IA

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IMAGE

3910

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RENAPP

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INTERNATIONAL CRANKSHAFT INC.
IATF 16949 and ISO 14001 Certified

101 Carley Court
Georgetown, KY 40324

Phone: 502-868-0003
Fax: 502-868-0069

RECEIVED
OCT 27 2021
Permit Review Branch
Division for Air Quality

CERTIFIED MAIL

October 25, 2021

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Permit Support Section Permit Review Branch
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

Reference: Application for Conditional Major Permit Renewal
International Crankshaft Inc., Georgetown, Kentucky
Source ID: 21-209-00039, Permit Number: F-16-076

Dear Sir or Madam:

Pursuant to the requirements of 401 KAR 52:030, International Crankshaft Inc. (ICI) is submitting the enclosed conditional major permit renewal application for our Georgetown, Kentucky Plant. The current conditional major permit is due to expire on April 30, 2022 and a complete renewal application is required to be submitted at least six months prior to the expiration date of the permit. This letter outlines key elements of our permit renewal application.

LINE 4 ADDITIONAL INSPECTION LINE

Forging Line 4 was expanded to include a 3rd parallel inspection line (Inspection Line C) in 2020 to allow Line 4 to continue processing parts during periods of slow down on one or more of the inspection lines due to parts that need additional grinding or repair. The addition of Inspection Line C did not result in an increase in throughput capacity for Line 4. Shot Blaster (EP 04-04), which was previously planned to be installed in the Finishing and Mini Inspection Area, will now be installed in Inspection Line C.

DIE SHOP SHOT BLASTER REPLACEMENT

The Die Making Line Shot Blast Machine is planned to be replaced with a unit that has the same maximum throughput capacity. The potential emissions from this new shot blast machine will be identical to the previous unit. The associated dust collector will also be replaced.

LINE 1 AND LINE 2 WET SCRUBBERS REPLACEMENT

The wet scrubbers associated with Lines 1 and 2 are planned for replacement in the fourth quarter 2021. The new scrubbers will have increased flow rates for housekeeping improvement. Please note the application has been revised to reflect the increased flow rates.

INTERNATIONAL CRANKSHAFT INC.

INSIGNIFICANT ACTIVITIES UPDATE

A new warehouse was constructed in 2019 which included the addition of multiple make-up air heaters and space heaters. This included the addition of one natural gas fired make-up air heater with a capacity of 6.2 MMBtu/hr. The potential emissions of all regulated air pollutants and hazardous air pollutants (HAPs) associated with the 6.2 MMBtu/hr heater are below the thresholds in the Kentucky Division for Air Quality (KDAQ) Insignificant Activities document. The rest of the heaters in the new warehouse are electric. Additionally, an electric nitride furnace is planned for installation in the Die Shop in 2022. There are no emissions of regulated air pollutants or HAPs associated with any of the electric heating equipment.

APPLICATION CONTENTS

Included with this application are potential emission calculations, process flow diagrams, a site map, and the following required application forms:

- DEP7007AI – Administrative Information
- DEP7007B – Manufacturing or Processing Operations
- DEP7007N – Source Emissions Profile
- DEP7007V – Applicable Requirements and Compliance Activities
- DEP7007DD – Insignificant Activities

We thank you in advance for your consideration in processing our application. Please do not hesitate to contact me at eugiem@icicrank.com or (502) 868-0003, extension 151 should you have any questions or need further information.

Sincerely,
INTERNATIONAL CRANKSHAFT INC.

Eugie Mintu
Senior Plant Engineering Manager

Enclosures: Permit Application – 1 original and 2 copies

cc: Brad Goll, Optim Environmental Resources, Inc.

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

RECEIVED
OCT 27 2021
Permit Review Branch
Division for Air Quality

Source Name: **International Crankshaft, Inc.**

KY EIS (AFS) #: **21- 209-00039**

Permit #: **F-16-076**

Agency Interest (AI) ID: **3910**

Date: **10/25/2021**

Section AI.1: Source Information

Physical Location Address:	**Street:**	101 Carley Court				
	City:	Georgetown	**County:**	Scott	**Zip Code:**	40324
Mailing Address:	**Street or P.O. Box:**	101 Carley Court				
	City:	Georgetown	**State:**	Kentucky	**Zip Code:**	40324

Standard Coordinates for Source Physical Location

Longitude: 38.200000 (decimal degrees) **Latitude:** -84.544444 (decimal degrees)

Primary (NAICS) Category: Iron and Steel Forging **Primary NAICS #:** 332111

Classification (SIC) Category: Metal Stamping and Forging **Primary SIC #:** 3462

Briefly discuss the type of business conducted at this site: Stamping and forging of automotive crankshafts.

Description of Area Surrounding Source: ☐ Rural Area ☐ Industrial Park ☐ Residential Area ☐ Urban Area ☑ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 300

Approximate distance to nearest residence or commercial property: *500 ft*

Property Area: **25.88 acres**

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: International Crankshaft, Inc.

Title: (if individual)

Mailing Address:
Street or P.O. Box: 101 Carley Court
City: Georgetown **State:** Kentucky **Zip Code:** 40324

Email: (if individual)

Phone: (502) 868-0003

Technical Contact

Name: Eugie Mintu

Title: Senior Plant Engineering Manager

Mailing Address:
Street or P.O. Box: 101 Carley Court
City: Georgetown **State:** Kentucky **Zip Code:** 40324

Email: eugiem@icicrank.com

Phone: (502) 868-0003

Air Permit Contact for Source

Name: Eugie Mintu

Title: Senior Plant Engineering Manager

Mailing Address:
Street or P.O. Box: 101 Carley Court
City: Georgetown **State:** Kentucky **Zip Code:** 40324

Email: eugiem@icicrank.com

Phone: (502) 868-0003

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name:

Title:

Mailing Address: **Street or P.O. Box:**

City: **State:** **Zip Code:**

Email:

Phone:

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
Nippon Steel Crankshaft Management	80%
Sumitomo Corporation (Japan)	11%
Sumitomo Corporation of Americas	9%

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change ☐ Initial Registration ☐ Significant Revision ☐ Administrative Permit Amendment
☑ Renewal Permit ☐ Revised Registration ☐ Minor Revision ☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change ☐ Extension Request ☐ Addition of New Facility ☐ Portable Plant Relocation Notice
☐ Revision ☐ Off Permit Change ☐ Landfill Alternate Compliance Submittal ☐ Modification of Existing Facilities
☐ Ownership Change ☐ Closure

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☐ Yes ☑ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☐ Single HAP	
☐ Volatile Organic Compounds (VOC)		☐ Combined HAPs	
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☑ **Yes** ☐ **No**

