



Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
(800) 451-6027  
www.IN.gov/idem

TO: Interested Parties / Applicant  
DATE: December 02, 2005  
RE: Kemiron Great Lakes, LLC / 089-21908-00489  
FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### Notice of Decision: Approval - 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 requires 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, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar 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;
- (2) the interest of the person making the request;
- (3) 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 considerations 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.

Enclosures  
FN-REGIS.dot 1/10/05



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live.*

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*Mitchell E. Daniels, Jr.*  
Governor

December 02, 2005

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Indianapolis, Indiana 46204  
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*Thomas W. Easterly*  
Commissioner

Mr. Brian Wodetzki  
Kemiron Great Lakes, LLC  
3761 Canal Street  
East Chicago, Indiana 46312

Re: Registered Construction and Operation Status,  
089-21908-00489

Dear Mr. Wodetzki:

The application from Kemiron Great Lakes, LLC, received on October 25, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following Ferrous Chloride ( $\text{FeCl}_2$ ) and Ferric Chloride ( $\text{FeCl}_3$ ) production source, to be located at 3761 Canal Street, East Chicago, Indiana 46312, is classified as registered:

One (1) closed-loop Ferrous Chloride production facility, including the following:

- (1) Tanks No. T310 and T311 for storing hydrochloric acid (HCl), with storage capacities of 20,000 gallons each.
- (2) Tanks No. T101 and T102 for storing Spent Pickle Liquor (SPL), with storage capacities of 100,000 gallons each.
- (3) Scrap metal digesters where  $\text{FeCl}_2$  is produced in a continuous reaction system, using SPL and scrap iron as raw materials.
- (4) Three (3) chlorinators operated in series where reaction of  $\text{FeCl}_2$  and Chlorine produces  $\text{FeCl}_3$ .
- (5) One (1) wet scrubber for scrubbing HCl vapor and hydrogen gas produced, with a control efficiency of 80%.
- (6) One (1) filter press for treating unused scrap iron and carbon, which are then shipped out.
- (7) One (1) 50 MMBtu Natural Gas Boiler, identified as B-01, installed in 2006, exhausting to stack SB-01.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 12 and 40 CFR Part 60, the following New Source Performance Standards are applicable to the source:

The 50 MMBtu Boiler is subject to the requirements of New Source Performance Standards 326 IAC 12, 40 CFR 60.40c through 60.48c, Subpart Dc (Standards of Performance for Small Industrial – Commercial – Institutional Steam Generating Units). Since this unit only combusts natural gas, only section 60.48c Reporting and Recordkeeping requirements apply. 40 CFR 60.48(g) requires that the source record and maintain records of the amounts of each fuel combusted during each day. Pursuant to 40 CFR 60.48(i), records shall be maintained for a period of two years following the date of such record.

- (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, unless otherwise stated in this permit:
  - (a) Opacity shall not exceed an average of twenty percent (20%) 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 6-2-4 (Emission Limitations for facilities specified in 326 IAC 6-2-1(d), Particulate emissions from indirect heating facilities constructed after September 21, 1983 shall be limited by the following equation:

$$P_t = \frac{1.09}{Q^{0.26}}$$

Where

Q = total source heat input capacity (MMBtu/hr)  
P<sub>t</sub> = emission rate limit (lbs/MMBtu)

Therefore, particulate emissions from the 50 mmBtu/hr boiler shall not exceed 0.4 lb/mmBtu heat input.

This registration is the third 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 2-5.5-4(a)(3)). The annual notice shall be submitted to:

**Compliance Data Section  
Office of Air Quality  
100 North Senate Avenue  
Indianapolis, IN 46204-2155**

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:  
Nysa L. James, Section Chief  
Permits Branch  
Office of Air Quality

JF

cc: File - Lake County  
Lake County Health Department  
Air Compliance – Rick Massoels/Ramesh Tejuja  
Northwest Regional Office  
Permit Tracking  
Compliance Data Section

<b>Registration Annual Notification</b>
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This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

<b>Company Name:</b>	<b>Kemiron Great Lakes</b>
<b>Address:</b>	<b>3761 Canal Street,</b>
<b>City:</b>	<b>East Chicago, Indiana 46312</b>
<b>Authorized individual:</b>	<b>Brian E. Wodetzki</b>
<b>Phone #:</b>	<b>(219) 387-2646</b>
<b>Registration #:</b>	<b>089-21908-00489</b>

I hereby certify that Kemiron Great Lakes, LLC is still in operation and is in compliance with the requirements of Registration 089-21908-00489.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

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

Technical Support Document (TSD) for a Registration

Source Background and Description

<b>Source Name:</b>	<b>Kemiron Great Lakes, LLC</b>
<b>Source Location:</b>	<b>3761 Canal Street, East Chicago, Indiana 46312</b>
<b>County:</b>	<b>Lake</b>
<b>SIC Code:</b>	<b>2819</b>
<b>Registration No.:</b>	<b>089-21908-00489</b>
<b>Permit Reviewer:</b>	<b>James Farrell</b>

The Office of Air Quality (OAQ) has reviewed an application from Kemiron Great Lakes, LLC relating to the operation of a Ferrous Chloride ( $\text{FeCl}_2$ ) and Ferric Chloride ( $\text{FeCl}_3$ ) production source.

