

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Sunshine Salvage Inc.
1848 Lilac Road
Lapaz, Indiana 46537**

is hereby authorized to construct

One (1) propane-fired aluminum sweating furnace rated at 1.80 million British thermal units per hour, equipped with a propane-fired afterburner rated at 1.5 million British thermal units per hour, capacity: 800 pounds per hour.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP 099-6224-00069	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).
 - e) Pursuant to 326 IAC 2-1-4, the permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.
7. That when the facility is constructed and placed into operation the following operation conditions shall

be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), Sunshine Salvage Inc. shall prepare and maintain a preventive maintenance plan, including the following information:
 - a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
 - a) In the event that ownership of this aluminum sweating furnace is changed, Sunshine Salvage Inc. shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - b) The written notification shall be sufficient to transfer the permit from Sunshine Salvage Inc. to the new owner.
 - c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
 - a) Violation of any conditions of this permit.
 - b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

- c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That a copy of this permit shall be available on the premises of the source.

Malfunction Condition

7. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):
- a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
 - b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
 - c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
 - d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Opacity Limitations

8. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
- a) visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings.
 - b) visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

9. Particulate Matter (PM) Limitation

- That pursuant to 326 IAC 6-3 (Process Operations), the afterburner shall be in operation at all times

when the aluminum sweating furnace is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 2.22 pounds per hour.

Visible Emission Notations

10. That visible emission notations of all exhaust to the atmosphere from afterburner shall be performed once per working day. A trained employee will record whether emissions are normal or abnormal.
 - a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start up or shut down time.
 - b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
 - c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
 - d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

11. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), if fugitive dust is visible crossing the boundary or property line of the source, the source is in violation of this fugitive dust rule. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].
12. That the permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) though (4) are violated.
13. That pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on July 3, 1996. This plan consists of applying a dust suppressant to unpaved roads on an as-needed basis.

Thermal Afterburner Operation

14. That the thermal afterburner shall operate at all times that the aluminum sweating furnace is operated. When operating, the thermal afterburner shall maintain a minimum operating temperature of 1,400 degrees Fahrenheit or a temperature, fan amperage and duct velocity determined in stack tests to maintain a minimum 90 percent destruction of the particulate matter captured.

Open Burning

15. That the permittee shall not burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

**Indiana Department of Environmental Management
Office of Air Management**

Technical Support Document (TSD) for New Construction and Operation

**Sunshine Salvage Inc.
1848 Lilac Road
Lapaz, Indiana 46537**

The Office of Air Management (OAM) has reviewed an application from Sunshine Salvage Inc. relating to the construction and operation of an aluminum sweating furnace with a propane-fired afterburner for particulate matter control.

The proposed construction is scheduled to begin upon permit issuance.

The following is a list of facilities and equipment at this source:

One (1) propane-fired aluminum sweating furnace rated at 1.80 million British thermal units per hour, equipped with a propane-fired afterburner rated at 1.5 million British thermal units per hour, capacity: 800 pounds per hour.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
Stack #1	Furnace	18.0	1.67	3,000	1,500

Recommendation

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

An application for the purposes of this review was received on July 3, 1996 with additional information received on December 13, 1996 and January 10, 1997.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

Total Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Emissions (tons per year)
PM	29.9
PM ₁₀	29.9
SO ₂	6.13
VOC	4.28
CO	0.492
NO _x	3.97

Allowable emissions (as defined in the Indiana Rule) of particulate matter are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating rule applicability relating to the ozone standards. Marshall 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 and 40 CFR 52.21.

Marshall 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 and 40 CFR 52.21.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Emissions (tons per year)
PM	10.9
PM ₁₀	10.8
SO ₂	6.13
VOC	0.203
CO	0.492
NO _x	3.97

This new source is not a major stationary source because while it is one of the 28 listed source categories, no attainment regulated pollutant is emitted at a rate of 100 tons per year or greater.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) applicable to this facility.

State Rule Applicability

326 IAC 5-1-2 (Visible Emission Limitations)

The visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings and shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-3-2 (Process Operations)

The aluminum sweating furnace with a propane-fired afterburner for particulate matter control is subject to 326 IAC 6-3, Particulate Emission Limitations. 326 IAC 6-3-2 Process Operations limit the particulate matter to $E = 4.10 P^{0.67}$ or 2.22 pounds per hour (9.72 tons per year) for $P = 0.400$ tons per hour. Since this PM emission limit of 9.72 tons per year is greater than the potential controlled PM emission rate of 0.762 tons per year, the aluminum sweating furnace complies with this rule.