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- [ ] DEP7007A Indirect Heat Exchangers and Turbines
- [x] DEP7007B Manufacturing or Processing Operations
- [ ] DEP7007C Incinerators and Waste Burners
- [ ] DEP7007F Episode Standby Plan
- [ ] DEP7007J Volatile Liquid Storage
- [ ] DEP7007K Surface Coating or Printing Operations
- [ ] DEP7007L Mineral Processes
- [ ] DEP7007M Metal Cleaning Degreasers
- [x] DEP7007N Source Emissions Profile
- [ ] DEP7007P Perchloroethylene Dry Cleaning Systems
- [ ] DEP7007R Emission Offset Credit
- [ ] DEP7007S Service Stations
- [ ] DEP7007T Metal Plating and Surface Treatment Operations
- [x] DEP7007V Applicable Requirements and Compliance Activities
- [ ] DEP7007Y Good Engineering Practice and Stack Height Determination
- [ ] DEP7007AA Compliance Schedule for Non-complying Emission Units
- [ ] DEP7007BB Certified Progress Report
- [ ] DEP7007CC Compliance Certification
- [x] DEP7007DD Insignificant Activities
- [ ] DEP7007EE Internal Combustion Engines
- [ ] DEP7007FF Secondary Aluminum Processing
- [ ] DEP7007GG Control Equipment
- [ ] DEP7007HH Haul Roads
- [ ] Confidentiality Claim
- [ ] Ownership Change Form
- [x] Secretary of State Certificate
- [x] Flowcharts or diagrams depicting process
- [ ] Digital Line Graphs (DLG) files of buldings, roads, etc.
- [x] Site Map
- [ ] Map or drawing depicting location of facility
- [ ] Safety Data Sheet (SDS)
- [ ] Emergency Response Plan
- [x] Other: Emission Calculation Sheets

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

H. Andatsu	10/25/2021
Authorized Signature	**Date**
Hiroaki Andatsu	President
Type or Printed Name of Signatory	**Title of Signatory**

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

FIGURE 3
INTERNATIONAL CRANKSHAFT, INC.
SITE LAYOUT MAP
GEORGETOWN, KENTUCKY

- POTW MANHOLE #1
- FLOW DIRECTION
- UNDERGROUND STORM PIPES
- STORM DRAINAGE TRENCH
- (P) PETROLEUM PRODUCT
- CONTAINMENT PIT
- SECURITY LIGHT
- STORM WATER TREATMENT
- STORM WATER OUTFALL
- STORM DRAIN

Note 1: There are four 500 gallon portable hydraulic oil totes that are used as needed around the facility, but are stored in the Oil Storage Room.
Note 2: There may be as many as ten 55 gallon portable petroleum product drums and eight 500 gallon portable petroleum products totes that are used as needed around the facility. When not in use, they are stored in the Oil Storage Room.

Site Layout Map
International Crankshaft, Inc.
Oil Filled Equipment, Transformers & Tanks

Section	Tank Description	Vol (Gal)	Location	Tank ID
Utility (Outdoor)	H1 1 Transformer	700	N	1
	H1 2 Transformer	830	N	2
	H1 3 Transformer	955	N	3
	USS 12 Transformer	992	N	4
Oil Storage Room (Building 1)	Hydraulic Oil Tank 1	1,000	P	5
	Hydraulic Oil Tank 2	1,000	P	6
	Hydraulic Oil Tank 3	1,000	P	P3
	Portable Hydraulic Oil Totes1	330 x 4	P	P1
	Portable Grease Tote	377	P	P2
	Portable Petroleum Products Drums2	55 x 10	P	P3
	Portable Petroleum Products Totes2	300 x 8	P	P4
Line 1 (Building 1)	Load Table Hydraulic Unit	85	I	7
	Conveyor Hydraulic Unit	520	B	8
	Inspection Hydraulic Unit	141	C	9
	Twister Press	1,400	E	10
	Induction Heater Transformer 1	605	R	11
	Induction Heater Transformer 2	605	R	12
	Portable Grease Tote	377 x 2	D	P5
Line 2 (Building 1)	Load Table Hydraulic Unit	85	G	13
	Conveyor Hydraulic Unit	780	F	14
	Inspection Hydraulic Unit	141	Q	15
	Twister Press	1,400	H	16
	Induction Heater Transformer 1	605	S	17
	Induction Heater Transformer 2	605	S	18
	Portable Grease Tote	377 x 2	G	P6
Line 3 (Building 1)	Load Table Hydraulic Unit	85	J	19
	IH Rabbit Feeder	400	U	20
	Twister Press Hydraulic Unit	1,052	K	21
	Coil Press Hydraulic Unit	155	V	22
	Main Press Lubrication	158	L	23
	Main Press Hydraulic Unit	131	L	24
	Die Clamp & Bolster Clamps Hydraulic Unit	105	L	25
	Bolster Flipper Hydraulic Unit	171	W	26
	Induction Heater Transformer 1	871	T	27
	Induction Heater Transformer 2	605	T	28
	Induction Heater Transformer 3	605	T	29
	Grease Drum	55	M	30
Line 4 (Building 2)	Load Table Hydraulic Unit	128	AA	43
	IH Rabbit Feeder	422	BB	44
	Bolster Flipper Hydraulic Unit	210	CC	45
	MP1 Transformer	911	EE	46
	MP2 Transformer	608	EE	47
	MP3 Transformer	608	EE	48
	USS 10 Transformer	697	FF	49
	Coil Press Hydraulic Unit	413	DD	50
Line 4 Hydraulic Room (Building 2)	Die Clamp & Bolster Clamps Hydraulic Unit	67	GG	51
	Main Press Hydraulic Unit	154	GG	52
	Main Press Lubrication	628	GG	53
	Grease Drum	55	GG	54
Die Shop (Building 1)	Roughler EDM Oil Tank	750	A	31
	Finisher EDM Oil Tank	506	A	32
	Portable Oil Drums	55 x 9	A	P7
Waste Water Treatment Room (Building 1)	Waste Water/Oil Pre-Treatment Tank	5,950	WWT	33
	Waste Water/Oil Treatment Tank 1	15,000	WWT	34
	Waste Water/Oil Treatment Tank 2	15,000	WWT	35
	Waste Water/Oil Treatment Tank 3	15,000	WWT	36
	Waste Water/Oil Treatment Tank 4	15,000	WWT	37
	Waste Water/Oil Treatment Tank 5	15,000	WWT	38
	Waste Water/Oil Treatment Tank 6	15,000	WWT	39
	Waste Water/Oil Treatment Tank 7	15,000	WWT	40
	Oil/Water Separator	10,000	WWT	41
	Waste Oil Tank	2,000	WWT	42
	Used Oil Tote	300	WWT	P8
Air Compressor Room (Building 1)	Portable Oil Drums	55 x 3	ACR	P9

Commonwealth of Kentucky
Michael G. Adams, Secretary of State

Michael G. Adams
Secretary of State
P. O. Box 718
Frankfort, KY 40602-0718
(502) 564-3490
http://www.sos.ky.gov

Certificate of Authorization

Authentication number: 256344
Visit https://web.sos.ky.gov/ftshow/certvalidate.aspx to authenticate this certificate.

I, Michael G. Adams, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

INTERNATIONAL CRANKSHAFT INC.

, a corporation organized under the laws of the state of Delaware, is authorized to transact business in the Commonwealth of Kentucky, and received the authority to transact business in Kentucky on February 27, 1990.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that an application for certificate of withdrawal has not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 18th day of October, 2021, in the 230th year of the Commonwealth.

