06	380.96
Total Point Source Emissions:		6.33	15.32	12.70	6.02	1.93	0.13	5.72	0.00	2,884.04

Notes

1 Emissions of GHG are in tons of CO_2e

2 Emission unit consists of sixteen heaters and furnaces combusting natural gas.
Emissions estimates are detailed in email attachments from Petersen dated 05/01/12

3 Emission unit consists of two propane units combusting propane.
Emissions estimates were submitted in email attachments from Petersen dated 05/01/12

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Potential to Emit Emission Inventory

Summary of Annual Emissions

Compound	Spray Coating Emissions	Abrasive Blasting Emissions	Welding Emissions	Cutting Emissions	Heaters - Natural Gas Emissions	Heaters - Propane Emissions	Total Annual (tons/yr)
Acetaldehyde	0.00	0.00	0.00	0.00	0.01	0.10	**0.11**
Acetophenone	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Acrolein	0.00	0.00	0.00	0.00	0.06	0.07	**0.14**
Benzene	0.00	0.00	0.00	0.00	0.03	0.03	**0.06**
bis(2-Ethylhexyl) phthalate (DEHP)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bromomethane (methyl bromide)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
2-Butanone (MEK)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Carbon tetrachloride	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Chlorine	0.00	0.00	0.00	0.00	0.01	0.00	**0.01**
Chlorobenzene	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Chloroform	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Chloromethane (methyl chloride)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Dibenzo furans	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Dibutylphthlate	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
1,4-Dichlorobenzene	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
1,2-Dichloroethane (ethylene dichloride)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Dichloromethane (methylene chloride)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
1,2-Dichloropropane (propylene dichloride)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
2,4-Dinitrophenol	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Ethylbenzene	2.11	0.00	0.00	0.00	0.00	0.00	**2.11**
Formaldehyde	0.00	0.00	0.00	0.00	1.15	0.31	**1.46**
Hydrogen chloride	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Methyl Isobutyl Ketone	0.84	0.00	0.00	0.00	0.00	0.00	**0.84**
Methanol	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Naphthalene	0.00	0.00	0.00	0.00	0.01	0.00	**0.01**
Pentachlorophenol	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
4-Nitrophenol	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Phenol	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Polychlorinated biphenyls	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Propionaldehyde	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Styrene	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
2,3,7,8-Tetrachlorodibenzo-p-dioxins	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Tetrachloroethene	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
1,1,1-Trichloroethane (methyl chloroform)	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Trichloroethene	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Toluene	0.02	0.00	0.00	0.00	0.05	0.01	**0.09**
2,4,6-Trichlorophenol	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Vinyl Chloride	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
o-Xylene	3.73	0.00	0.00	0.00	0.00	0.01	**3.74**
POM	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Antimony	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Cadmium	0.00	0.00	0.00	0.00	0.02	0.00	**0.02**
Chromium (Total)	0.00	0.00	0.00	0.48	0.00	0.00	**0.48**
Chromium (VI)	0.00	0.00	0.00	0.00	0.02	0.00	**0.02**
Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Lead	0.00	0.02	0.00	0.00	0.00		**0.02**
Manganese	0.00	0.00	0.02	0.10	0.01	0.00	**0.13**
Mercury	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Nickel	0.00	0.00	0.00	0.24	0.03	0.00	**0.28**
Phosphorus	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Selenium	0.00	0.01	0.00	0.00	0.00	0.00	**0.01**
Highest PTE of single HAP (tons/year), o-Xylene:	**3.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**3.74**
Total of all HAPs (tons/year):	**6.70**	**0.03**	**0.02**	**0.83**	**1.42**	**0.55**	**9.54**

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Greenhouse Gases (GHGs) Air Pollutant Potential to Emit Emission Inventory

Summary of Annual Emissions

Emissions Unit: Heaters and Furnaces

Global Warming Potential:

CO_2	1
N_2O	298
CH_4	25

Firing Rate:	Infared Heaters (natural gas)	1.320	MMBtu/hr	11 units, 120,000 Btu/hr/unit, located in Shop
	Paint Furnace (natural gas)	3.200	MMBtu/hr	1 unit, 3,200,000 Btu/hr/unit, located in Paint Booth
	Office Furnace (natural gas)	0.124	MMBtu/hr	2 units, 62,000 Btu/hr/unit, located in Tool Room
	Office Furnace (natural gas)	0.240	MMBtu/hr	2 units, 120,000 Btu/hr/unit, located in Office
	Portable Heater (propane)	0.250	MMBtu/hr	1 unit, 250,000 Btu/hr/unit, located in Blast Booth
	Portable Heater (propane)	0.375	MMBtu/hr	1 unit, 375,000 Btu/hr/unit, located in Blast Booth

Unit ID	Description	Maximum Annual Capacity		Emission Factors[1,2]			Potential to Emit (tpy)			
				CO_2	N_2O	CH_4	CO_2	N_2O	CH_4	CO_2e
PI-5	Heaters and Furnaces (Natural Gas)	41,618,521	scf	53.02	1.00E-04	1.00E-03	2,500	4.72E-03	0.05	2,503
PI-6	Heaters (Propane)	60,165	gallons	62.87	6.00E-04	3.00E-03	379	3.62E-03	1.81E-02	381
The following emission units have no known emissions of GHG:										
PI-1	Spray Paint Booth									
PI-2	Abrasive Blasting									
PI-3	Welding									
PI-4	Cutting									

Limited PTE from combustion sources: 2,884

Physical Data and Conversions Used

453.59	g/lb	
2,000	lbs/ton	
0.091	MMBtu/gallon	Heat content of propane (Part 98, Subpart C, Table C1)
1.03E-03	MMBtu/scf	Heat content of natural gas fuel (Part 98, Subpart C, Table C1)

Footnotes/Assumptions

1 Emission factors are in units of kg/MMBtu

2 Emission factors are from 40 CFR Part 98 Subpart C, Tables C-1 and C-2

Default CO2 emission factor (kg CO2/mmBtu) for propane	62.87	40 CFR Part 98, Table C-1
Default CO2 emission factor (kg CO2/mmBtu) for natural gas	53.02	40 CFR Part 98, Table C-1
Default N_2O emission factor (kg N_2O/mmBtu) for propane	6.00E-04	40 CFR Part 98, Table C-2
Default N_2O emission factor (kg N_2O/mmBtu) for natural gas	1.00E-04	40 CFR Part 98, Table C-2
Default CH_4emission factor (kg CH_4/mmBtu) for propane	3.00E-03	40 CFR Part 98, Table C-2
Default CH_4emission factor (kg CH_4/mmBtu) for natural gas	1.00E-03	40 CFR Part 98, Table C-2

Calculation of Natural Gas Usage based on Drum Dryer Production Limit of 500,000 tons per year

PTE Natural Gas Fuel Usage of Drum Dryer

=(129 MMBtu per hour / 0.00103 MMBtu per scf) x 8760 hour 1,097,126,214 scf of natural gas per year

Limited PTE Natural Gas Fuel Usage based on 500,000 tons of HMA per year

=(500,000 tons of HMA per year / 3,504,000 tons of HMA per year) x 1,097,126,214 scf of natural gas per year

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Emissions Unit: PI-1 Spray Paint Booth
Make/Model[1]: Sprayline Model TSDF 60-20-18 DT Custom Deluxe Side
Activity: Coating Application
Type of Coating Sprayer[2]: Airless
Control Equipment[4]: Fabric Filters and Manometer
Maximum Hourly Paint Use[3]: 31 gal/hr
Maximum Yearly Paint Use: 2,500 gal/year

Pollutant	Emission Factors[5]	Emission Factor Units	Maximum Operation (gallons/year)	PTE tons per year
CO	0.00	lb/gal	2,500	0.00
NO_x	0.00	lb/gal	2,500	0.00
PM	0.13	lb/gal	2,500	0.16
PM_{10}	0.13	lb/gal	2,500	0.16
$PM_{2.5}$	0.13	lb/gal	2,500	0.16
SO_2	0.00	lb/gal	2,500	0.00
VOC	2.11	lb/gal	2,500	2.64
Lead	0.00	lb/gal	2,500	0.00

Emissions Factor References

CO No known emissions of this pollutant from this source category.
NO_x No known emissions of this pollutant from this source category.
PM EF Calculation: Coating Density (12.19 lbs/gal) x Solids Weight (58%) x (1-Control Efficiency) x (1-Transfer Efficiency)
PM_{10} Assumed to be same as for PM
$PM_{2.5}$ Assumed to be same as for PM
SO_2 No known emissions of this pollutant from this source category.
VOC EF Calculation: Average Coating VOC weight provided by applicant (2.11lbs VOC/gal and 1.65 lbs VOC/gal)
Lead No known emissions of this pollutant from this source category.

