



Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

June 12, 2003

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
RE: Indalex, Inc. #039-16964-00581
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4 (d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within (18) eighteen days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) the date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (b) the interest of the person making the request;
- (c) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for consideration at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosure

REGIS.wpd 8/21/02

June 12, 2003

Aaron M. Miller
Indalex Inc.
23841 Reedy Dr.
Elkhart, Indiana 46514

Re: Registered Construction and Operation Status,
039-16964-00581

Dear Mr. Miller.:

The application from Indalex Inc., received on March 25, 2003, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1-2(1)(B), it has been determined that the following Aluminum Extrusion facility, to be located at 23841 Reedy Dr., Elkhart, Indiana 46514, Indiana, is classified as registered:

- (a) One (1) Make-up units, identified as #1, rated at four (4) million British thermal units (MMBtu).
- (b) Seven (7) Forced Air Heaters, identified as #2 - #8, rated (0.25) million British thermal units (MMBtu) per hour each and each exhausting at seven (7) stacks, identified as Stacks #2 - #8 respectively.
- (c) One (1) Forced Air Heater, identified as #9, rated at (0.75) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as Stack #9.
- (d) Two (2) Caustic Heaters, identified as #10 and #11, rated at (0.15) million British thermal units (MMBtu) per hour each.
- (e) Two (2) Billet Furnaces, identified as Billet Furnaces #1 and #2, rated at (5.4) million British thermal units (MMBtu) per hour each and each exhausting at one (1) stack, identified as Stacks #13 and #12 respectively.
- (f) One (1) Billet Furnace, identified as Billet Furnace #3, rated at (8.3) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as Stack #14.
- (g) One (1) Age Oven, identified as Age Oven #1, rated at (2.5) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as Stack #15.
- (h) One (1) Age Oven, identified as Age Oven #2, rated at five (5) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as Stack #16.
- (i) One (1) Age Oven, identified as Age Oven #3, rated at (10.8) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as Stack #17.
- (j) Thirteen (13) Space Heaters, identified as #18 - #30, rated at (0.2) million British thermal units (MMBtu) per hour each and each exhausting at one (1) stack, identified as Stacks #18 - #30 respectively.
- (k) One (1) Space Heater, identified as #31, rated at (0.15) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as Stack #31.
- (l) One (1) Degreaser, identified as #32.

- (m) Two (2) Torch Cutters, identified as #34 and #35.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 2-6, Indalex Inc. must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).
2. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
3. Pursuant to 326 IAC 8-3-3 (Open Top Vapor Degreaser Operation), Indalex Inc. shall:
 - (1) equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone;
 - (2) keep the cover closed at all times except when processing work loads through the degreaser;
 - (3) minimize solvent carryout by:
 - (A) racking parts to allow complete drainage;
 - (B) moving parts in and out of the degreaser at less than 3.3 meters per minute (eleven (11) feet per minute);
 - (C) degreasing the workload in the vapor zone at least thirty (30) seconds or until condensation ceases;
 - (D) tipping out any pools of solvent on the cleaned parts before removal; and
 - (E) allowing parts to dry within the degreaser for at least fifteen (15) seconds or until visually dry;
 - (4) not degrease porous or absorbent materials, such as cloth, leather, wood or rope;
 - (5) not occupy more than half of the degreaser's open top area with the workload;
 - (6) not load the degreaser such that the vapor level drops more than fifty percent (50%) of the vapor depth when the workload is removed;

- (7) never spray above the vapor level;
- (8) repair solvent leaks immediately, or shut down the degreaser;
- (9) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, such that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere;
- (10) not use workplace fans near the degreaser opening;
- (11) not allow visually detectable water in the solvent exiting the water separator; and
- (12) provide a permanent, conspicuous label summarizing the operating requirements.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(1)(B). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

GAS

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance – Paul Karkiewicz
Northern Regional Office
Permit Tracking
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak
Office of Enforcement

Registration

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(1)(B)

Company Name:	Indalex Inc.
Address:	23841 Reedy Dr
City:	Elkhart, Indiana
Authorized individual:	
Phone #:	
Registration #:	039-16964-00581

I hereby certify that Indalex Inc. is still in operation and is in compliance with the requirements of Registration 039-16964-00581.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Indalex Inc.
Source Location: 23841 Reedy Dr., Elkhart, Indiana 46514
County: Elkhart
SIC Code: 3354
Operation Permit No.: 039-16964-00581
Permit Reviewer: Ghassan Shalabi

The Office of Air Quality (OAQ) has reviewed an application from Indalex Inc. relating to the construction and operation of Aluminum Extrusion facility.