Michael G. Adams

Michael G. Adams
Secretary of State
Commonwealth of Kentucky
256344/0269666

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007B

Manufacturing or Processing Operations

___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: International Crankshaft, Inc.
KY EIS (AFS) #: 21- 209-00039
Permit #: F-16-076
Agency Interest (AI) ID: 3910
Date: 10/15/2021

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours *(if applicable)*	Hours per Batch *(if applicable)*
Group I EU 1	Die Making Line	The emission point consists of five electrostatic discharge machines used to mill graphite, fabricate new dies or re-work used dies. EDM oil used as medium for EDMs.	01-03	Rougher EDMs	Mitsubishi	J Series	4/1991 Modification 2007	Continuous		
Group II EU 1	Die Making Line	The emission point is a shot blaster used for scale removal on reworked die blocks.	01-04	Die Making Shot Blast Machine	Wheelabrator	TAM-84-2-15	4/1991 Replacement planned for 2022	Continuous		
Group I EU 2	Line #1 Die Forging	The emission point is the main die forging press. A graphite lubricant is used to protect the dies.	02-02	Line 1 - Main Press	Ajax	6,000 Ton Main Press	04/1991	Continuous		
Group II EU 2	Line #1 Die Forging	The emission point is a shot blaster used for scale removal on forged parts.	02-04	Line 1 - Shot Blast Machine	Sinto	SB10	04/1991	Continuous		
Group I EU 3	Line #2 Die Forging	The emission point is the main die forging press. A graphite lubricant is used to protect the dies.	03-04	Line 2 - Main Press	Ajax	7,000 Ton Main Press	09/1996	Continuous		

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours *(if applicable)*	Hours per Batch *(if applicable)*
Group II EU 3	Line #2 Die Forging	The emission point is a shot blaster used for scale removal on forged parts.	03-05	Line 2 - Shot Blast Machine	Sinto	SB10	09/1996	Continuous		
Group II EU 4	Finishing & Inspection Process	The emission point is a shot blaster used for scale removal on forged parts in the Finishing and Mini Inspection area.	04-03	Finishing and Mini Inspection - Tumbler Shot Blaster 1	Sintokogio Supertum	Tumbler Shot Blast Machine, Model SB40A	05/2006	Continuous		
		The emission point is a shot blaster used for scale removal on forged parts in Line #4.	04-04	Line 4 - Tumbler Shot Blaster	Sintokogio Supertum	Shot Blast Machine, Model SB40A or equivalent	04/2017	Continuous		
Group I EU 5	Line #3 Die Forging	This emission point is the actual die forging component of emission unit 05, not including billet sawing.	05-01B	Line 3 - Die Forging Process (excluding billet sawing)	Sumitomo Heavy Industries	5,000 Ton Mechanical 4-Stage Press	03/2007	Continuous		
		The emission point is the main die forging press. A graphite lubricant is used to protect the dies.	05-02	Line 3 - 5,000 Ton Main/Trim Press	Sumitomo Heavy Industries	5,000 Ton Mechanical 4-Stage Press	03/2007	Continuous		
Group II EU 5	Line #3 Die Forging	The emission point is a shot blaster used for scale removal on forged parts.	05-04	Line 3 - Shot Blast Machine	Sinto	SNT0MZ	10/2007	Continuous		
Group I EU 6	Line #4 Die Forging	This emission point is the actual die forging component of emission unit 06, not including billet sawing.	06-01B	Line 4 - Die Forging Process (excluding billet sawing)	Sumitomo Heavy Industries	5,000 Ton Mechanical 4-Stage press	01/2015	Continuous		
		The emission point is the main die forging press. A graphite lubricant is used to protect the dies.	06-02	Line 4 - 5,000 Ton Main/Trim Press	Sumitomo Heavy Industries	5,000 Ton Main Press	01/2015	Continuous		
Group II EU 6	Line #4 Die Forging	The emission point is a shot blaster used for scale removal on forged parts.	06-04	Line 4 - Shot Blast Machine	Sinto	SNT0MZ	01/2015	Continuous		

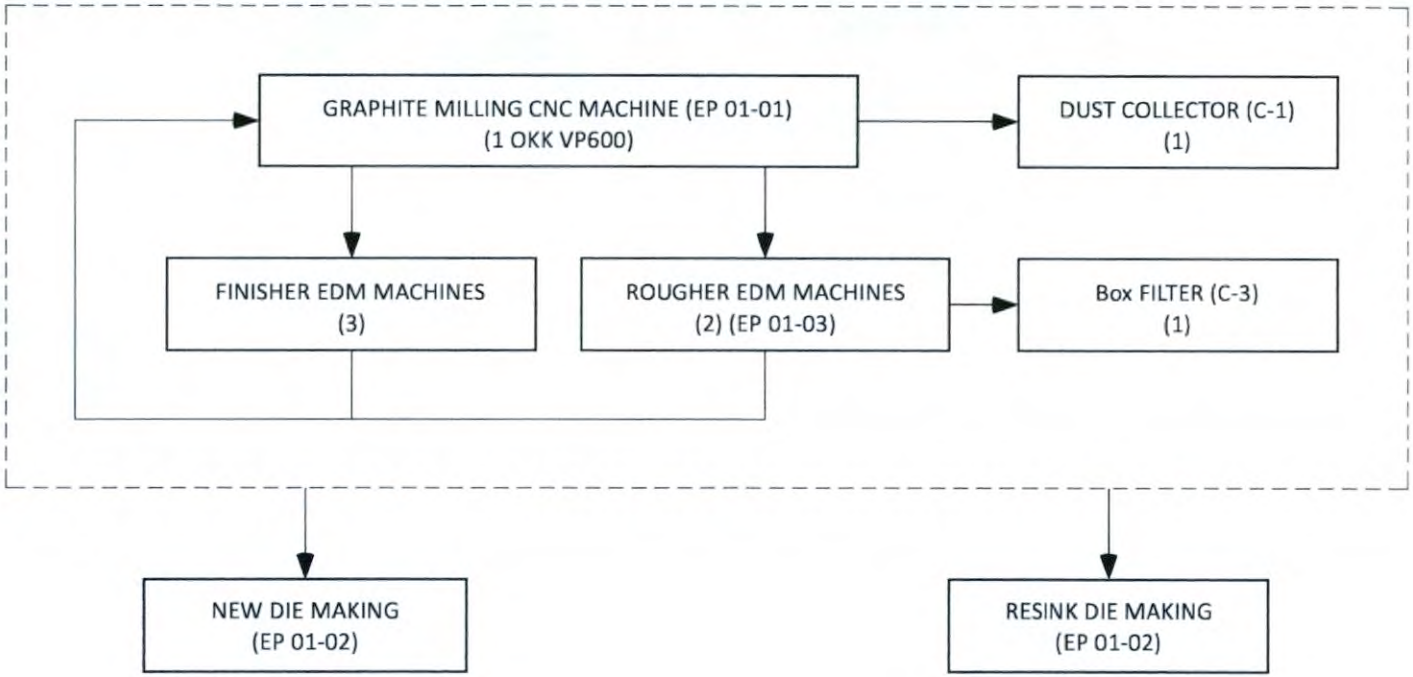
Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
Group I EU 1	Die Making Line	Die Blocks	0.87	ton/hr	0.87	Dies used in forging operations	0.87	ton/hr							
		EDM Oil	8.00	lb/hr	4.00E-03	Oil used as medium for EDMs	8.00	lb/hr							
Group II EU 1	Die Making Line	Steel Shot	14.60	lb/hr	7.30E-03	Scale Removal of reworked die blocks	14.60	lb/hr							
Group I EU 2	Line #1 Die Forging	Graphite Lubricant	120	lb/hr	0.06	Forged crankshafts	120	lb/hr							
		Steel Billets	9.36	tons/hr	9.36		9.36	tons/hr							
Group II EU 2	Line #1 Die Forging	Steel Shot	50.40	lb/hr	0.025	Scale removal of forged parts	50.40	lb/hr							
Group I EU 3	Line #2 Die Forging	Graphite Lubricant	100	lb/hr	0.05	Forged crankshafts	100	lb/hr							
		Steel Billets	7.80	tons/hr	7.80		7.80	tons/hr							
Group II EU 3	Line #2 Die Forging	Steel Shot	41.70	lb/hr	0.021	Scale removal of forged parts	41.70	lb/hr							
Group II EU 4	Finishing & Inspection Process	Steel Shot	50.00	lb/hr	0.025	Scale removal of forged parts in Finishing and Mini Inspection Area	50.00	lb/hr							
		Steel Shot	50.00	lb/hr	0.025	Scale removal of forged parts in Finishing and Mini Inspection Area	50.00	lb/hr							

