VIA CERTIFIED MAIL 7003 0500 0003 5373 5940 December 14, 2004

Mr. Todd Cochran
Scherer Industrial Group,
Terre Haute Division
3601 Scherer Road
Terre Haute, Indiana 47805

Re: Registered Construction and Operation Status, **R167-12292-00177**

Dear Mr. Cochran:

The application from Scherer Industrial Group, Terre Haute Division, received on May 12, 2000, has been reviewed. Based on the data submitted and the provisions in Sections 1 and 2 of 326 IAC 2-1, it has been determined that the following equipment, located at 3601 Scherer Road, Terre Haute, Indiana, is classified as registered:

(1) One (1) 0.255 MMBtu per hour, natural gas fired burnout oven, identified as 00306;

(2) One (1) 0.13 MMBtu per hour, natural gas fired space heater, identified as AP001;

(3) Six (6) 0.06 MMBtu per hour, natural gas fired radiant space heaters, identified as AP002;

(4) One (1) 0.40 MMBtu per hour, natural gas fired bake oven, identified as AP007;

(5) One (1) 0.32 MMBtu per hour, natural gas fired steam cleaner, identified as 00357;

(6) One (1) paint booth, identified as AP006, for the surface coating of metal motors and copper wire, with a maximum throughput of four gallons of paint per day;

(7) One (1) VPI varnish dip tank system, identified as 00326, for the coating of metal parts;

(8) One (1) parts cleaner, identified as Safety Kleen AP009, with a solvent consumption of 0.13 gallons of solvent per day;

(9) One (1) enclosed sand blaster, identified as AP005, with a maximum flow rate of 475 pounds per hour;

(10) One (1) MIG Welder, identified as 00312, with maximum consumption of 5 pounds of wire per hour;

(11) One (1) Arc welder, identified as AP008, with a maximum consumption of 26 ounces of electrode per hour;

(12) One (1) TIG Welder, identified as 00314, with a maximum consumption of 5 pounds of metal per hour;

(13) Oxygen/Acetylene tanks and torches, at four (4) stations, identified as AP004, each with a maximum consumption of 1 pound of metal per hour.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the visible emissions shall meet the following:

   (a) Visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.

   (b) Visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

2. Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

   (a) Equip the cleaner with a cover;

   (b) Equip the cleaner with a facility for draining cleaned parts;

   (c) Close the degreaser cover whenever parts are not being handled in the cleaner;

   (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

   (e) Provide a permanent, conspicuous label summarizing the operation requirements;

   (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

3. This registration is a renewal of the first air approval issued to this source (CP167-V024).

Any change or modification which may increase the actual VOC emissions to 15 pounds per day or more, or the potential VOC emissions to 25 tons per year or more, potential individual HAP emissions to 10 tons per year, or potential total HAP emissions to 25 tons per year from the equipment covered in this registration must be approved by the Office of Air Quality (OAQ) and Vigo County Air Pollution Control (VCAPC) before such change may occur.

Sincerely,

George M. Needham
Director
Vigo County Air Pollution Control

sbs

cc:
Mindy Hahn, IDEM
Winter Bottum, IDEM

Indiana Department of Environmental Management
Office of Air Quality
and Vigo County Air Pollution Control

Technical Support Document (TSD) for a Re-Registration

Source Background and Description

Source Name:	Scherer Industrial Group
Source Location:	3601 Scherer Road, Terre Haute, Indiana 47805
County:	Vigo
SIC Code:	7699
Operation Permit No.:	167-12292-00117
Permit Reviewer:	Scott Sines

Vigo County Air Pollution control has reviewed an application for a re-registration pursuant to 326 IAC 2-5.5-2 from Scherer Industrial Group Services relating to the operation of a Repair Shop, consisting of:

(a) One (1) 0.255 MMBtu per hour, natural gas fired burnout oven, identified as 00306;

(b) One (1) 0.13 MMBtu per hour, natural gas fired space heater, identified as AP001;

(c) Six (6) 0.06 MMBtu per hour, natural gas fired radiant space heaters, identified as AP002;

(d) One (1) 0.40 MMBtu per hour, natural gas fired bake oven, identified as AP007;

(e) One (1) 0.32 MMBtu per hour, natural gas fired steam cleaner, identified as 00357;

(f) One (1) paint booth, identified as AP006, for the surface coating of metal motors and copper wire, with a maximum throughput of four gallons of paint per day;

(g) One (1) VPI varnish dip tank system, identified as 00326, for the coating of metal parts;

(h) One (1) parts cleaner, identified as Safety Kleen AP009, with a solvent consumption of 0.13 gallons of solvent per day;

(i) One (1) enclosed sand blaster, identified as AP005, with a maximum flow rate of 475 pounds per hour;