Permitted Emission Units and Pollution Control Equipment

The source consists of no permitted emission units and pollution control devices.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted facilities/units:

- (a) One (1) natural gas Make-up units, identified as #1, rated at four (4) million British thermal units (MMBtu) per hour.
- (b) Seven (7) natural gas Forced Air Heaters, identified as #2 - #8, rated (0.25) million British thermal units (MMBtu) per hour each and exhausting to Stacks #2 - #8 respectively.
- (c) One (1) natural gas Forced Air Heater, identified as #9, rated at (0.75) million British thermal units (MMBtu) per hour and exhausting to one (1) stack, identified as Stack #9.
- (d) Two (2) natural gas Caustic Heaters, identified as #10 and #11, rated at (0.15) million British thermal units (MMBtu) per hour each.
- (e) Two (2) natural gas Billet Furnaces, identified as Billet Furnaces #1 and #2, rated at (5.4) million British thermal units (MMBtu) per hour each and each exhausting to one (1) stack, identified as Stacks #13 and #12 respectively.
- (f) One (1) natural gas Billet Furnace, identified as Billet Furnace #3, rated at (8.3) million British thermal units (MMBtu) per hour and exhausting to one (1) stack, identified as Stack #14.
- (g) One (1) natural Age Oven, identified as Age Oven #1, rated at (2.5) million British thermal units (MMBtu) per hour and exhausting to one (1) stack, identified as Stack #15.
- (h) One (1) natural gas Age Oven, identified as Age Oven #2, rated at five (5) million British thermal units (MMBtu) per hour and exhausting to one (1) stack, identified as Stack #16.

- (i) One (1) natural gas Age Oven, identified as Age Oven #3, rated at (10.8) million British thermal units (MMBtu) per hour and exhausting to one (1) stack, identified as Stack #17.
- (j) Thirteen natural gas (13) Space Heaters, identified as #18 - #30, rated at (0.2) million British thermal units (MMBtu) per hour each and exhausting to Stacks #18 - #30 respectively.
- (k) One (1) natural gas Space Heater, identified as #31, rated at (0.15) million British thermal units (MMBtu) per hour and exhausting to one (1) stack, identified as Stack #31.
- (l) One (1) Degreaser, identified as #32.
- (m) Two (2) Torch Cutters, identified as #34 and #35.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	Make Up Unit	NA	NA	NA	NA
2	Forced Air Heater	23.5	0.83	88	NA
3	Forced Air Heater	23.5	0.83	88	NA
4	Forced Air Heater	23.5	0.83	88	NA
5	Forced Air Heater	23.5	0.83	88	NA
6	Forced Air Heater	23.5	0.83	88	NA
7	Forced Air Heater	23.5	0.83	88	NA
8	Forced Air Heater	23.5	0.83	88	NA
9	Forced Air Heater	16.0	0.83	88	NA
10	Caustic Heater	NA	NA	NA	NA
11	Caustic Heater	NA	NA	NA	NA
12	Billet Furnace #2	28	0.83	268	3600
13	Billet Furnace #1	25	0.67	320	3600
14	Billet Furnace #3	39	1.25	231	4000
15	Age Oven #1	29	1.17	215	1200
16	Age Oven #2	28.5	1.67	230	NA
17	Age Oven #3	39	1.17	185	NA
18	Space Heater	30	0.33	NA	NA
19	Space Heater	30	0.33	NA	NA
20	Space Heater	30	0.33	NA	NA
21	Space Heater	30	0.33	NA	NA
22	Space Heater	30	0.33	NA	NA
23	Space Heater	30	0.33	NA	NA
24	Space Heater	30	0.33	NA	NA
25	Space Heater	30	0.33	NA	NA
26	Space Heater	30	0.33	NA	NA
27	Space Heater	30	0.33	NA	NA
28	Space Heater	30	0.33	NA	NA
29	Space Heater	30	0.33	NA	NA
30	Space Heater	30	0.33	NA	NA
31	Space Heater	30	0.5	NA	NA
32	Degrease	NA	NA	NA	NA
34	Torch Cutter	NA	NA	NA	NA
35	Torch Cutter	NA	NA	NA	NA

Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled Unpermitted Emission Units and Pollution Control Equipment.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

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 March 25, 2003.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Four Pages).

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	1.41
PM-10	1.41
SO ₂	0.12
VOC	1.19
CO	16.94
NO _x	20.16

HAP's	Potential To Emit (tons/year)
Butane	0.42
Ethane	0.62
Hexane	0.36
Pentane	0.52
Propane	0.32
Other	0.02
TOTAL	2.27

- (a) The potential to emit (as defined in 326 IAC 2-5.1-2(1)(B)) of NO_x is less than twenty-five (25) tons per year and equal to or greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2(1)(B).
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a

combination HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Elkhart County has been classified as attainment or unclassifiable for PM10, SO₂, NO_x, and CO. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	1.41
PM10	1.41
SO ₂	0.12
VOC	1.19
CO	16.94
NO _x	20.16
Single HAP	0.62
Combination HAPs	2.27

This new source is not a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

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.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of NOx. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-3-1 (Particulate Emission Limitations for Manufacturing Processes)

- (a) The potential PM/PM10 emissions from this manufacturing process are less than 0.551 pounds per hour. Therefore, this manufacturing process is exempt from this rule pursuant to 326 IAC 6-3-1(b)(14).
- (b) The maximum cutting rate of the torch cutting process and the maximum metal thickness cut at this process are 720 inches per hour and 0.25 inch respectively. Therefore, the torch cutting process is exempt from this rule pursuant to 326 IAC 6-3-1(b)(10).