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
Group I EU 5	Line #3 Die Forging	Steel Billets	20.80	tons/hr	20.80	Forged crankshafts	20.80	tons/hr							
		Graphite Lubricant	266	lb/hr	0.133		266	lb/hr							
Group II EU 5	Line #3 Die Forging	Steel Shot	112	lb/hr	0.056	Scale removal of forged parts	112	lb/hr							
Group I EU 6	Line #4 Die Forging	Steel Billets	22.02	tons/hr	22.02	Forged crankshafts	22.02	tons/hr							
		Graphite Lubricant	0.141	ton/hr	0.141		0.141	ton/hr							
Group II EU 6	Line #4 Die Forging	Steel Shot	0.059	ton/hr	0.059	Scale removal of forged parts	0.059	ton/hr							

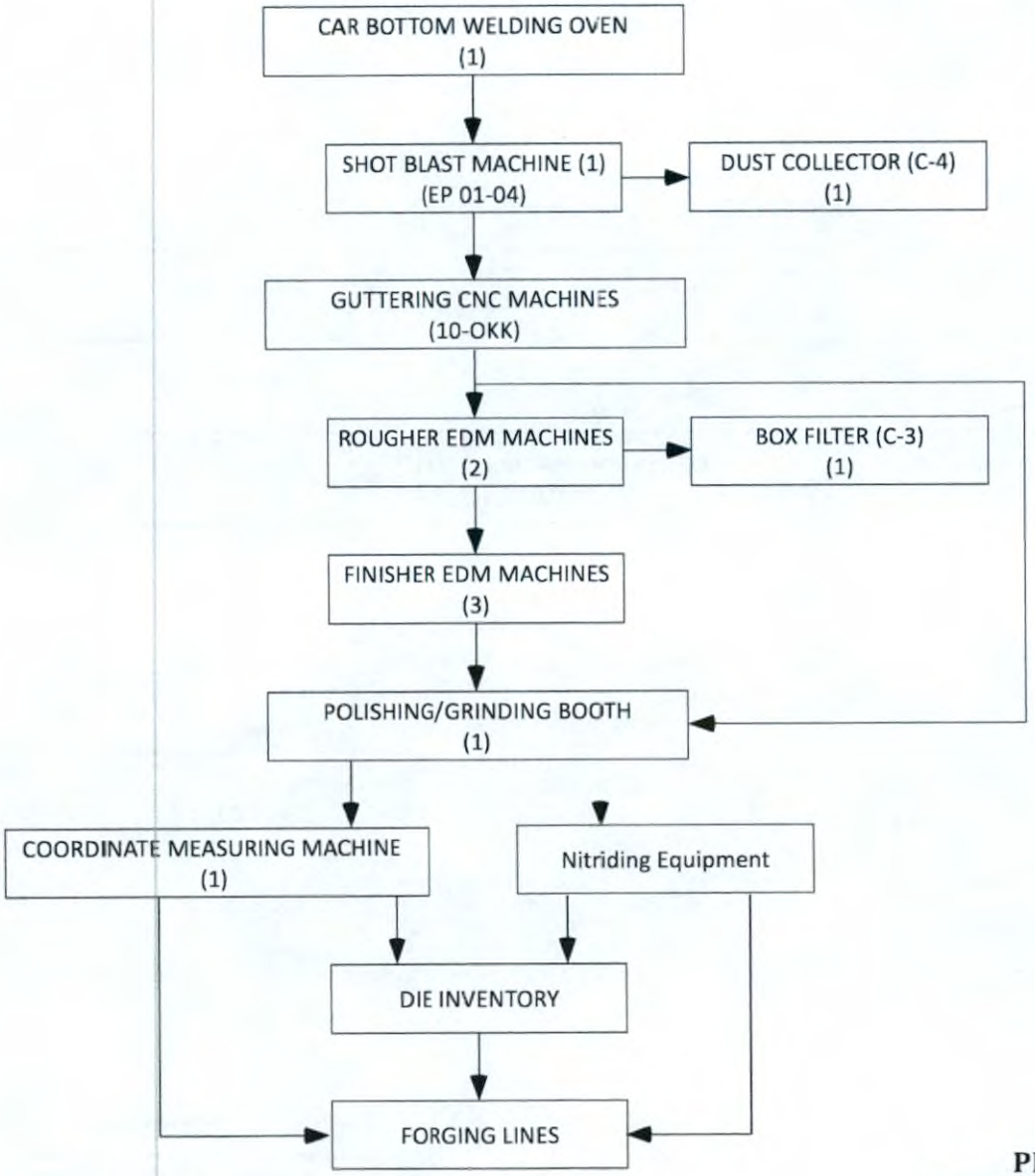
Section B.3: Notes, Comments, and Explanations



Note: Finisher & Rougher EDM Machines also used by Resink Die Making Operation and New Die Making Operation