**History**

Kemiron Great Lakes, LLC was issued an Exempt Construction and Operation Status (089-18494-00489) on February 19, 2004 and reissued an Exemption (089-19023-00489) on July 9, 2004. On October 25, 2005, the Office of Air Quality (OAQ) received an application to add one (1) 50 MMBtu Natural Gas Boiler.

**Existing Emission Units and Pollution Control Equipment**

One (1) closed-loop Ferrous Chloride production facility, including the following:

- (1) Tanks No. T310 and T311 for storing hydrochloric acid (HCl), with storage capacities of 20,000 gallons each.
- (2) Tanks No. T101 and T102 for storing Spent Pickle Liquor (SPL), with storage capacities of 100,000 gallons each.
- (3) Scrap metal digesters where  $\text{FeCl}_2$  is produced in a continuous reaction system, using SPL and scrap iron as raw materials.
- (4) Three (3) chlorinators operated in series where reaction of  $\text{FeCl}_2$  and Chlorine produces  $\text{FeCl}_3$ .
- (5) One (1) wet scrubber for scrubbing HCl vapor and hydrogen gas produced, with a control efficiency of 80%.

- (6) One (1) filter press for treating unused scrap iron and carbon, which are then shipped out.

### **New Emission Units and Pollution Control Equipment**

- (7) One (1) 50 MMBtu Natural Gas Boiler, identified as B-01, installed in 2006, exhausting to stack SB-01.

### **Existing Approvals**

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Exemption 089-18494-00489 issued on February 19, 2004  
(b) Exemption 089-19023-00489 issued on July 9, 2004

All conditions from previous approvals were incorporated into this permit.

### **Justification for the Registration**

Based upon the addition of the 50 MMBtu/hr boiler the previous revised Exemption is no longer below exemption requirements for NOx emissions. A Registration is being issued pursuant to 326 IAC 2-5.5-1(b)(1)(B). The previously issued Exemption letter will be superceded by this Registration.

### **Enforcement Issue**

There are no enforcement actions pending.

### **Stack Summary**

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
SCR-01	HCl Scrubber	60.0	3.0	15,000	120
SB-01	Steam Generation	56.0	3.0	50,000	250

### **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 October 25, 2005.

### **Emission Calculations**

See Appendix A of this document, pages 1-3, for detailed emission calculations.

**Potential to Emit of the Source Before Controls**

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/yr)
PM	0.4
PM-10	1.7
SO <sub>2</sub>	0.1
VOC	1.2
CO	18.4
NO <sub>x</sub>	21.9

HAPs	Potential to Emit (tons/yr)
HCl	2.63
Total	2.63

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than 25 tons per year and the potential to emit of NO<sub>x</sub> is greater than 10 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.
- (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 of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

**County Attainment Status**

The source is located in Lake County.

Pollutant	Status
PM-10	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
1-hour Ozone	Non-Attainment
8-hour Ozone	Non-Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone.

- (1) On January 26, 1996 in 40 CFR 52.777(i), the U.S. EPA granted a waiver of the requirements of Section 182(f) of the CAA for Lake and Porter Counties, including the lower NO<sub>x</sub> threshold for nonattainment new source review. Therefore, VOC emissions alone are considered when evaluating the rule applicability relating to the 1-hour ozone standards. Lake County has been designated as nonattainment in Indiana for the 1-hour ozone standard. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability for the source section.
  - (2) VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for nonattainment new source review.
- (b) Lake County has been classified as attainment or unclassifiable in Indiana 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.

## 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 per year.

## Federal Rule Applicability

- (a) The 50 MMBtu Boiler is subject to the requirements of New Source Performance Standards 326 IAC 12, 40 CFR 60.40c through 60.48c, Subpart Dc (Standards of Performance for Small Industrial – Commercial – Institutional Steam Generating Units). Since this unit only combusts natural gas, only section 60.48c Reporting and Recordkeeping requirements apply. 40 CFR 60.48(g) requires that the source record and maintain records of the amounts of each fuel combusted during each day. Pursuant to 40 CFR 60.48c(i), records shall be maintained for a period of two years following the date of such record.
- (b) The storage tanks at this facility are not subject to the requirements of the New Source Performance Standard, 326 IAC 12 (40 CFR 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, because these tanks do not store any volatile organic liquids.
- (c) This source is not subject to the requirements of the New Source Performance Standard, 326 IAC 12 (40 CFR 60, Subpart Z) – Standards of Performance for Ferroalloy Production Facilities, because it does not have any electric submerged arc furnaces producing ferroalloys.