Activity Thinners and Cleaner Application
Control Equipment[9]: None

Pollutant	Emission Factors[5]	Emission Factor Units	Maximum Operation[5,10,14] Annual (gallons)	PTE Annual, tpy
CO		lb/gal	640.00	
NO_x		lb/gal	640.00	
PM	0	lb/gal	640.00	0
$PM_{2.5}$	0	lb/gal	640.00	0
PM_{10}	0	lb/gal	640.00	0
SO_2		lb/gal	640.00	
VOC	7.26	lb/gal	640.00	2.32
Lead		lb/gal	640.00	

Emissions Factor References

CO No known emissions of this pollutant from this source category.
NO_x No known emissions of this pollutant from this source category.
PM Thinner/Cleaner solids weight % content was reported as 0%[12]
$PM_{2.5}$ Assumed to be same as for PM
PM_{10} Assumed to be same as for PM
SO_2 No known emissions of this pollutant from this source category.
VOC EF Calculation: VOC weight (7.26 lbs/gal) x 1.5
Lead No known emissions of this pollutant from this source category.

Conversions Used

2000 lbs/ton
453.59 g/lb

Footnotes/Assumptions

1 Spray booth make/model and dimensions were submitted in application by Petersen on 11/03/11 with the following booth specifications: Inside dimensions 20w x 18h x 59.8d feet, outside dimensions 25w x 20.8h x 60l feet
2 Airless Sprayer Minimum Transfer Efficiency (TE) for Surface Coating/Thinners, Air Pollution Engineering Manual, W. Davis 0.10
3 Maximum hourly spray rating submitted in application by Petersen on 11/03/11
4 Control arrestance efficiency (CE) of spray booth fabric filters was submitted in application by Petersen on 11/03/11: 0.98
5 Outer bounds were not increased to calculate PTE: 1
6 Highest coating weight used to calculate emission factors was submitted in application by Petersen on 11/03/11: 12.19 lbs/gal[5]
7 Highest coating solids weight % content was submitted in application by Petersen Inc on 11/03/12: 58.00% by weight[5]
8 Highest coating VOC weight was submitted in application by Petersen Inc on 11/03/12: 2.11 lbs/gal[5]

9 No add-on pollution control equipment for Coating Thinners/Cleaners was provided by Petersen Inc:	0	
10 A 10:1 ratio of Coating to Thinner was defined by Petersen Inc by email on 05/17/12:	0.1	
11 Highest Thinner/Cleaner weight used to calculate emission factors was submitted in application by Petersen on 11/03/11:	7.26	lbs/gal[5]
12 Highest Thinner/Cleaner solids weight % content was submitted in application by Petersen Inc on 11/03/12:	0.00%	by weight[5]
13 Maximum Thinner/Cleaner VOC weight submitted in application by Petersen Inc on 11/03/12:	7.26	lbs/gal[5]
14 Cleaner amount specified by Petersen Inc by email on 05/17/12:	7.5	gal/week[5]

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Emissions Unit[1]: PI-2 Abrasive Blasting
Abrasive Type[2]: Steel Shot 1 blasting gun used in the booth at a time
Maximum Nozzle Diameter[3]: 3/4"
Maximum Nozzle Pressure[4]: 150 PSI
Maximum Hourly Rating[4]: 7,250 lbs/hour
Control Equipment[5]: Blast booth enclosure and Baghouse

Pollutant	Emission Factors	Emission Factor Units	Maximum Annual Operation		Potential to Emit Tons per Year	Control Efficiency[5]	Potential to Emit[5] Tons per Year
CO	0.00	lb/ton	31755	tons	0.00	NA	0.00
NO_x	0.00	lb/ton	31755	tons	0.00	NA	0.00
PM	5.40	lb/ton	31755	tons	85.74	0.89	9.43
PM_{10}	2.60	lb/ton	31755	tons	41.28	0.89	4.54
$PM_{2.5}$	0.26	lb/ton	31755	tons	4.13	0.89	0.45
SO_2	0.00	lb/ton	31755	tons	0.00	NA	0.00
VOC	0.00	lb/ton	31755	tons	0.00	NA	0.00
Lead	0.00	lb/ton	31755	tons	0.00	NA	0.00

Emissions Factor References

CO	AP-42	Section 13.2.6 does not list any non-particulate EF:	0 lb/ton
NO_x	AP-42	Section 13.2.6 does not list any non-particulate EF:	0 lb/ton
***PM**	AP-42	Table 13.2.6-1, 9/97, p.13.2.6-2, Total PM uncontrolled x 10% (see footnote below)	2.7 lb/1000 lb
***PM_{10}**	AP-42	Table 13.2.6-1, 9/97, p.13.2.6-2, PM-10 uncontrolled x 10% (see footnote below)	1.3 lb/1000 lb
***$PM_{2.5}$**	AP-42	Table 13.2.6-1, 9/97, p.13.2.6-2, PM-2.5 uncontrolled x 10% (see footnote below)	0.13 lb/1000 lb
SO_2	AP-42	Section 13.2.6 does not list any non-particulate EF:	0 lb/ton
VOC	AP-42	Section 13.2.6 does not list any non-particulate EF:	0 lb/ton
Lead	AP-42	Section 13.2.6 does not list any non-particulate EF:	0 lb/ton

Footnote: The study also indicates that total PM emissions from abrasive blasting using shot are about 10 percent of total PM emissions from abrasive blasting with sand. The emission factor was multiplied by a factor of 2 (2 x 2.7) to create a margin of safety to account for uncertainty in the emission estimates for PM, PM10, and PM2.5.

Conversions Used

2000 lbs/ton

Footnotes/Assumptions

1 Abrasive blasting booth was constructed of steel material with dimensions 55l x 20w x 20h feet as submitted by Petersen by email attachment on 05/10/12
2 Abrasive blasting grit type was submitted in application by Petersen on 11/03/11
3 Largest nozzle size rating based on telephone call with Schmidt Blasting Equipment dated 05/10/12
4 Abrasive blasting Consumption rate was provided by AXXiom Manufacturing (A manufacturer of Schmidt Blasting) as an email attachment dated 05/10/12
5 Control Equipment particle recovery percentage as defined by baghouse specification data sheet submitted as email attachment by Petersen on 05/08/12:
5 Overall control efficiency is based on system capture efficiency and control efficiency for each pollutant:

Capture efficiency (inside enclosed cabinet)	1
PM control efficiency (see Page A-3):	0.89
PM_{10} control efficiency (see Page A-3):	0.89
$PM_{2.5}$ control eficiency (seePage A-3):	0.89

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Emissions Unit: PI-3 Welding
Welding Process: Gas Metal Arc Welding (GMAW)
Welding consumable: Solid Wire, gas shielded
Base Metal: Mild Steel
Electrode type: ER70S-6 and ER308L
Welding Rate[1,2]: 110 lbs/hr 482 tons/year
Control Equipment: None

Pollutant	Welding Consumable Emission Factor	Emission Factor Units	Maximum Operation[2]	Potential to Emit[2]		
			Annual (pounds)	Hourly, lb/hr	Daily, lb/day	Annual, tpy
$PM_{2.5}$	0.80%	EF%	10000	NA	NA	0.04

Welding Process: Flux Cored Arc Wired (FCAW)
Welding consumable: Flux Cored Wire, gas shielded
Base Metal: Stainless Steel
Electrode type: E71T-1, E308LT-1
Welding Rate[1,3]: 176 lbs/hr 771 tons/year

Pollutant	Welding Consumable Emission Factor	Emission Factor Units	Maximum Operation[3]	Potential to Emit[3]		
			Annual (pounds)	Hourly, lb/hr	Daily, lb/day	Annual, tpy
$PM_{2.5}$	1.30%	EF%	10000	NA	NA	0.07

Welding Process[3]: Gas Tungsten Arc Welding (GTAW)
Welding consumable: Solid Wire (Manual), gas shielded
Base Metal: Stainless Steel
Electrode type: ER70S-6, ER70S-2, ER308L
Welding Rate[1,4]: 1.5 lbs/hr 7 tons/year