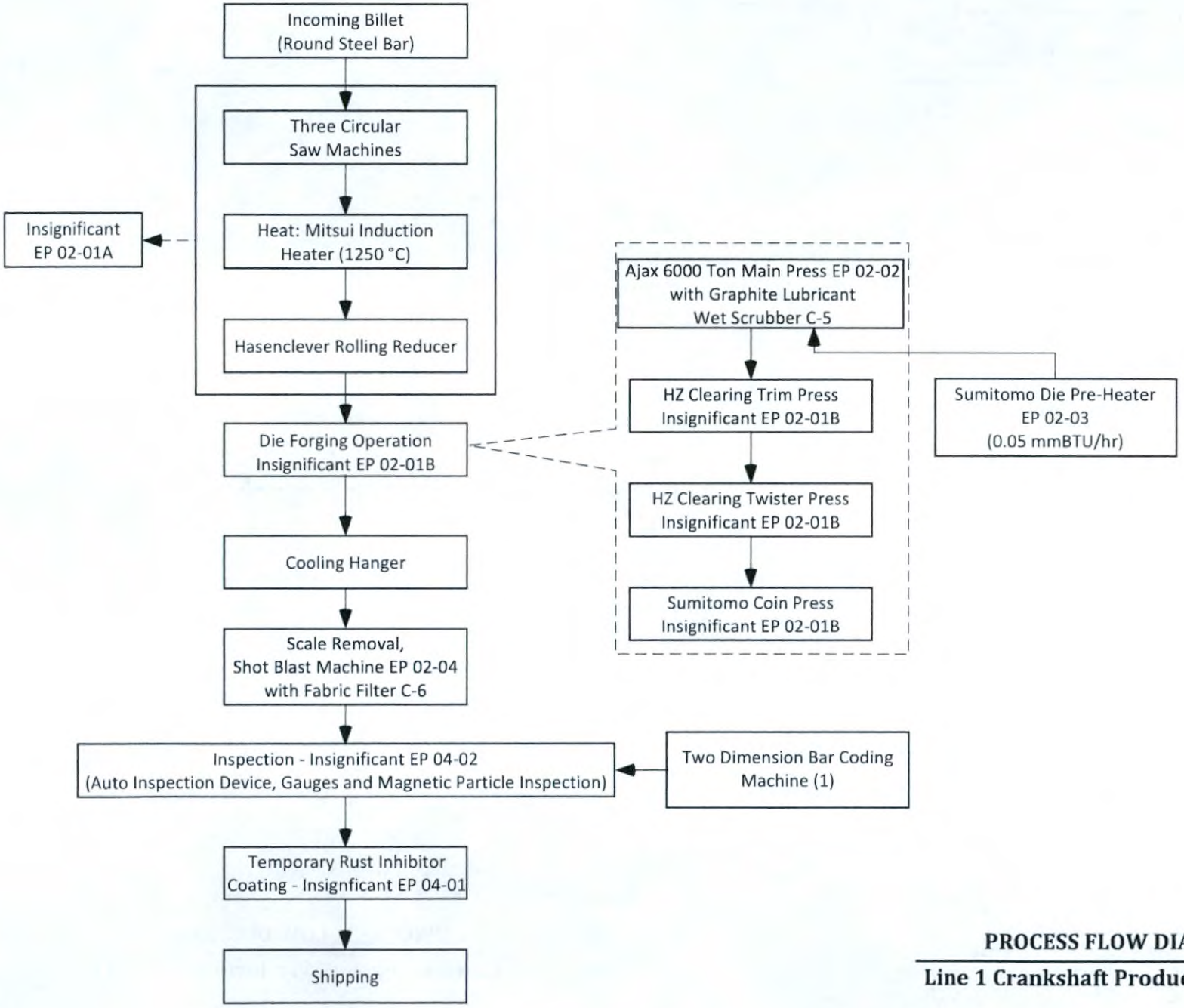
PROCESS FLOW DIAGRAM

Graphite Milling Operation (EP 01-01)
(Die Making Tooling Preparation)



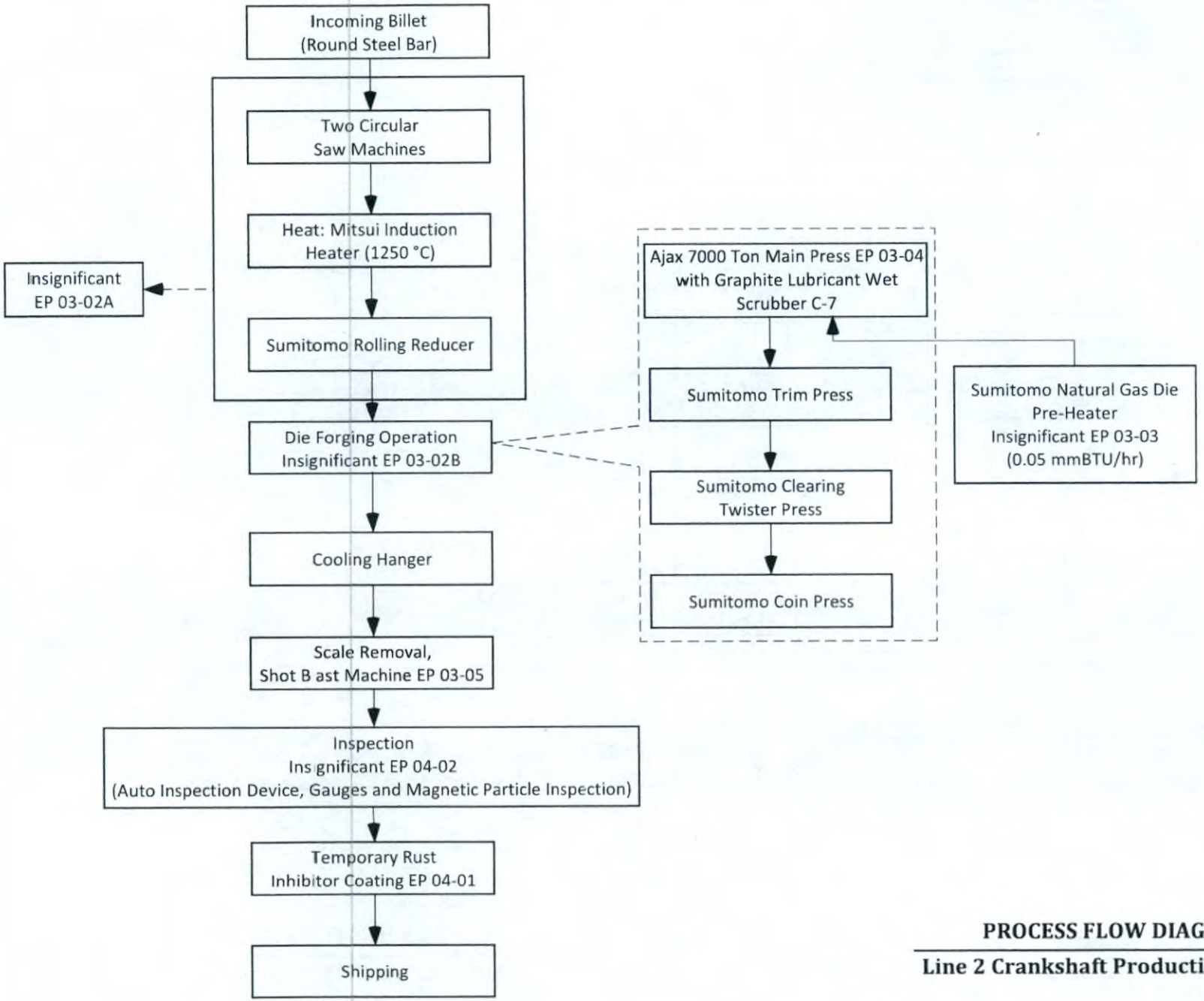
PROCESS FLOW DIAGRAM

Resink Die Making Operation (EP 01-02)