- (d) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart XXX – Standards for Ferroalloys Production Facilities, because it is not a major source for HAPs.
- (e) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart NNNNN– Standards for Hydrochloric Acid Production, because it does not produce Hydrochloric acid.
- (f) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart DDDDD– Standards for Industrial, Commercial and Institutional Boilers and Process Heaters, because it is not a major source for HAPs.

### **State Rule Applicability – Entire Source**

#### 326 IAC 2-2 (Prevention of Significant Deterioration)

The source, located in Lake County attainment area for all pollutants other than ozone, has potential emissions of all pollutants below 250 tons per year, and it is not one of the twenty-eight (28) listed source categories. Therefore, 326 IAC 2-2 does not apply.

#### 326 IAC 2-3 (Emission Offset)

The source, located in the Lake County nonattainment area for ozone, has potential emissions of less than 25 tons per year of VOC. Therefore, 326 IAC 2-3 does not apply.

#### 326 IAC 2-6 (Emission Reporting)

This source is located in Lake County and the potential to emit of VOC and NOx is less than twenty-five (25) tons per year. Therefore, 326 IAC 2-6 does not apply.

#### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this ferrous chloride and ferric chloride production facility will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

#### 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 the permit:

- (a) Opacity shall not exceed an average of twenty percent (20%) 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 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 6-2-4 (Emission limitations for facilities specified in 326 IAC 6-2-1(d))

Pursuant to 326 IAC 6-2-4(a), particulate emissions from indirect heating facilities constructed after September 21, 2983 shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input.  
Q = Total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operating permit shall be used.

Therefore, particulate emissions from the 50 mmBtu/hr boiler shall not exceed 0.4 lb/mmBtu heat input. Based on the emissions calculations the source is in compliance with this rule.

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

Pursuant to 6-3-1(b)(1), the boiler is exempt from the requirements of 6-3-1 because it uses combustion for indirect heating.

#### 326 IAC 6-3-2 (Particulate emission limitations)

The emission units at this source have negligible Particulate emissions. Therefore, the requirements of 326 IAC 6-3-2 do not apply.

#### 326 IAC 8-7-1 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)

This source is located in Lake County, and the potential to emit of VOC is less than twenty-five (25) tons per year. Therefore, 326 IAC 8-7-1 does not apply.

#### 326 IAC 8-9-1 (Volatile Organic Liquid Storage Vessels)

The storage tanks at this source are not used to store organic liquids. Therefore, 326 IAC 8-9-1 does not apply.

#### 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements)

The potential VOC emissions from the emission units at this source are less than 25 tons per year. Therefore, 326 IAC 8-1-6 does not apply.

### Conclusion

The operation of this Ferrous Chloride (FeCl<sub>2</sub>) and Ferric Chloride (FeCl<sub>3</sub>) production source shall be subject to the conditions of the Registration 089-21908-00489.

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

**Company Name: Kemiron Great Lakes, LLC**  
**Address City IN Zip: 3761 Canal Street**  
**Permit Number: 21908**  
**Pit ID: 089-00489**  
**Reviewer: James Farrell**  
**Date: 14-Nov-05**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

50.0

438.0

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.4	1.7	0.1	21.9	1.2	18.4

\*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

gasc99.xls 9/95

See page 2 for HAPs emissions calculations.

updated 4/99

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

**Company Name: Kemiron Great Lakes, LLC**  
**Address City IN Zip: 3761 Canal Street**  
**Permit Number: 21908**  
**Plt ID: 089-00489**  
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**Date: 14-Nov-05**

	HAPs - Organics				
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.599E-04	2.628E-04	1.643E-02	3.942E-01	7.446E-04

	HAPs - Metals				
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.095E-04	2.409E-04	3.066E-04	8.322E-05	4.599E-04

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.

## HCL Emission Calculations:

The source previously submitted the following emissions calculations.

The emissions estimates are based on actual tests conducted on the HCl scrubber exhaust at a similar Kemiron facility located in California.

Flow Rate = 5000 cubic-ft/min  
Emissions of HCl = 0.2 lb/hr  
Emissions of Chlorine = Negligible

The flow rate of the scrubber in Indiana facility = 15,000 cubic-ft/min  
Therefore, estimated emissions of HCl = 0.6 lb/hr

$$= 0.6 \text{ lb/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lb} = \mathbf{2.63 \text{ tpy}}$$