326 IAC 6-4 and 6-5

This source is subject to 326 IAC 6-4 and 6-5. Pursuant to 326 IAC 6-5 a fugitive dust control plan was submitted, reviewed and approved. Fugitive emissions shall be controlled by applying a dust suppressant to unpaved roads on an as-needed basis.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 189 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

This new source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to the Clean Air Act.

Conclusion

The construction of this aluminum sweating furnace with a propane-fired afterburner for particulate matter control will be subject to the conditions of the attached proposed **Construction Permit No. CP 099-6224, Plt ID No. 099-00069.**

Indiana Department of Environmental Management Office of Air Management

Addendum to the
Technical Support Document for New Construction and Operation

**Sunshine Salvage Inc.
1848 Lilac Road
Lapaz, Indiana 46537**

CP 099-6224, Plt ID 099-00069

On February 11, 1997, the Office of Air Management (OAM) had a notice published in the Plymouth Pilot News, P.O. Box 220, Plymouth, Indiana 46562-0220, stating that Sunshine Salvage Inc. had applied for a Construction Permit to construct and operate an aluminum sweating furnace with an afterburner for emissions control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAM has decided to make the following changes to the permit:

1. The heading of Operation Condition 14 has been changed from "Thermal Oxidizer Operation" to "Thermal Afterburner Operation".
2. The word "compliance" in Operation Condition 14 has been changed to the word "stack" to indicate that stack testing can be performed to obtain operational parameters for the thermal afterburner, but is not required.

Company Name: Sunshine Salvage Inc.
 Plant Location: 1848 Lilac Road, Lapaz, Indiana 46537
 County: Marshall
 Date Received: July 3, 1996
 Permit Reviewer: Frank P. Castelli

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 11.2.1.

** unpaved roads **

** unpaved roads **

1985 International Truck

$$\begin{aligned}
 & 4 \text{ trip/hr} \times \\
 & 0.1 \text{ mile/trip} \times \\
 & 2 \text{ (round trip) } \times \\
 8760 \text{ hr/yr} & = 7008 \text{ miles per year}
 \end{aligned}$$

$$\begin{aligned}
 E_f &= k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365) \\
 &= 2.62 \text{ lb/mile}
 \end{aligned}$$

- where k = 0.8 (particle size multiplier)
- s = 4.8 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 5 miles/hr vehicle speed
- W = 38.5 tons average vehicle weight
- w = 18 wheels

$$\frac{2.62 \text{ lb/mi} \times 7008 \text{ mi/yr}}{2000 \text{ lb/ton}} = 9.18 \text{ tons/yr}$$

1974 Mack Truck

$$\begin{aligned}
 & 1 \text{ trip/hr} \times \\
 & 0.1 \text{ mile/trip} \times \\
 & 2 \text{ (round trip) } \times \\
 8760 \text{ hr/yr} & = 1752 \text{ miles per year}
 \end{aligned}$$

$$\begin{aligned}
 E_f &= k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365) \\
 &= 2.62 \text{ lb/mile}
 \end{aligned}$$

- where k = 0.8 (particle size multiplier)
- s = 4.8 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 5 miles/hr vehicle speed
- W = 38.5 tons average vehicle weight
- w = 18 wheels

$$\frac{2.62 \text{ lb/mi} \times 1752 \text{ mi/yr}}{2000 \text{ lb/ton}} = 2.29 \text{ tons/yr}$$

1974 International

$$\begin{aligned}
 & 6 \text{ trip/hr} \times \\
 & 0.1 \text{ mile/trip} \times \\
 & 2 \text{ (round trip) } \times \\
 8760 \text{ hr/yr} & = 10512 \text{ miles per year}
 \end{aligned}$$

$$\begin{aligned}
 E_f &= k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365) \\
 &= 1.52 \text{ lb/mile} \\
 \text{where } k &= 0.8 \text{ (particle size multiplier)} \\
 s &= 4.8 \text{ \% silt content of unpaved roads} \\
 p &= 125 \text{ days of rain greater than or equal to 0.01 inches} \\
 S &= 5 \text{ miles/hr vehicle speed} \\
 W &= 27.0 \text{ tons average vehicle weight} \\
 w &= 10 \text{ wheels}
 \end{aligned}$$

$$\frac{1.52 \text{ lb/mi} \times 10512 \text{ mi/yr}}{2000 \text{ lb/ton}} = 8.01 \text{ tons/yr}$$