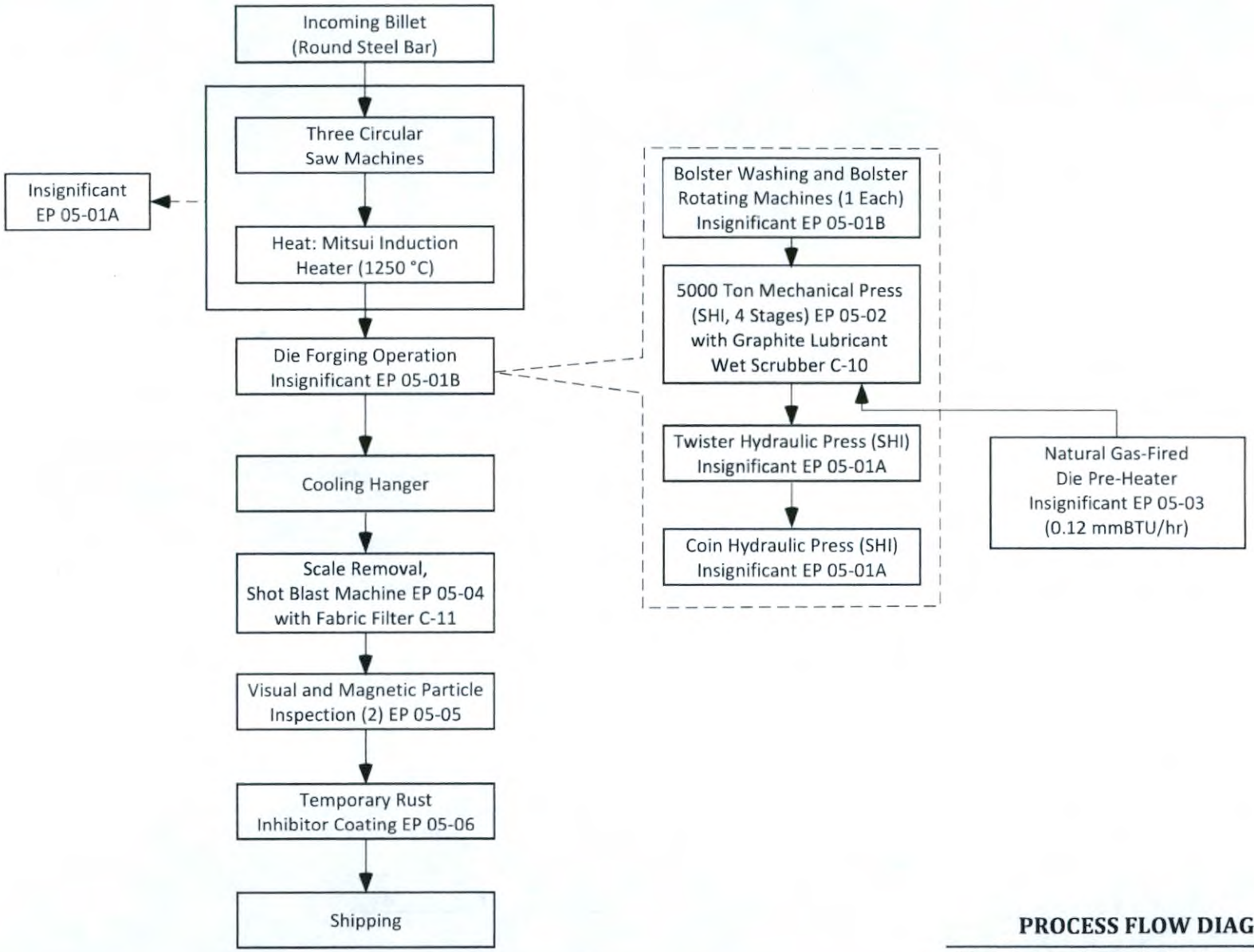
PROCESS FLOW DIAGRAM

Line 1 Crankshaft Production Process



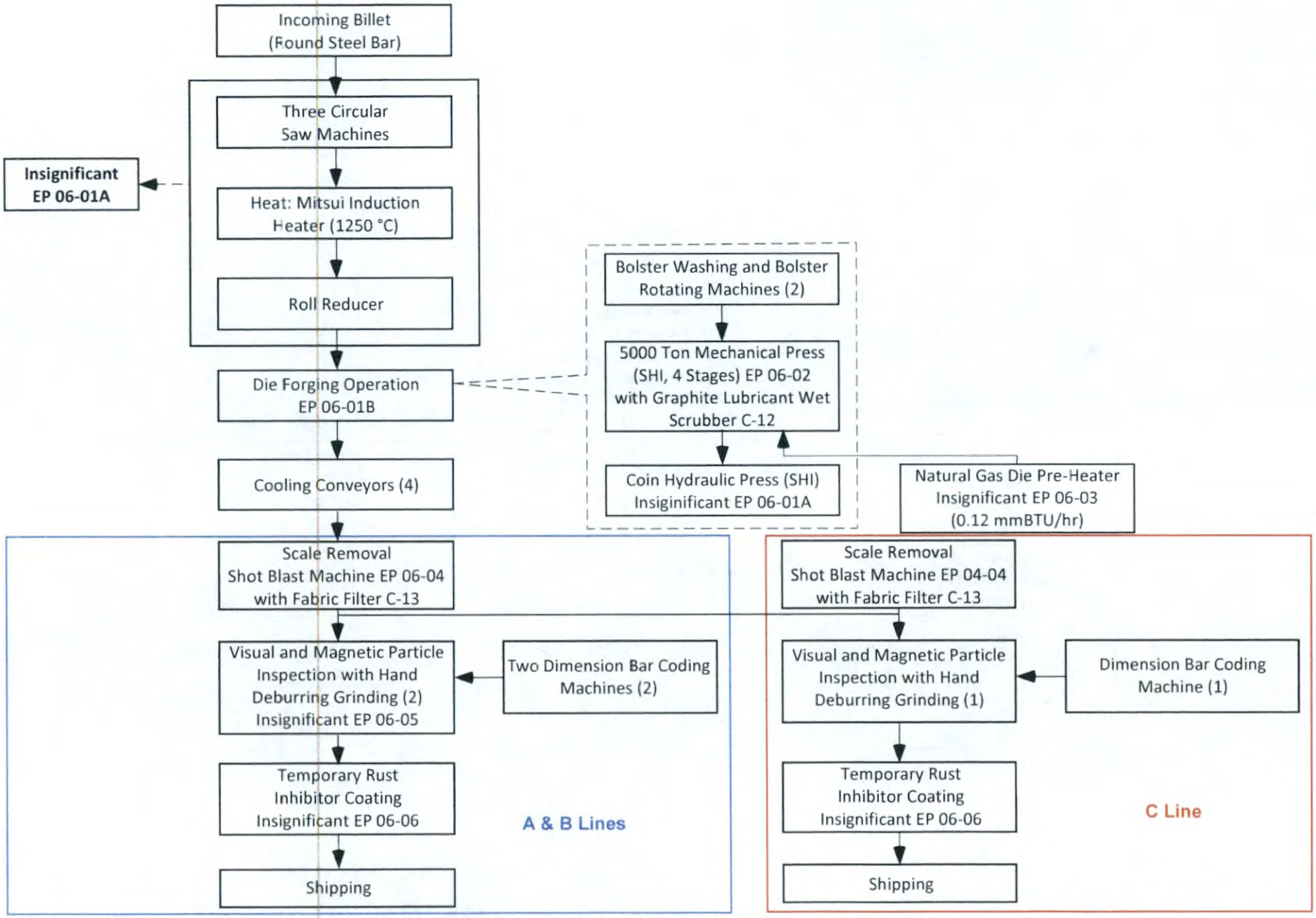
PROCESS FLOW DIAGRAM

Line 2 Crankshaft Production Process



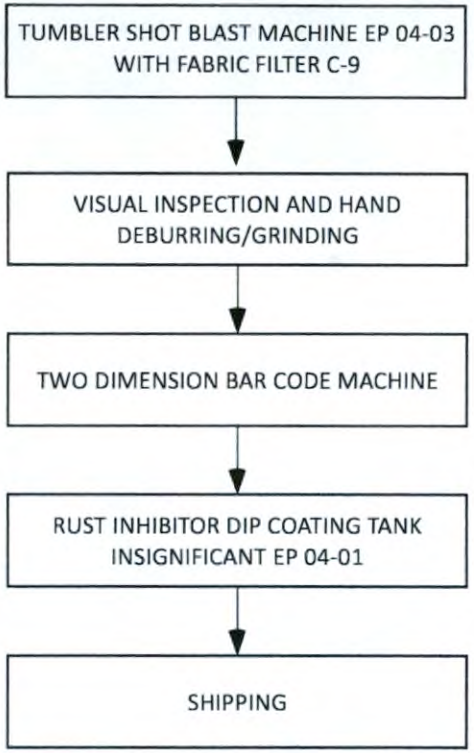
PROCESS FLOW DIAGRAM

Line 3 Crankshaft Production Process



PROCESS FLOW DIAGRAM

Line 4 Crankshaft Production Process



PROCESS FLOW DIAGRAM

Inspection Area

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Informatioı
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation
___ Complete DEP7007AI

Source Name: International Crankshaft, Inc.
KY EIS (AFS) #: 21- 209-00039
Permit #: F-16-076
Agency Interest (AI) ID: 3910
Date: 10/15/2021

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
Group I EU 1	Die Making Line	01-03	Rougher EDMs	EDM Box Filter	0103BF	N/A	0.87 ton/hr (Die Blocks) 0.004 ton/hr (EDM Oil)	See attached emission calculations.								
Group II EU 1	Die Making Line	01-04	Die Making Shot Blast Machine	Die Making Shot Blast Filter	01-04	N/A	0.007 ton/hr									
Group I EU 2	Line #1 Die Forging	02-02	Line 1 - Main Press	Line 1 Main Press Wet Scrubber	0202WS	0202	0.060 ton/hr (Graphite Lubricant) 9.360 ton/hr (Steel Billets)									
Group II EU 2	Line #1 Die Forging	02-04	Line 1 - Shot Blast Machine	Line 1 Shinto Shot Blast Filter	02-04	N/A	0.025 ton/hr									
Group I EU 3	Line #2 Die Forging	03-04	Line 2 - Main Press	Line 2 Main Press Wet Scrubber	0304WS	0304	0.050 ton/hr (Graphite Lubricant) 7.800 (Steel Billets)									

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
Group II EU 3	Line #2 Die Forging	03-05	Line 2 - Shot Blast Machine	Line 2 Shot Blast Filter	03-05	N/A	0.021 ton/hr	See attached emission calculations.								
Group II EU 4	Finishing & Inspection Process	04-03	Finishing and Mini Inspection - Tumbler Shot Blaster 1	Inspection Area - Tumbler Shot Blast Filter	04-03	N/A	0.025 ton/hr									
		04-04	Line 4 - Tumbler Shot Blaster	Line 4 - Tumbler Shot Blast Filter	04-04	N/A	0.025 ton/hr									
Group I EU 5	Line #3 Die Forging	05-01B	Line 3 - Die Forging Process (excluding billet sawing)	N/A	N/A	N/A	20.80 ton/hr (Steel Billets)									