(j) One (1) MIG Welder, identified as 00312, with maximum consumption of 5 pounds of wire per hour;

(k) One (1) Arc welder, identified as AP008, with a maximum consumption of 26 ounces of electrode per hour;

(l) One (1) TIG Welder, identified as 00314, with a maximum consumption of 5 pounds of metal per hour;

(m) Oxygen/Acetylene tanks and torches, at four (4) stations, identified as AP004, each with a maximum consumption of 1 pound of metal per hour.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
STH5 Bake Out	Bake Out Oven	9	0.83	600	222
STH7 Shot Blast	Shot Blast	7	0.50	1750	Ambient
STH8 Paint Booth	Paint Booth	6	0.75	3300	Ambient
STH9 Heater	Heater	25	0.50	0	115
STH10 Burn Off	Burn Off Oven	23	0.83	200	1200
STH11 Power Wash	Power Wash	4.8	0.92 x 0.92	9000	Ambient

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on May 12, 2000. The source was initially granted “Exempt Operation Status” on May 1, 1998 under Registered Construction and Operation Status, CP 167-V024.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix A, pages 1-13, of this document.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	11.15
SO_2	0.0
VOC	11.62
CO	0.3
NO_x	0.0
Xylene	5.02
Glycol Ethers	4.22

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Vigo County.

Pollutant	Status
PM-10	attainment
SO_2	maintenance attainment
NO_2	attainment
1-hr Ozone	attainment
8-hr Ozone	basic nonattainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Vigo County has been desgnated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for nonattainment new source review.

(b) Vigo County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

(c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)
This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) Each criteria pollutant is less than 100 tons per year,

(b) A single hazardous air pollutant (HAP) is less than 10 tons per year, and

(c) Any combination of HAPs is less than 25 tons/year.

Federal Rule Applicability

(a) The storage tanks are not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.116b, Subpart Kb) because the 1085 gallon tank, and the 650 gallon tank are smaller than the 10,567 gallon applicability size for this rule.

(b) The cold cleaner degreaser is not subject to National Emission Standards for Hazardous Air Pollutants (NESHAP), 326 IAC 20, (40 CFR 63.460, Subpart T) because the solvent used in the degreaser contains perchlorethylene in quantity less than the five percent (5%) applicability level for this rule.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because the source emits less than 100 tons/yr of all criteria pollutants.

326 IAC 5-1 (Opacity)

Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the visible emissions shall meet the following:

(a) Visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.

(b) Visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-3 (Process Operations)

Pursuant to 326 IAC 6-3-1(b)(9) and 6-3-1(b)(10) the source is exempt from this rule as the source uses less than 625 pounds of rod or wire per day and less than 3,400 inches per hour of stock less than 1-inch thick.

326 IAC 8 (Volatile Organic Compounds)

These rules do not apply, because actual emissions of VOC from paint booth AP006, and the VPI dip tank are less than the 15 pounds per day applicability level and the date of construction of the solvent dip tank is 1979, prior to the July 1, 1990 applicability date of the rule.

326 IAC 8-3-2 (Cold Cleaner Operation)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

Conclusion

The construction and operation of this Repair Shop shall be subject to the conditions of the attached proposed Registration No: 167-12292-00117.

Appendix A: Emission Calculations
Abrasive Blasting - Sand

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Table 1 - Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

	Nozzle Pressure (psig)							
Internal diameter, in	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

Calculations

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =	475
D = Density of abrasive (lb/ft3) From Table 2 =	99
D1 = Density of sand (lb/ft3) =	99
ID = Actual nozzle internal diameter (in) =	0.4
ID1 = Nozzle internal diameter (in) from Table 3 =	0.4

Flow Rate (FR) (lb/hr) = **475.000** per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =	0.041	
FR = Flow Rate (lb/hr) =	475.000	
w = fraction of time of wet blasting =	0	%
N = number of nozzles =	1	

Uncontrolled Emissions =	**19.48**	**lb/hr**
	85.30	**ton/yr**

Control efficiency = 98%

Controlled Emissions =	**0.39**	**lb/hr**
	1.71	**tons/yr**

METHODOLOGY
Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Ton/yr = lb/hr X 8760 hr/yr X ton/2000 lbs
Flow Rate (FR) (lb/hr) = FR1 x (ID/ID1)2 x (D/D1)
E = EF x FR x (1-w/200) x N
w should be entered in as a whole number (if w is 50%, enter 50)