Pollutant	Welding Consumable Emission Factor	Emission Factor Units	Maximum Operation[4]	Potential to Emit[4]		
			Annual (pounds)	Hourly, lb/hr	Daily, lb/day	Annual, tpy
$PM_{2.5}$	2.80%	EF%	10000	NA	NA	0.14

Welding Process[4]: Submerged Arc Welding (SAW)
Welding consumable: Solid Wire, non-gas shielded
Base Metal: Stainless Steel
Electrode type: EM12K, ER308L
Welding Rate[1,5]: 12.5 lbs/hr 55 tons/year

Pollutant	Welding Consumable Emission Factor	Emission Factor Units	Maximum Operation[5]	Potential to Emit[5]		
			Annual (pounds)	Hourly, lb/hr	Daily, lb/day	Annual, tpy
$PM_{2.5}$	0.00%	EF%	10000	NA	NA	0.00

Emissions Factor References

CO	No known emissions of this pollutant from this source category.
NO_x	No known emissions of this pollutant from this source category.
PM	Assumed to be same as for $PM_{2.5}$
$PM_{2.5}$	Guide for Estimating Welding Emissions for EPA and Ventilation Permit Reporting, American Welding Society (2003); Table 1
PM_{10}	Assumed to be same as for $PM_{2.5}$
SO_2	No known emissions of this pollutant from this source category.
VOC	No known emissions of this pollutant from this source category.
Lead	No known emissions of this pollutant from this source category.

Conversions Used

2000	lbs/ton
453.59	g/lb

Footnotes/Assumptions

1 Maximum welding rating was submitted as email attachment by Petersen on 05/01/12	
2 Number of Metal Inert Gas (MIG) welding units submitted as email attachment by Petersen on 05/01/12:	22
3 Number of Metal Inert Gas (MIG) welding units submitted as email attachment by Petersen on 05/01/12:	22
4 Number of Tungsten Inert Gas (TIG) welding units submitted as email attachment by Petersen on 05/01/12:	3
5 Number of Submerged Arc Welding (SAW) welding units submitted as email attachment by Petersen on 05/01/12:	1
6 No PM2.5 EF available for solid wire consumerable, non-gas shielded:	0

Total Facility Welding Throughput =	1,314	tons/year

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Emissions Unit: PI-4 Cutting
Welding Process[1]: Plasma Arc Welding (PAW)
Cutting Technique[2]: Semidry
Control Equipment: None

Pollutant	Plasma Welding Emission Factor[3]	Emission Factor Units[3]	Maximum Hours of Operation		Potential to Emit[3]		
			Daily	Annual	Hourly, lb/hr	Daily, lb/day	Annual, tpy
Nitrogen	3.30	grams/min	24	8760	0.4365176	10.476421	1.912

Emissions Factor References

CO No known emissions of this pollutant from this source category.
NO_x Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel, Bromssen (1994)
PM No known emissions of this pollutant from this source category.
$PM_{2.5}$ No known emissions of this pollutant from this source category.
PM_{10} No known emissions of this pollutant from this source category.
SO_2 No known emissions of this pollutant from this source category.
VOC No known emissions of this pollutant from this source category.
Lead No known emissions of this pollutant from this source category.

Conversions Used

2000 lbs/ton
453.59 g/lb

Footnotes/Assumptions

1 PAW uses a plasma head welding instrument to cut stainless steel base metal with a 8mm minimum thickness
2 Water is used as a buffer about 50mm under the plate
3 Number of cutting units submitted as email attachment by Petersen on 05/01/12: 1

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Emissions Unit: PI-5 11 Furnace/Heaters Combusting Natural Gas
Fuel[1]: Natural Gas
Control Equipment: None

Combustion Activity: 11 Shop Infrared Heaters
Maximum Hourly Rating[2,3]: 120,000 Btu/hr/heater
Maximum Hourly Fuel Use: 1294 scf/year for all 11 heaters
Maximum Annual Fuel Use: 11.34 10^6scf/year for all 11 heaters

Pollutant	Emission Factors[7]	Emission Factor Units[7]	PTE[3] Annual, tpy
CO	40.00	lb/10^6scf	2.27E-01
NO_x	94.00	lb/10^6scf	5.33E-01
PM	1.90	lb/10^6scf	1.08E-02
PM_{10}	7.60	lb/10^6scf	4.31E-02
$PM_{2.5}$	7.60	lb/10^6scf	4.31E-02
SO_2	0.60	lb/10^6scf	3.40E-03
VOC	5.50	lb/10^6scf	3.12E-02
Lead	5.00E-04	lb/10^6scf	2.83E-06

Combustion Activity: 1 Paint Booth Furnace
Maximum Hourly Rating[2,4]: 3,200,000 Btu/hr/furnace
Maximum Hourly Fuel Use: 3,137 scf/hr
Maximum Annual Fuel Use: 27 10^bscf/year

Pollutant	Emission Factors[7]	Emission Factor Units[7]	PTE[5] tpy
CO	84.00	lb/10^6scf	1.15
NO_x	100.00	lb/10^6scf	1.37
PM (FARR limit)[8]	190.83	lb/10^6scf	2.62
PM_{10}	7.60	lb/10^6scf	0.10
$PM_{2.5}$	7.60	lb/10^6scf	0.10
SO_2	0.60	lb/10^6scf	0.01
VOC	5.50	lb/10^6scf	0.08
Lead	5.00E-04	lb/10^6scf	6.87E-06

Combustion Activity: 2 Tool Room Furnaces
Maximum Hourly Rating[2,5]: 62,000 Btu/hr/furnace
Maximum Hourly Fuel Use: 122 scf/hr
Maximum Annual Fuel Use: 1.06 10^6 scf/year

Pollutant	Emission Factors[7]	Emission Factor Units[7]	PTE[5] tpy
CO	40.00	lb/10^6scf	2.13E-02
NO_x	94.00	lb/10^6scf	5.01E-02
PM	1.90	lb/10^6scf	1.01E-03
PM_{10}	7.60	lb/10^6scf	4.05E-03
$PM_{2.5}$	7.60	lb/10^6scf	4.05E-03
SO_2	0.60	lb/10^6scf	3.19E-04
VOC	5.50	lb/10^6scf	2.93E-03
Lead	5.00E-04	lb/10^6scf	2.66E-07

Combustion Activity: 2 Portable Office Furnace

Maximum Hourly Rating[2,6]: 120,000 Btu/hr/furnace

Maximum Hourly Fuel Use: 235 scf/hr

Maximum Annual Fuel Use: 2.06 10^b scf/year

Pollutant	Emission Factors[7]	Emission Factor Units[7]	PTE[5] Annual, tpy
CO	40.00	lb/10^6scf	4.71E+00
NO_x	94.00	lb/10^6scf	1.11E+01
PM	1.90	lb/10^6scf	2.24E-01
PM_{10}	7.60	lb/10^6scf	8.94E-01
$PM_{2.5}$	7.60	lb/10^6scf	8.94E-01
SO_2	0.60	lb/10^6scf	7.06E-02
VOC	5.50	lb/10^6scf	6.47E-01
Lead	5.00E-04	lb/10^6scf	5.88E-05

Emission Factor References

CO AP-42 July 1998, Table 1.4-1, Residential furnaces (<0.3 MMBtu/hr), and Small boilers (<100 MMBtu/hr), based on Size

NO_x AP-42 July 1998, Table 1.4-1, Residential furnaces (<0.3 MMBtu/hr), and Small boilers (<100 MMBtu/hr), based on Size

PM AP-42 July 1998, Table 1.4-2, filterable

PM_{10} AP-42 July 1998, Table 1.4-2, assumed to be total PM, filterable and condensable

$PM_{2.5}$ AP-42 July 1998, Table 1.4-2, assumed to be total PM, filterable and condensable

SO_2 AP-42 July 1998, Table 1.4-2, Based on sulfur content conversion[7]

VOC AP-42 July 1998, Table 1.4-2

Lead AP-42 July 1998, Table 1.4-2

Conversions Used AP-42 July 1998; Average natural gas higher heating value

1020 Btu/scf [7]

2000 lbs/ton

453.59 g/lb

Footnotes/Assumptions

1 Fuel measurements were made using main natural gas meter

2 Maximum rating of combustion units was submitted as email attachment by Petersen on 05/01/12

3 Number of indoor infrared heaters submitted by Petersen Inc dated 05/01/12 that vent to the indoor airspace: 11

4 Number of paint booth paint furnaces submitted by Petersen Inc dated 05/01/12 that vent outside of the building: 1

5 Number of tool room tool furnaces submitted by Petersen Inc dated 05/01/12 that vent outside of the building: 2

6 Number of office room office furnaces submitted by Petersen Inc dated 05/01/12 that vent outside of the building: 2

7 Emission factors converted from lb/MMScf to lb/MMBtu based on heat content of natural gas fuel

8 PM factor:

Option for natural gas: EF based on PM emission limits in FARR (40 CFR 49.125) =

0.1 grains/dscf at 7% O2 (greater than 400,000 Btu/hr units)