		05-02	Line 3 - 5,000 Ton Main/Trim Press	Line 3 Main Pess Process Scrubber	0502WS	0502	0.133 ton/hr (Graphite Lubricant)									
Group II EU 5	Line #3 Die Forging	05-04	Line 3 - Shot Blast Machine	Line 3 Shot Blast Filter	0505FF	N/A	0.056 ton/hr									
Group I EU 6	Line #4 Die Forging	06-01B	Line 4 - Die Forging Process (excluding billet sawing)	N/A	N/A	N/A	22.02 ton/hr (Steel Billets)									
		06-02	Line 4 - 5,000 Ton Main/Trim Press	Line 4 Main Press Process Scrubber	0602WS	0602	0.141 ton/hr (Graphite Lubricant)									
Group II EU 6	Line #4 Die Forging	06-04	Line 4 - Shot Blast Machine	Line 4 Shot Blast Filter	0604FF	N/A	0.059 ton/hr									

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(°F)*	Exit Velocity *(ft/sec)*
0202	Line 1 Die Forging (02-02), Line 1 Main Press Wet Scrubber (0202WS)	2	35	920	16S 715,027	4,230,669	16,000	68	84.88
0304	Line 2 Die Forging (03-04), Line 2 Main Press Wet Scrubber (0304WS)	2	35	920	16S 715,027	4,230,669	15,896	68	84.33
0502	Line 3 Die Forging (05-02), Line 3 Main Press Wet Scrubber (0502WS)	2.67	55	920	16S 715,027	4,230,669	22,000	68	65.65
0602	Line 4 Die Forging (06-02), Line 4 Main Press Wet Scrubber (0602WS)	2.67	55	920	16S 715,027	4,230,669	22,000	68	65.65

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
Group I EU 1	Die Making Line	01-03	60	300	16S 715027	4,230,669	ambient	OH Door 12ft Roof Vent 35ft
Group II EU 1	Die Making Line	01-04	60	300	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 45ft
Group I EU 2	Line #1 Die Forging	02-02	Emits through stack, not an area release.					
Group II EU 2	Line #1 Die Forging	02-04	60	250	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 45ft
Group I EU 3	Line #2 Die Forging	03-04	Emits through stack, not an area release.					
Group II EU 3	Line #2 Die Forging	03-05	60	250	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 45ft
Group II EU 4	Finishing & Inspection Process	04-03	60	50	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 35ft
		04-04	60	50	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 35ft
Group I EU 5	Line #3 Die Forging	05-01B	80	250	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 45ft
		05-02	Emits through stack, not an area release.					