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
918 Deep Base	10.0	64.00%	0.0%	64.0%	0.0%	46.00%	0.16700	1.000	6.40	6.40	1.07	25.65	4.68	2.24	13.91	15%
4139 Light Base	9.2	54.00%	0.0%	54.0%	0.0%	46.00%	0.16700	1.000	4.97	4.97	0.83	19.91	3.63	2.63	10.80	15%
408 White	12.7	47.70%	0.0%	47.7%	0.0%	52.00%	0.16700	1.000	6.06	6.06	1.01	24.28	4.43	4.13	11.65	15%
074 Line Interior	10.1	29.00%	0.0%	29.0%	0.0%	54.00%	0.16700	1.000	2.93	2.93	0.49	11.74	2.14	4.46	5.42	15%
Xylene	7.2	100.00%	0.0%	100.0%	0.0%	0.00%	0.00420	4.000	7.20	7.20	0.12	2.90	0.53	0.00	#DIV/0!	0%
Mineral Spirits	7.2	100.00%	0.0%	100.0%	0.0%	0.00%	0.00950	4.000	7.20	7.20	0.27	6.57	1.20	0.00	#DIV/0!	0%
Glyptal Paint	9.9	40.20%	0.0%	40.2%	0.0%	43.50%	0.07500	4.000	3.98	3.98	1.19	28.65	5.23	6.61	9.15	15%
State Potential Emissions			**Add worst case coating to all solvents**								**2.26**	**54.30**	**9.91**	**8.85**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
VPI Varnish	10.0	5.00%	0.0%	5.0%	0.0%	95.00%	0.33000	1.000	0.50	0.50	0.17	3.96	0.72	0.00	0.53	100%
VPI Stabilizer	6.8	100.00%	0.0%	100.0%	0.0%	0.00%	0.03300	1.000	6.80	6.80	0.22	5.39	0.98	0.00	#DIV/0!	0%
	0.0	0.00%	0.0%	0.0%	0.0%	0.00%	0.00000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!	0%
State Potential Emissions			**Add worst case coating to all solvents**								**0.39**	**9.35**	**1.71**	**0.00**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Permit Reviewer: Scott Sines
Date: 11/17/04

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Glyptol Paint	9.91	0.075000	4.00	34.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.49	0.00	0.00	0.00	0.00	0.00	0.00
918 Deep Bas	10.1	0.041800	4.00	0.00%	0.00%	0.00%	0.00%	0.00%	57.00%	0.00%	0.00	0.00	0.00	0.00	0.00	4.22	0.00
Xylene	7.2	0.004200	4.00	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.53	0.00	0.00	0.00	0.00	0.00	0.00
Mineral Spitits	7.2	0.004200	4.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VPI Varnish	10	0.330000	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
VPI Stabilizer	6.75	0.033000	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%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total State Potential Emissions											**5.02**	**0.00**	**0.00**	**0.00**	**0.00**	**4.22**	**0.00**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Hapcalc.xls 9/95

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.26	2.2

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	**see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.1

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note to Reviewer: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date:

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.345E-06	1.340E-06	8.377E-05	2.010E-03	3.797E-06

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	5.585E-07	1.229E-06	1.564E-06	4.244E-07	2.345E-06

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.13	1.1

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	**see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note to Reviewer: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date:

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.196E-06	6.833E-07	4.271E-05	1.025E-03	1.936E-06

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.847E-07	6.263E-07	7.972E-07	2.164E-07	1.196E-06

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.36	3.2

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	**see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.1

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note to Reviewer: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date:

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.311E-06	1.892E-06	1.183E-04	2.838E-03	5.361E-06

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.884E-07	1.734E-06	2.208E-06	5.992E-07	3.311E-06

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.4	3.5

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	**see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.1

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note to Reviewer: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date:

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.679E-06	2.102E-06	1.314E-04	3.154E-03	5.957E-06

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	8.760E-07	1.927E-06	2.453E-06	6.658E-07	3.679E-06

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Scherer Industrial Group
Address City IN Zip: 3601 Scherer Road
Permit Number: 167-12292-00117
Plt ID: 167-00117
Reviewer: Scott Sines
Date: 11/17/04

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
WELDING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Submerged Arc	1	1.625		0.036	0.011			0.059	0.018	0.000	0	0.018
Metal Inert Gas (MIG)(carbon steel)	1	5		0.0055	0.0005			0.028	0.003	0.000	0	0.003
Stick (E7018 electrode)				0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon stee	1	5		0.0055	0.0005			0.028	0.003	0.000	0	0.003
Oxyacetylene(carbon steel)	4	1		0.0055	0.0005			0.022	0.002	0.000	0	0.002
	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene				0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane				0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**				0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.14				0.02
Potential Emissions lbs/day								3.25				0.60
Potential Emissions tons/year								0.59				0.11

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick r
Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" t
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lb

welding.xls (11/99)

Welding and other flame cutting emission factors are from an internal training session document, "Welding and Flame Cutting". See Rebecca Mason if you need a copy.
Refer to AP-42, Chapter 12.19 for additional emission factors for welding.