326 IAC 8-3-3 (Open Top Vapor Degreaser Operation)

The degreaser was constructed after January 1, 1980 and performs organic solvent degreasing operation. Therefore, Indalex Inc. shall:

- (1) equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone;

- (2) keep the cover closed at all times except when processing work loads through the degreaser;
- (2) minimize solvent carryout by:
 - (A) racking parts to allow complete drainage;
 - (B) moving parts in and out of the degreaser at less than 3.3 meters per minute (eleven (11) feet per minute);
 - (C) degreasing the workload in the vapor zone at least thirty (30) seconds or until condensation ceases;
 - (D) tipping out any pools of solvent on the cleaned parts before removal; and
 - (E) allowing parts to dry within the degreaser for at least fifteen (15) seconds or until visually dry;
- (4) not degrease porous or absorbent materials, such as cloth, leather, wood or rope;
- (5) not occupy more than half of the degreaser's open top area with the workload;
- (6) not load the degreaser such that the vapor level drops more than fifty percent (50%) of the vapor depth when the workload is removed;
- (7) never spray above the vapor level;
- (8) repair solvent leaks immediately, or shut down the degreaser;
- (9) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, such that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere;
- (10) not use workplace fans near the degreaser opening;
- (11) not allow visually detectable water in the solvent exiting the water separator; and
- (12) provide a permanent, conspicuous label summarizing the operating requirements.

Conclusion

The construction and operation of this Aluminum Extrusion facility shall be subject to the conditions of the attached proposed Registered Construction and Operation Permit 039-16964-00581.

Indalex, Inc.
 039-16964-00581
 Elkhart, Indiana
 Ghassan Shalabi

Unit	# of units	BTU/ Unit	Total BTU/hr
Make Up Unit	1	4,000,000	4,000,000
Forced Air Heate	7	250,000	1,750,000
Forced Air Heate	1	750,000	750,000
Caustic Heater	2	150,000	300,000
Billet Furnaces	2	5,400,000	10,800,000
Billet Furnaces	1	8,300,000	8,300,000
Age Oven	1	2,500,000	2,500,000
Age Oven	1	5,000,000	5,000,000
Age Oven	1	10,800,000	10,800,000
Space Heater	13	200,000	2,600,000
Space Heater	1	150,000	150,000

46,950,000 BTU/hr

Pollutant	BTU/hr	MMBTU/hr	EF (lb/MMCF)	EF (lb/MMBTU)	PTE (lb/hr)	PTE (t/yr)
PM/PM10	46,950,000	46.95	5.7	0.005588235	0.262368	1.15
SO2	46,950,000	46.95	0.6	0.000588235	0.027618	0.12
NOx	46,950,000	46.95	100	0.098039216	4.602941	20.16
VOC	46,950,000	46.95	5.5	0.005392157	0.253162	1.11
CO	46,950,000	46.95	84	0.082352941	3.866471	16.94

HAPS	BTU/hr	MMBTU/hr	EF (lb/MMCF)	EF (lb/MMBTU)	PTE (lb/hr)	PTE (t/yr)
Butane	46,950,000	46.95	2.1	0.002058824	0.096662	0.42
Ethane	46,950,000	46.95	3.1	0.003039216	0.142691	0.62
Hexane	46,950,000	46.95	1.8	0.001764706	0.082853	0.36
Pentane	46,950,000	46.95	2.6	0.00254902	0.119676	0.52
Propane	46,950,000	46.95	1.6	0.001568627	0.073647	0.32
Other	46,950,000	46.95	0.08	7.84314E-05	0.003682	0.02
				Total		2.27
				Single highest		0.62

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Indalex, Inc.
Address City IN Zip: 23841 Reedy Dr., Elkhart, Indiana 46514
CP: 039-16964
Plt ID: 039-00581
Reviewer: Ghassan Shalabi
Date: 05/05/03

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Submerged Arc	0	0		0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Stick (E7018 electrode)	0	0		0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)	0			0.0055	0.0005			0.000	0.000	0.000	0	0.000
FLAME CUTTING	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)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	2	0.25	12	0.1622	0.0005	0.0001	0.0003	0.058	0.000	0.000	0.000	0.000
Oxymethane	0			0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	0	0	0	0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.06				0.00
Potential Emissions lbs/day								1.40				0.00
Potential Emissions tons/year								0.26				0.00

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 rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

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" thick)
 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 lbs.
 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.