EF = (FARR PM emission limit) / (7000 gr/lb) * (Stack flow conversion Factor) * ((20.9 - %O2 Method19)/(20.9-%O2 FARR Limit Std. (7%)))

= lb/MMBtu from 40 CFR App, Method 19, Eq. 19-1

Stack flow conversion factor =	0.1	gr/dscf
O2 assumed in Eq. 19-1	8710	dscf/mmBtu from 40 CFR 60 App A, Table 19-2 at 0% O2
FARR limit O2	0	percent
FARR-based EF =	7	percent
FARR-based EF =	0.19	lb/MMBtu
FARR-based EF =	190.83	lb/10^6 scf
AP-42 7/98, Table 1.4-2, filterable; EF =	1.90	lb/10^6 scf

For natural gas: PM factor will be based on FARR limit, even though actual emissions based on AP-42 are predicted to be much less

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Criteria Air Pollutant Potential to Emit Emission Inventory

Emissions Unit: PI-6 Combustion - Propane
Fuel[1]: Propane
Control Equipment: None

Combustion Activity[2]: Portable Heater (250k)
Maximum Hourly Rating[3]: 250,000 Btu/hr
Maximum Hourly Fuel Use: 3 gal/hr
Maximum Annual Fuel Use: 23.93 10^3gal/year

Pollutant	Emission Factors[6]	Emission Factor Units[6]	10^3 gallons/year	PTE[3] (tons/year)
CO	7.50	lb/10^3 gallons	23.93	8.98E-02
NO_x	13.00	lb/10^3 gallons	23.93	1.56E-01
PM	0.20	lb/10^3 gallons	23.93	2.39E-03
PM_{10}	0.70	lb/10^3 gallons	23.93	8.38E-03
$PM_{2.5}$	0.70	lb/10^3 gallons	23.93	8.38E-03
SO_2	1.50	lb/10^3 gallons	23.93	1.80E-02
VOC	1.00	lb/10^3 gallons	23.93	1.20E-02
Lead	4.49E-05	lb/10^3 gallons	23.93	5.37E-07

Combustion Activity[2]: Portable Heater (375k)
Maximum Hourly Rating[4]: 375,000 Btu/hr
Maximum Hourly Fuel Use: 4 gal/hr
Maximum Annual Fuel Use: 35.90 10^3gal/year

Pollutant	Emission Factors[6]	Emission Factor Units[6]	Maximum Operation[4] (MMBtu/year)	PTE[4] Annual, tpy
CO	7.50	lb/10^3 gallons	35.90	1.35E-01
NO_x	13.00	lb/10^3 gallons	35.90	2.33E-01
PM	0.20	lb/10^3 gallons	35.90	3.59E-03
$PM_{2.5}$	0.70	lb/10^3 gallons	35.90	1.26E-02
PM_{10}	0.70	lb/10^3 gallons	35.90	1.26E-02
SO_2	1.50	lb/10^3 gallons	35.90	2.69E-02
VOC	1.00	lb/10^3 gallons	35.90	1.80E-02
Lead	4.49E-05	lb/10^3 gallons	35.90	8.06E-07

Emission Factor References

CO AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)
NO_x AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)
PM AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)
PM_{10} AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)
$PM_{2.5}$ AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)
SO_2 AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)[5,6]
Sulfur content of propane = 15 grains/100 ft^3
VOC AP-42 July 2008, Table 1.5-1,commercial boilers (lb/10^3gal)[5,6]
Lead AP-42, Table 1.4.-2 for natural gas fuel 0.0005 lb/10^6 scf = 4.90E-07 lb/MMBtu = 4.49E-05 lb/10^3gal of propane

Conversions Used

91500	Btu/gal (footnote 6)	AP-42 July 2008,Table 1.5-1; Average LPG heat content:
4.2	lbs propane/gallon	Liquid Gas Conversion Chart, Oregon.gov
2000	lbs/ton	
453.59	g/lb	
1020	MMBtu/MMscf	AP-42 July 2008,Table 1.4-2; Average LPG heat content:

Footnotes/Assumptions

1 Fuel measurements were taken from purchasing records
2 Purpose of portable heaters is for blast booth heat. Exhausts to blast booth airspace
3 Number of 250k portable heaters included in Maximum Operation and PTE calculations: 1
4 Number of 350k portable heaters included in Maximum Operation and PTE calculations: 1
5 Sulfur concentration was submitted by Petersen Inc as email attachment dated 05/01/12 as: 150 ppmv
6 Emission factors converted from lb/10^3gal to lb/MMBtu based on heat content of fuel

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Emission Inventory

Emission Unit: **PI-1 Spray Booth**

Production Information

Potential Hours of Operation	8,760	hours/yr
Maximum Hourly Coating/Thinner/Cleaner Use:	31	gal/hr
Maximum Annual Coating/Thinner/Cleaner Use[1]:	3,140	gal/yr

Note: Blank cells indicate no available or found emission factor

Compound	Emission Factor [2] (lb/gallon)	Total Annual (lb/yr)	Total Annual (tons/yr)
Acetaldehyde			
Acetophenone			
Acrolein			
Benzene			
bis(2-Ethylhexyl) phthalate (DEHP)			
Bromomethane (methyl bromide)			
2-Butanone (MEK)			
Carbon tetrachloride			
Chlorine			
Chlorobenzene			
Chloroform			
Chloromethane (methyl chloride)			
Dibenzo furans			
Heptachlorodibenzo-p-furans			
Hexachlorodibenzo-p-furans			
Octachlorodibenzo-p-furans			
Pentachlorodibenzo-p-furans			
2,3,7,8-Tetrachlorodibenzo-p-furans			
Tetrachlorodibenzo-p-furans			
1,2-Dichloroethane (ethylene dichloride)			
Dichloromethane (methylene chloride)			
1,2-Dichloropropane (propylene dichloride)			
2,4-Dinitrophenol			
Ethylbenzene	EF[2]	4,215.52	**2.11**
Formaldehyde			
Hydrogen chloride			
Methyl Isobutyl Ketone	EF[2]	1,682.50	**0.84**
Naphthalene			
Pentachlorophenol			
4-Nitrophenol			
Phenol			
Polychlorinated biphenyls			
Decachlorobiphenyl			
Dichlorobiphenyl			
Heptachlorobiphenyl			
Hexachlorobiphenyl			
Pentachlorobiphenyl			
Trichlorobiphenyl			
Tetrachlorobiphenyl			
Propionaldehyde			
Styrene			
2,3,7,8-Tetrachlorodibenzo-p-dioxins			
Tetrachloroethene			
1,1,1-Trichloroethane (methyl chloroform)			
Trichloroethene			
Toluene	EF[2]	46.46	**0.02**
2,4,6-Trichlorophenol			
Vinyl Chloride			
o-Xylene	EF[2]	7,450.92	**3.73**

Emission Unit: PI-1 Spray Booth (cont.)