1982 Ford Flatbed

$$\begin{aligned}
 & 1 \text{ trip/hr} \times \\
 & 0.1 \text{ mile/trip} \times \\
 & 2 \text{ (round trip) } \times \\
 8760 \text{ hr/yr} & = 1752 \text{ miles per year}
 \end{aligned}$$

$$\begin{aligned}
 E_f &= k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365) \\
 &= 0.71 \text{ lb/mile} \\
 \text{where } k &= 0.8 \text{ (particle size multiplier)} \\
 s &= 4.8 \text{ \% silt content of unpaved roads} \\
 p &= 125 \text{ days of rain greater than or equal to 0.01 inches} \\
 S &= 5 \text{ miles/hr vehicle speed} \\
 W &= 13.0 \text{ tons average vehicle weight} \\
 w &= 6 \text{ wheels}
 \end{aligned}$$

$$\frac{0.71 \text{ lb/mi} \times 1752 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.62 \text{ tons/yr}$$

Total Before Controls	20.10 tons/yr
After 50% Controls	10.05 tons/yr

Appendix A: Emission Calculations
LPG-Propane - Industrial Boilers
(Heat input capacity: > 10 MMBtu/hr and < 100 MMBtu/hr)

Company Name: Sunshine Salvage Inc.
Address City IN Zip: 1848 Lilac Road, Lapaz, Indiana 46537
CP: 099-6224
Plt ID: 099-00069
Reviewer: Frank P. Castelli
Date: July 3, 1996

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Weight % Sulfur =	<input type="text" value="0.00"/>
<input type="text" value="3.30"/>	<input type="text" value="307.53"/>		

Emission Factor in lb/kgal	Pollutant					
	PM 0.6	PM10 0.6	SO2 0.0 (0.10S)	NOx 19.0	VOC 0.5	CO 3.2
Potential Emission in tons/yr	0.092	0.092	0.000	2.92	0.077	0.492

Methodology

1 gallon of LPG has a heating value of 94,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.094 MMBtu

Emission Factors are from AP42, Fifth Edition (January 1995), Table 1.5-2 (SCC #1-02-010-02)

Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

Secondary Aluminum Processing, Sweating Furnace

Company Name: Sunshine Salvage Inc.
 Address City IN Zip: 1848 Lilac Road, Lapaz, Indiana 46537
 CP: 099-6224
 Plt ID: 099-00069
 Reviewer: Frank P. Castelli
 Date: July 3, 1996

Process	Maximum Throughput			Units	Pollutant				
	(tons/day)	(lbs/hr)	(tons/yr)		PM	PM10	SO2	NOx	VOC
Uncontrolled	9.6	800	3504	Emission Factor (lbs/ton)	14.5	13.3	3.5	0.6	2.4
				Potential Emissions (tons/yr)	25.4	23.3	6.13	1.05	4.20
				Potential Emissions (lbs/day)	139.2	127.7	33.6	5.76	23.0
				Potential Emissions (lbs/hr)	5.80	5.32	1.40	0.240	0.960

Control Efficiency 97.00%

Process	Maximum Throughput			Units	Pollutant				
	(tons/day)	(lbs/hr)	(tons/yr)		PM	PM10	SO2	NOx	VOC
Controlled	9.6	800	3504	Emission Factor (lbs/ton)	14.5	13.3	3.5	0.6	2.4
				Potential Emissions (tons/yr)	0.762	0.699	6.13	1.05	0.126
				Potential Emissions (lbs/day)	4.18	3.83	33.6	5.76	23.0
				Potential Emissions (lbs/hr)	0.174	0.160	1.40	0.240	0.960

Methodology

PM Emission Factors from AP-42 SCC #3-04-001-01

PM10, SO2, NOx, & VOC Uncontrolled Emission Factors from AIRS, EPA-454/R-90-003, SCC #3-04-001-01

Emission (tons/yr) = Throughput (tons/yr) x Emission Factor (lb/Ton processed)/2,000 lb/ton

PM Control with AP-42 Baghouse = (1.0 - (3.3 / 14.5)) (100 %) = 77.2 %