Compound	Emission Factor [2] (lb/gallon)	Total Annual (lb/yr)	Total Annual (tons/yr)
POM			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Chrysene			
Benzo(k)fluoranthene			
Dibenzo(a,h)anthracene			
Indeno(1,2,3,c,d)pyrene			
Acenaphthene			
Fluorene			
Anthracene			
Phenanthrene			
Fluoranthene			
Pyrene			
Perylene			
Benzo(g,h,i)perylene			
Acenaphthylene			
Benzo(e)pyrene			
2-Methylnaphthalene			
Benzo(j,k)fluoranthene			
Benzo(b,k)fluoranthene			
2-Chloronaphthalene			
Antimony			
Arsenic			
Beryllium			
Cadmium			
Chromium (Total)			
Chromium (VI)			
Cobalt			
Lead			
Manganese			
Mercury			
Nickel			
Selenium			
Total of all HAPs (tons/year):			**6.70**

[1]Aggregate annual paint use is summarized below

[2]HAP emission factors were take from the highest weight content based off the MSDS forms submitted in the application by Petersen Inc dated 11/03/12 and by email attachment dated 05/17/12

Activity Coating Application

Pollutant	% HAP by Weight	Coating Weight (lbs/gallons)	Maximum Operation	PTE[6,7]
			Annual (gallons/year)[3]	Annual, tpy
Methyl Isobutyl Ketone	10.00%	13.46	1,250.00	0.84
Ethylbenzene	3.00%	13.46	2,500.00	0.51
Xylene	18.00%	13.46	2,500.00	3.03

[3]Maximum annual coating rate taken from PI-1 Spray Coating Booth table

Activity Thinners and Cleaner Application

Pollutant	% HAP by Weight	Coating Weight (lbs/gallons)	Maximum Operation	Potential to Emit[6,7]
			Annual (gallons)[5]	Hourly, lb/hr
Ethylbenzene	69.00%	7.26	640.00	NA
Toluene	1.00%	7.26	640.00	NA
Xylene	30.00%	7.26	640.00	NA

[4]HAP weight contents were not increased to calculate maximum PTE

[5]Maximum annual thinner and cleaner rate taken from PI-1 Spray Coating Booth table

[6]Conversion factor for grams to pounds: 453.59 g/lb

[7]Conversion factor for pounds to tons: 2000 lbs/ton

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Emission Inventory

Emission Unit: **PI-2 Abrasive Blasting**

Production Information

Potential Hours of Operation:	8,760	hours/yr
Maximum Steel Shot Blasting Rate[1]:	7,250.0	lbs/hr
Maximum Steel Shot per year:	63,510,000	lbs/yr
Maximum Steel Shot with recovery controls[2]:	635,100	lbs/yr

Note: Blank cells indicate no available or found emission factor

Compound	Emission Factor[3] (mg/kg)	Total Annual (lb/yr)	Total Annual (tons/yr)[4]
Acetaldehyde			
Acetophenone			
Acrolein			
Benzene			
bis(2-Ethylhexyl) phthalate (DEHP)			
Bromomethane (methyl bromide)			
2-Butanone (MEK)			
Carbon tetrachloride			
Chlorine			
Chlorobenzene			
Chloroform			
Chloromethane (methyl chloride)			
Dibenzo furans			
Heptachlorodibenzo-p-furans			
Hexachlorodibenzo-p-furans			
Octachlorodibenzo-p-furans			
Pentachlorodibenzo-p-furans			
2,3,7,8-Tetrachlorodibenzo-p-furans			
Tetrachlorodibenzo-p-furans			
1,2-Dichloroethane (ethylene dichloride)			
Dichloromethane (methylene chloride)			
1,2-Dichloropropane (propylene dichloride)			
2,4-Dinitrophenol			
Ethylbenzene			
Formaldehyde			
Hydrogen chloride			
Naphthalene			
Pentachlorophenol			
4-Nitrophenol			
Phenol			
Polychlorinated biphenyls			
Decachlorobiphenyl			
Dichlorobiphenyl			
Heptachlorobiphenyl			
Hexachlorobiphenyl			
Pentachlorobiphenyl			
Trichlorobiphenyl			
Tetrachlorobiphenyl			
Propionaldehyde			
Styrene			
2,3,7,8-Tetrachlorodibenzo-p-dioxins			
Tetrachloroethene			
1,1,1-Trichloroethane (methyl chloroform)			
Trichloroethene			
Toluene			
2,4,6-Trichlorophenol			
Vinyl Chloride			
o-Xylene			

Emission Unit: PI-2 Abrasive Blasting (cont.)

Compound	Emission Factor[3] (mg/kg)	Total Annual (lb/yr)	Total Annual (tons/yr)[4]
POM			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Chrysene			
Benzo(k)fluoranthene			
Dibenzo(a,h)anthracene			
Indeno(1,2,3,c,d)pyrene			
Acenaphthene			
Fluorene			
Anthracene			
Phenanthrene			
Fluoranthene			
Pyrene			
Perylene			
Benzo(g,h,i)perylene			
Acenaphthylene			
Benzo(e)pyrene			
2-Methylnaphthalene			
Benzo(j,k)fluoranthene			
Benzo(b,k)fluoranthene			
2-Chloronaphthalene			
Antimony			
Arsenic	4.00E-01	2.54E-01	**1.27E-04**
Beryllium	3.00E-02	1.91E-02	**9.53E-06**
Cadmium	2.13E+00	1.35E+00	**6.76E-04**
Chromium (Total)	2.70E-02	1.71E-02	**8.57E-06**
Chromium (VI)			
Cobalt			
Lead	4.97E+01	3.16E+01	**1.58E-02**
Manganese	7.60E+00	4.83E+00	**2.41E-03**
Mercury	6.00E-03	3.81E-03	**1.91E-06**
Nickel	5.52E+00	3.51E+00	**1.75E-03**
Selenium	2.00E+01	1.27E+01	**6.35E-03**
Total of all HAPs (tons/year):			**2.71E-02**

[1]Abrasive Blasting Hourly Rate taken from the PI-2 Abrasive Blasting Emission Unit table

[2]Control Equipment particle recovery percentage as defined by baghouse specification data sheet submitted as email attachment by Petersen on 05/08/12: 0.9900

[3]California Air Toxics Abrasive Blasting Emission Factors (maximum):
http://www.arb.ca.gov/ei/catef/catef.htm

[4]Conversion factor for pounds to tons: 2000 lbs/ton

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Emission Inventory

Emission Unit: **PI-3 Welding**

Production Information

Potential Hours of Operation	8,760	hours/yr
Summary of Maximum Hourly Welding Use:	Not avialable	lbs/hr
Summary of Maximum Annual Welding Use[1]:	40,000	lbs/yr

Note: Blank cells indicate no available or found emission factor

Compound	Elemental Fume Chemistry EF [2]	Total Annual (lbs/yr)	Total Annual (tons/yr)
Acetaldehyde			
Acetophenone			
Acrolein			
Benzene			
bis(2-Ethylhexyl) phthalate (DEHP)			
Bromomethane (methyl bromide)			
2-Butanone (MEK)			
Carbon tetrachloride			
Chlorine			
Chlorobenzene			
Chloroform			
Chloromethane (methyl chloride)			
Dibenzo furans			
Heptachlorodibenzo-p-furans			
Hexachlorodibenzo-p-furans			
Octachlorodibenzo-p-furans			
Pentachlorodibenzo-p-furans			
2,3,7,8-Tetrachlorodibenzo-p-furans			
Tetrachlorodibenzo-p-furans			
1,2-Dichloroethane (ethylene dichloride)			
Dichloromethane (methylene chloride)			
1,2-Dichloropropane (propylene dichloride)			
2,4-Dinitrophenol			
Ethylbenzene			
Formaldehyde			
Hydrogen chloride			
Naphthalene			
Pentachlorophenol			
4-Nitrophenol			
Phenol			
Polychlorinated biphenyls			
Decachlorobiphenyl			
Dichlorobiphenyl			
Heptachlorobiphenyl			
Hexachlorobiphenyl			
Pentachlorobiphenyl			
Trichlorobiphenyl			
Tetrachlorobiphenyl			
Propionaldehyde			
Styrene			
2,3,7,8-Tetrachlorodibenzo-p-dioxins			
Tetrachloroethene			
1,1,1-Trichloroethane (methyl chloroform)			
Trichloroethene			
Toluene			
2,4,6-Trichlorophenol			
Vinyl Chloride			
o-Xylene			

Emission Unit: PI-3 Welding (cont.)

Compound	Elemental Fume Chemistry EF [2]	Total Annual (lbs/yr)	Total Annual (tons/yr)
POM			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Chrysene			
Benzo(k)fluoranthene			
Dibenzo(a,h)anthracene			
Indeno(1,2,3,c,d)pyrene			
Acenaphthene			
Fluorene			
Anthracene			
Phenanthrene			
Fluoranthene			
Pyrene			
Perylene			
Benzo(g,h,i)perylene			
Acenaphthylene			
Benzo(e)pyrene			
2-Methylnaphthalene			
Benzo(j,k)fluoranthene			
Benzo(b,k)fluoranthene			
2-Chloronaphthalene			
Antimony			
Arsenic			
Beryllium			
Cadmium			
Chromium (Total)[3]	EF	9.38	**4.69E-03**
Chromium (VI)			
Cobalt			
Lead			
Manganese[3]	EF	30.89	**1.54E-02**
Mercury			
Nickel[3]	EF	3.83	**1.91E-03**
Selenium			
Sub-Total of all HAPs (tons/year):			**2.20E-02**

[1]Summary of maximum welding rate for each respective welding process and electrode were submitted as email attachment by Petersen on 05/01/12

[2] Guide for Estimating Welding Emissions for EPA and Ventilation Permit Reporting, American Welding Society (2003); Annex A

[3] For emission factor calculations see tables below

Welding Process: Gas Metal Arc Welding (GMAW)
Welding consumable: Solid Wire, gas shielded
Base Metal: Mild Steel
Electrode type: ER70S-6
Equipment Welding Rate[1,4,9]: 55 lbs/hr

Pollutant	Elemental Fume Chemistry Emission Factor (%)	Total iron oxide emissions (pounds)[4]	Maximum Operation Annual (pounds)[4,9]	% of Electrode Converted to Fume	Potential to Emit[4,10] Hourly, lb/hr	Daily, lb/day	Annual, tpy
Manganese	8.80%	35	5000.00	0.70%	NA	NA	0.002
Chromium	0	35	5000.00	0.70%	NA	NA	0
Nickel	0	35	5000.00	0.70%	NA	NA	0

Welding Process: Gas Metal Arc Welding (GMAW)
Welding consumable: Solid Wire, gas shielded
Base Metal: Mild Steel
Electrode type: ER308L
Equipment Welding Rate[1,5,9]: 55 lbs/hr

Pollutant	Elemental Fume Chemistry Emission Factor (%)	Total iron oxide emissions (pounds)[5]	Maximum Operation	% of Electrode Converted to Fume	Potential to Emit[5,10]		
			Annual (pounds)[5,9]		Hourly, lb/hr	Daily, lb/day	Annual, tpy
Manganese	8.70%	25	5000	0.50%	NA	NA	0.001
Chromium	12.50%	25	5000	0.50%	NA	NA	0.002
Nickel	5.10%	25	5000	0.50%	NA	NA	0.001

Welding Process: Flux Cored Arc Wired (FCAW)
Welding consumable: Flux Cored Wire, gas shielded
Base Metal: Stainless Steel
Electrode type[12]: E71T-1 and/or E308LT-1
Equipment Welding Rate[1,6]: 176 lbs/hr

Pollutant	Elemental Fume Chemistry Emission Factor (%)	Total iron oxide emissions (pounds)[6]	Maximum Operation	% of Electrode Converted to Fume	Potential to Emit[6,10]		
			Annual (pounds)[6]		Hourly, lb/hr	Daily, lb/day	Annual, tpy
Manganese	12.60%	120	10000	1.20%	NA	NA	0.008
Chromium	0	120	10000	1.20%	NA	NA	0
Nickel	0	120	10000	1.20%	NA	NA	0

Welding Process: Gas Tungsten Arc Welding (GTAW)
Welding consumable: Solid Wire (Manual), gas shielded
Base Metal: Stainless Steel
Electrode type[13]: ER70S-6, ER70S-2, ER308L
Equipment Welding Rate[1,7]: 1.5 lbs/hr

Pollutant	Elemental Fume Chemistry Emission Factor (%)	Total iron oxide emissions (pounds)[7]	Maximum Operation	% of Electrode Converted to Fume	Potential to Emit[7,10]		
			Annual (pounds)[7]		Hourly, lb/hr	Daily, lb/day	Annual, tpy
Manganese	8.80%	70	10000	0.70%	NA	NA	0.003
Chromium	0	70	10000	0.70%	NA	NA	0
Nickel	0	70	10000	0.70%	NA	NA	0

Welding Process: Submerged Arc Welding (SAW)
Welding consumable: Solid Wire, non-gas shielded
Base Metal: Stainless Steel
Electrode type[14]: EM12K, ER308L
Equipment Welding Rate[1,8]: 12.5 lbs/hr

Pollutant	Elemental Fume Chemistry Emission Factor (%)	Total iron oxide emissions (pounds)[8]	Maximum Operation	% of Electrode Converted to Fume	Potential to Emit[8,10]		
			Annual (pounds)[8]		Hourly, lb/hr	Daily, lb/day	Annual, tpy
Manganese	8.70%	50	10000	0.50%	NA	NA	0.002
Chromium	12.50%	50	10000	0.50%	NA	NA	0.003
Nickel	5.10%	50	10000	0.50%	NA	NA	0.001

[4]Annual GMAW operation was taken from PI-3 Welding , with the total number of Metal Inert Gas (MIG) welding units split between both electrodes: 11
[5]Annual GMAW operation was taken from PI-3 Welding , with the total number of Metal Inert Gas (MIG) welding units split between both electrodes: 11
[6]Annual FCAW operation and the number of Metal Inert Gas (MIG) welding units included were taken from PI-3 Welding: 22
[7]Annual GTAW operation and the number of Tungsten Inert Gas (TIG) welding units included were taken from PI-3 Welding: 3
[8]Annual SAW operation and the number of Sub Arc Welding (SAW) welding units included were taken from PI-3 Welding: 1
[9] Annual GMAW operation was taken from PI-3 Welding, with the total units of GMAW welding process split between both electrodes: 50%

[10]Conversion factor for pounds to tons: 2000 lbs/ton

[11]Conversion factor for grams to pounds: 453.59 g/lb

[12]E71T-1 electrode with FCAW process was used as surrogate for electrode E71T-1 and E308LT-1 as no emission data was available for E308LT-1 FCAW process

[13]GMAW process with ER706-6 electrode were used as surrogate as the highest emission rating as no emission data was available for GTAW process

[14]Electrode ER308LSi for GMAW welding process was used as surrogate as maximum emission rating as no emission data was available for SAW process

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Emission Inventory

Emission Unit: **PI-4 Cutting**

Production Information

Potential Hours of Operation	8,760	hours/yr
Summary of Maximum Hourly Welding Use[1]:	0.542	lbs/hr
Summary of Maximum Annual Welding Use[1]:	4,751	lbs/yr

Note: Blank cells indicate no available or found emission factor

Compound	Converted to Fume (grams/min)[1]	Total Annual (lb/yr)	Total Annual (tons/yr)
Acetaldehyde			
Acetophenone			
Acrolein			
Benzene			
bis(2-Ethylhexyl) phthalate (DEHP)			
Bromomethane (methyl bromide)			
2-Butanone (MEK)			
Carbon tetrachloride			
Chlorine			
Chlorobenzene			
Chloroform			
Chloromethane (methyl chloride)			
Dibenzo furans			
Heptachlorodibenzo-p-furans			
Hexachlorodibenzo-p-furans			
Octachlorodibenzo-p-furans			
Pentachlorodibenzo-p-furans			
2,3,7,8-Tetrachlorodibenzo-p-furans			
Tetrachlorodibenzo-p-furans			
1,2-Dichloroethane (ethylene dichloride)			
Dichloromethane (methylene chloride)			
1,2-Dichloropropane (propylene dichloride)			
2,4-Dinitrophenol			
Ethylbenzene			
Formaldehyde			
Hydrogen chloride			
Naphthalene			
Pentachlorophenol			
4-Nitrophenol			
Phenol			
Polychlorinated biphenyls			
Decachlorobiphenyl			
Dichlorobiphenyl			
Heptachlorobiphenyl			
Hexachlorobiphenyl			
Pentachlorobiphenyl			
Trichlorobiphenyl			
Tetrachlorobiphenyl			
Propionaldehyde			
Styrene			
2,3,7,8-Tetrachlorodibenzo-p-dioxins			
Tetrachloroethene			
1,1,1-Trichloroethane (methyl chloroform)			
Trichloroethene			
Toluene			
2,4,6-Trichlorophenol			
Vinyl Chloride			
o-Xylene			

Emission Unit: PI-4 Cutting (cont.)

Compound	Converted to Fume (grams/min)[1]	Total Annual (lb/yr)	Total Annual (tons/yr)
POM			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Chrysene			
Benzo(k)fluoranthene			
Dibenzo(a,h)anthracene			
Indeno(1,2,3,c,d)pyrene			
Acenaphthene			
Fluorene			
Anthracene			
Phenanthrene			
Fluoranthene			
Pyrene			
Perylene			
Benzo(g,h,i)perylene			
Acenaphthylene			
Benzo(e)pyrene			
2-Methylnaphthalene			
Benzo(j,k)fluoranthene			
Benzo(b,k)fluoranthene			
2-Chloronaphthalene			
Antimony			
Arsenic			
Beryllium			
Cadmium			
Chromium (Total)[2]	0.828	959.681	**0.480**
Chromium (VI)			
Cobalt			
Lead			
Manganese[2]	0.180	209.040	**0.105**
Mercury			
Nickel[2]	0.422	489.343	**0.245**
Selenium			
Total of all HAPs (tons/year):			**0.83**

[1]Submitted by Petersen Inc as email attachment dated 05/07/12

[2]For emission factor calculations see tables below

Welding Process[3]: Plasma Arc Welding (PAW)
Base Metal: Stainless Steel
Thickness: 8mm
Cutting Technique[4]: Semi-dry

Pollutant[5]	Elemental Fume Chemistry (%)	Plasma Welding Emission Factor (grams/min)	Amount of HAP Converted to Fume (grams/min)[5,6]	Maximum Hours of Operation		Potential to Emit[5,6,7,8]		
				Daily	Annual	Hourly, lb/hr	Daily, lb/day	Annual, tpy
Manganese	4.40%	4.1	0.18	24	8,760.00	0.023863	0.572711039	0.105
Chromium	20.20%	4.1	0.83	24	8,760.00	0.109553	2.629264314	0.48
Nickel	10.30%	4.1	0.42	24	8,760.00	0.055861	1.340664477	0.245

[3]PAW welding process uses a plasma head welding instrument to cut stainless steel of 8mm thickness

[4]The semidry cutting technique uses approximately 50mm of water under the plate as a buffer

[5]Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel, Bromssen (1994)

[6]Number of emission units included in PTE calculations: 1

[7]Conversion factor for grams to pounds: 453.59 g/lb

[8]Conversion factor for pounds to tons: 2000 lbs/ton

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Emission Inventory

Emission Unit: **PI-5 - Natural Gas Combustion**

Production Information

Potential Hours of Operation	8,760	hours/yr
Maximum Hourly Heat Input[1]	3.5	MMBtu/hr
Maximum Annual Heat Input[1]	30,678	MMBtu/yr

Note: Blank cells indicate no available or found emission factor

Compound	Emission Factor[2] (lb/MMBtu)	Total Annual (lb/yr)	Total Annual (tons/yr)[3]
Acetaldehyde	8.30E-04	2.55E+01	**1.27E-02**
Acetophenone	3.20E-09	9.82E-05	**4.91E-08**
Acrolein	4.00E-03	1.23E+02	**6.14E-02**
Benzene	2.10E-03	6.44E+01	**3.22E-02**
bis(2-Ethylhexyl) phthalate (DEHP)	4.70E-08	1.44E-03	**7.21E-07**
Bromomethane (methyl bromide)	1.50E-05	4.60E-01	**2.30E-04**
2-Butanone (MEK)	5.40E-06	1.66E-01	**8.28E-05**
Carbon tetrachloride	4.50E-05	1.38E+00	**6.90E-04**
Chlorine	7.90E-04	2.42E+01	**1.21E-02**
Chlorobenzene	3.30E-05	1.01E+00	**5.06E-04**
Chloroform	2.80E-05	8.59E-01	**4.29E-04**
Chloromethane (methyl chloride)	2.30E-05	7.06E-01	**3.53E-04**
Dibenzo furans			
Heptachlorodibenzo-p-furans			
Hexachlorodibenzo-p-furans			
Octachlorodibenzo-p-furans			
Pentachlorodibenzo-p-furans			
2,3,7,8-Tetrachlorodibenzo-p-furans			
Tetrachlorodibenzo-p-furans			
1,2-Dichloroethane (ethylene dichloride)			
Dichloromethane (methylene chloride)			
1,2-Dichloropropane (propylene dichloride)			
2,4-Dinitrophenol			
Ethylbenzene			
Formaldehyde	7.50E-02	2.30E+03	**1.15E+00**
Hydrogen chloride			
Naphthalene	6.10E-04	1.87E+01	**9.36E-03**
Pentachlorophenol			
4-Nitrophenol			
Phenol			
Polychlorinated biphenyls			
Decachlorobiphenyl			
Dichlorobiphenyl			
Heptachlorobiphenyl			
Hexachlorobiphenyl			
Pentachlorobiphenyl			
Trichlorobiphenyl			
Tetrachlorobiphenyl			
Propionaldehyde			
Styrene			
2,3,7,8-Tetrachlorodibenzo-p-dioxins			
Tetrachloroethene			
1,1,1-Trichloroethane (methyl chloroform)			
Trichloroethene			
Toluene	3.40E-03	1.04E+02	**5.22E-02**
2,4,6-Trichlorophenol			
Vinyl Chloride			
o-Xylene			

Emission Unit: Natural Gas Combustion (cont.)

Compound	Emission Factor[2] (lb/MMBtu)	Total Annual (lb/yr)	Total Annual (tons/yr)3
POM		2.10E+00	**1.05E-03**
Benzo(a)anthracene	1.80E-06	5.52E-02	
Benzo(a)pyrene	1.20E-06	3.68E-02	
Benzo(b)fluoranthene	1.80E-06	5.52E-02	
Chrysene	1.80E-06	5.52E-02	
Benzo(k)fluoranthene	1.80E-06	5.52E-02	
Dibenzo(a,h)anthracene	1.20E-06	3.68E-02	
Indeno(1,2,3,c,d)pyrene			
Acenaphthene	1.80E-06	5.52E-02	
Fluorene	2.80E-06	8.59E-02	
Anthracene	2.40E-06	7.36E-02	
Phenanthrene	1.70E-05	5.22E-01	
Fluoranthene	3.00E-06	9.20E-02	
Pyrene	5.00E-06	1.53E-01	
Perylene			
Benzo(g,h,i)perylene	1.20E-06	3.68E-02	
Acenaphthylene	1.80E-06	5.52E-02	
Benzo(e)pyrene			
2-Methylnaphthalene	2.40E-05	7.36E-01	
Benzo(j,k)fluoranthene			
Benzo(b,k)fluoranthene			
2-Chloronaphthalene			
Antimony			
Arsenic	2.00E-04	6.14E+00	**3.07E-03**
Beryllium	1.20E-05	3.68E-01	**1.84E-04**
Cadmium	1.10E-03	3.37E+01	**1.69E-02**
Chromium (Total)			
Chromium (VI)	1.40E-03	4.29E+01	**2.15E-02**
Cobalt	8.40E-05	2.58E+00	**1.29E-03**
Lead			
Manganese	3.80E-04	1.17E+01	**5.83E-03**
Mercury			
Nickel	2.10E-03	6.44E+01	**3.22E-02**
Selenium	2.40E-05	7.36E-01	**3.68E-04**
Total of all HAPs (tons/year):			**1.41**

[1]Aggregate Hourly Heat Rate taken from PI-5 Natural Gas Emission Unit

[2]AP-42 July 1998, Tables 1.4-3 and 1.4-4

[3]Conversion factor for pounds to tons: 2000 lbs/ton

Petersen - Pocatello, Idaho
Synthetic Minor Source Air Quality Operating Permit
Hazardous Air Pollutant Emission Inventory

Emission Unit: **PI-6 Propane Combustion**

Production Information

Potential Hours of Operation	8,760	hours/yr
Maximum Hourly Heat Input[1]	0.625	MMBtu/hr
Maximum Annual Heat Input[1]	5,475	MMBtu/yr

Note: Blank cells indicate no available or found emission factor

Compound	Natural Gas Emission Factor[2] (lb/MMscf)	Turbine LPG Emission Factor[3] (lb/MMscf)	Propane Internal Combustion Emission Factor[4,5] (lb/MMscf)	Maximum Emission Factor Value Used (lb/MMscf)[6]	Sub-Total Annual (lb/yr)[7,8,9]	Total Annual (lb/yr)[7,8,9]	Total Annual (tons/yr)[10]
Acetaldehyde	8.30E-04		9.04E+01	9.04E+01	1.97E+02	1.97E+02	**9.84E-02**
Acetophenone	3.20E-09			3.20E-09	1.72E-08	1.72E-08	**8.59E-12**
Acrolein	4.00E-03		6.88E+01	6.88E+01	1.50E+02	1.50E+02	**7.49E-02**
Benzene	2.10E-03		2.50E+01	2.50E+01	5.43E+01	5.43E+01	**2.72E-02**
bis(2-Ethylhexyl) phthalate (DEHP)	4.70E-08			4.70E-08	2.52E-07	2.52E-07	**1.26E-10**
Bromomethane (methyl bromide)	1.50E-05			1.50E-05	8.05E-05	8.05E-05	**4.03E-08**
2-Butanone (MEK)	5.40E-06			5.40E-06	2.90E-05	2.90E-05	**1.45E-08**
Carbon tetrachloride	4.50E-05		1.04E+00	1.04E+00	2.27E+00	2.27E+00	**1.14E-03**
Chlorine	7.90E-04			7.90E-04	4.24E-03	4.24E-03	**2.12E-06**
Chlorobenzene	3.30E-05		8.11E-01	8.11E-01	1.77E+00	1.77E+00	**8.83E-04**
Chloroform	2.80E-05		8.09E-01	8.09E-01	1.76E+00	1.76E+00	**8.81E-04**
Chloromethane (methyl chloride)	2.30E-05		1.28E+00	1.28E+00	2.78E+00	2.78E+00	**1.39E-03**
Dibenzo furans				0.00E+00		0.00E+00	
Heptachlorodibenzo-p-furans				0.00E+00			
Hexachlorodibenzo-p-furans				0.00E+00			
Octachlorodibenzo-p-furans				0.00E+00			
Pentachlorodibenzo-p-furans				0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-furans				0.00E+00			
Tetrachlorodibenzo-p-furans				0.00E+00			
1,2-Dichloroethane (ethylene dichloride)			6.70E-01	6.70E-01	1.46E+00	1.46E+00	**7.30E-04**
Dichloromethane (methylene chloride)				0.00E+00			
1,2-Dichloropropane (propylene dichloride)			7.65E-01	7.65E-01	1.67E+00	1.67E+00	**8.33E-04**
2,4-Dinitrophenol				0.00E+00			
Ethylbenzene			1.28E+00	1.28E+00	2.80E+00	2.80E+00	**1.40E-03**
Formaldehyde	7.50E-02		2.81E+02	2.81E+02	6.12E+02	6.12E+02	**3.06E-01**
Hydrogen chloride				0.00E+00			
Naphthalene	6.10E-04		2.20E+00	2.20E+00	4.79E+00	4.79E+00	**2.39E-03**
Pentachlorophenol				0.00E+00			
4-Nitrophenol				0.00E+00			
Phenol		1.45E-01	8.25E-01	8.25E-01	1.80E+00	1.80E+00	**8.99E-04**
Polychlorinated biphenyls				0.00E+00		0.00E+00	
Decachlorobiphenyl				0.00E+00			
Dichlorobiphenyl				0.00E+00			
Heptachlorobiphenyl				0.00E+00			
Hexachlorobiphenyl				0.00E+00			
Pentachlorobiphenyl				0.00E+00			
Trichlorobiphenyl				0.00E+00			
Tetrachlorobiphenyl				0.00E+00			
Propionaldehyde				0.00E+00			
Styrene			7.82E-01	7.82E-01	1.70E+00	1.70E+00	**8.52E-04**
2,3,7,8-Tetrachlorodibenzo-p-dioxins				0.00E+00			
Tetrachloroethene			6.81E-02	6.81E-02	1.48E-01	1.48E-01	**7.42E-05**
1,1,1-Trichloroethane (methyl chloroform)			9.04E-01	9.04E-01	1.97E+00	1.97E+00	**9.84E-04**
Trichloroethene							
Toluene	3.40E-03		1.31E+01	1.31E+01	2.86E+01	2.86E+01	**1.43E-02**
2,4,6-Trichlorophenol				0.00E+00			
Vinyl Chloride			4.24E-01	4.24E-01	9.23E-01	9.23E-01	**4.61E-04**
o-Xylene			8.94E+00	8.94E+00	1.95E+01	1.95E+01	**9.74E-03**

Emission Unit: Propane Combustion (cont.)

Compound	Natural Gas Emission Factor[2] (lb/MMscf)	Turbine LPG Emission Factor[3] (lb/MMscf)	Propane Internal Combustion Emission Factor[4,5] (lb/MMscf)	Maximum Emission Factor Value Used (lb/MMscf)[6]	Sub-Total Annual (lb/yr)[7,8,9]	Total Annual (lb/yr)[7,8,9]	Total Annual (tons/yr)[10]
POM						1.27E+00	**6.35E-04**
Benzo(a)anthracene	1.80E-06		5.27E-03	5.27E-03	1.15E-02	1.15E-02	
Benzo(a)pyrene	1.20E-06			1.20E-06	6.44E-06	6.44E-06	
Benzo(b)fluoranthene	1.80E-06			1.80E-06	9.66E-06	9.66E-06	
Chrysene	1.80E-06		7.50E-03	7.50E-03	1.63E-02	1.63E-02	
Benzo(k)fluoranthene	1.80E-06			1.80E-06	9.66E-06	9.66E-06	
Dibenzo(a,h)anthracene	1.20E-06			1.20E-06	6.44E-06	6.44E-06	
Indeno(1,2,3,c,d)pyrene				0.00E+00			
Acenaphthene	1.80E-06		1.77E-01	1.77E-01	3.86E-01	3.86E-01	
Fluorene	2.80E-06		6.52E-02	6.52E-02	1.42E-01	1.42E-01	
Anthracene	2.40E-06		2.01E-02	2.01E-02	4.39E-02	4.39E-02	
Phenanthrene	1.70E-05		9.16E-02	9.16E-02	2.00E-01	2.00E-01	
Fluoranthene	3.00E-06		1.30E-02	1.30E-02	2.84E-02	2.84E-02	
Pyrene	5.00E-06		1.84E-02	1.84E-02	4.02E-02	4.02E-02	
Perylene				0.00E+00			
Benzo(g,h,i)perylene	1.20E-06			1.20E-06	6.44E-06	6.44E-06	
Acenaphthylene	1.80E-06		1.77E-01	1.77E-01	3.86E-01	3.86E-01	
Benzo(e)pyrene			7.82E-03	7.82E-03	1.70E-02	1.70E-02	
2-Methylnaphthalene	2.40E-05			2.40E-05	1.29E-04	1.29E-04	
Benzo(j,k)fluoranthene				0.00E+00			
Benzo(b,k)fluoranthene				0.00E+00			
2-Chloronaphthalene				0.00E+00			
Antimony				0.00E+00			
Arsenic	2.00E-04	1.79E-02		1.79E-02	3.90E-02	3.90E-02	**1.95E-05**
Beryllium	1.20E-05	3.57E-03		3.57E-03	7.78E-03	7.78E-03	**3.89E-06**
Cadmium	1.10E-03	8.94E-03		8.94E-03	1.95E-02	1.95E-02	**9.74E-06**
Chromium (Total)				0.00E+00			
Chromium (VI)	1.40E-03			1.40E-03	7.51E-03	7.51E-03	**3.76E-06**
Cobalt	8.40E-05			8.40E-05	4.51E-04	4.51E-04	**2.25E-07**
Lead		7.16E-02		7.16E-02	1.56E-01	1.56E-01	**7.80E-05**
Manganese	3.80E-04	3.71E-01		3.71E-01	8.08E-01	8.08E-01	**4.04E-04**
Mercury				0.00E+00			
Nickel	2.10E-03	6.60E-01		6.60E-01	1.44E+00	1.44E+00	**7.19E-04**
Selenium	2.40E-05	1.79E-02		1.79E-02	3.90E-02	3.90E-02	**1.95E-05**
			Total of all HAPs (tons/year):				**0.55**

[1]Aggregate Hourly Rate calculation take from PI-6 Propane emission unit

[2]AP-42 July 1998, Tables 1.4-3 and 1.4-4; Natural Gas Combustion EF and rating

[3]California Air Toxics LPG Turbine Emission Factors (maximum) and rating: http://www.arb.ca.gov/ei/catef/catef.htm

[4]Mojave Desert Air Quality Management District: Default Emission Factors for Internal Combustion Engines (ICE)

[5]No Emission Factor Rating Available

[6]The largest emission factor was chosen between Natural Gas combustion, LPG turbine, and Propane ICE

[7]Annual usage converted from MMBtu to MMScf based on heat content of fuel: 1020 mmBTU/mmSCF

[8]Annual usage converted from scf to gallons based on heat content of fuel: 36.4 scf/gal propane

[9]Annual usage converted from MMBtu to gallons based on heat content of fuel: 91.5 MMbtu/1000 gal propane

[10]Conversion factor from pounds to tons: 2000 lbs/ton