Group II EU 5	Line #3 Die Forging	05-04	80	250	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 65ft
Group I EU 6	Line #4 Die Forging	06-01B	80	250	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 70ft
		06-02	Emits through stack, not an area release.					
Group II EU 6	Line #4 Die Forging	06-04	80	250	16S 715027	4,230,669	ambient	OH Door 16ft Roof Vent 70ft

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s
___ Section V.2: Monitoring Requiremen
___ Section V.3: Recordkeeping Require
___ Section V.4: Reporting Requirements
___ Section V.5: Testing Requirements
___ Section V.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: **International Crankshaft, Inc.**
KY EIS (AFS) #: **21- 209-00039**
Permit #: **F-16-076**
Agency Interest (AI) ID: **3910**
Date: **10/17/2021**

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
Group I EU 1 (EP# 01-03), Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-01B and EP# 5-02), Group I EU 6 (EP# 06-01B EP# 06-02), Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group I: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	Conditional Major Permit F-16-076 Section D.3	PM-10	Facility-wide emissions of PM-10 limited to <90 tons/rolling 12-month period.	NA	NA	Monthly production data monitoring and emission calculations as required by Conditional Major Permit F-16-076.
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.a. 401 KAR 59:010 Section 3(1)(a)	Opacity	Visible emissions from stacks shall be below 20% opacity.	NA	NA	Weekly monitoring of presence of visible emissions from wet scrubber stacks 02-02, 03-04, 05-02, and 06-02 or method 9 as required by Conditional Major Permit F-16-076 Section B.4.c

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 and EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	Conditional Major Permit F-16-076 Section B Group I 1. 40 CFR 63 Subpart XXXXXX - 40 CFR 63.11516(a)(2)	Metal Fabrication and Finishing Metal HAP (MFHAP)	NA	NA	Capture emissions and vent them to a filtration control device and operate the filtration control device according to manufacturer's instructions. Implement management practices to minimize emissions of MFHAP employing measures: (i) minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable; (ii) enclose dusty abrasive material storage areas and holding bins, seal chutes and conveyors that transport abrasive materials; and (iii) operate all equipment associated with dry abrasive blasting operations according to manufacturer's instructions.	Equipment manufacturer specification records, periodic inspections, and plant records.
Group I EU 1 (EP# 01-03)	Die Making Line	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
Group II EU 1 (EP# 01-04)	Die Making Line	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group I EU 2 (EP# 02-02)	Line 1 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group II EU 2 (EP# 02-04)	Line 1 Die Forging	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group I EU 3 (EP# 03-04)	Line 2 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
Group II EU 3 (EP# 03-05)	Line 2 Die Forging	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group II EU 4 (EP# 04-03)	Finishing and Inspection Process	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group II EU 4 (EP# 04-04)	Finishing and Inspection Process	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group I EU 5 (EP# 05-01B)	Line 3 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
Group I EU 5 (EP# 05-02)	Line 3 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group II EU 4 (EP# 05-04)	Line 3 Die Forging	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group I EU 6 (EP# 06-01B)	Line 4 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
Group I EU 6 (EP# 06-02)	Line 4 Die Forging	Conditional Major Permit F-16-076 Section B Group I 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit
Group II EU 6 (EP# 06-04)	Line 4 Die Forging	Conditional Major Permit F-16-076 Section B Group II 2.b. 401 KAR 59:010 Section 3(2) 401 KAR 59:010 Appendix A	PM	2.34 lb/hr	NA	NA	Proper operation of the unit

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
Group I EU 1 (EP# 01-03), Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-01B and EP# 5-02), Group I EU 6 (EP# 06-01B EP# 06-02), Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group I: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	PM-10	Conditional Major Permit F-16-076 Section D	None required by the underlying permit applicable requirements.	N/A

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section B Group I 4.c.	Visual observation of the opacity of emissions at each stack venting outside of the building	Monitoring including qualitative visual observation of the opacity of emissions at each stack venting outside the building weekly and maintain a log of the observations.
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section B Group I 4.b.	Proper operation of monitoring device for scrubbers, daily pressure drop, and weekly checks of scrubber nozzles.	Monitoring including install, calibrate, maintain and operate according to the manufacturer's specification, a monitoring device (differential pressure gauge or manometer) to determine the pressure drop across each scrubber once a day during the operation of the unit. Monitoring including check the scrubber nozzles on a weekly basis and record the observation in a monthly log.
Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 and EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	Metal Fabrication and Finishing HAP (MFHAP)	Conditional Major Permit F-16-076 Section B Group II 4.b. 40 CFR 63 Subpart XXXXXX - 40 CFR 63.11516(a)(2)	Proper operation of monitoring device for baghouse and daily pressure drop	Monitoring including install, calibrate, maintain and operate according to the manufacturer's specification, a monitoring device (differential pressure gauge or manometer) to determine the pressure drop across each baghouse once a day during the operation of the unit.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
Group I EU 1 (EP# 01-03)	Die Making Line	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 1 (EP# 01-04)	Die Making Line	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 2 (EP# 02-02)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 2 (EP# 02-04)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 3 (EP# 03-04)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
Group II EU 3 (EP# 03-05)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 4 (EP# 04-03)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 4 (EP# 04-04)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 5 (EP# 05-01B)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 5 (EP# 05-02)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
Group II EU 4 (EP# 05-04)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 6 (EP# 06-01B)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 6 (EP# 06-02)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 6 (EP# 06-04)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 4.a.	Throughput, operation hours, control equipment operation hours and control equipment periods of malfunction.	Monitoring of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
Group I EU 1 (EP# 01-03), Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-01B and EP# 5-02), Group I EU 6 (EP# 06-01B EP# 06-02), Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group I: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	PM-10	Conditional Major Permit F-16-076 Section D	12-month rolling total emissions	Records of emissions and processing rates for any twelve (12) consecutive months.
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section B Group I 5.b.	Visual observation of the opacity of emissions at each stack venting outside of the building	Records including qualitative visual observation of the opacity of emissions at each stack venting outside the building weekly and a log of the observations.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section B Group I 5.b.	Manufacturer's specifications for monitoring device. Daily pressure drop and weekly checks of scrubber nozzles.	Records including monitoring device (differential pressure gauge or manometer) manufacturer's specification and pressure drop across each scrubber once a day during the operation of the unit. Records including checks for scrubber nozzles on a weekly basis and records of the observation in a monthly log.
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section B Group I 5.a.	Records of actual or potential opacity deviations and method 9 observations.	Records including the occurrence, duration, cause and any corrective action taken for any incident or malfunction that occurs that causes or might cause an exceedance of the particulate emission or opacity standard when an emission unit is in operation. Records including a log of Method 9 observations (if performed).
Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 and EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	Metal Fabrication and Finishing HAP (MFHAP)	Conditional Major Permit F-16-076 Section B Group II 5.a. - d., f. Conditional Major Permit F-16-076 Section F.2. 40 CFR 63 Subpart XXXXXX - 40 CFR 63.11519(c)	Management practices and control device specifications Daily pressure drop	Copy of each notification and report and supporting documentation submitted to comply with 40 CFR 63 Subpart XXXXXX. Records of the applicability determinations including equipment subject to 40 CFR 63 Subpart XXXXXX. Records must also include any changes to the equipment along with the date of each change. Records of manufacturer's specifications for the control devices used to comply with the 40 CFR 63 Subpart XXXXXX standards and management practices. Records of manufacturer's instructions regarding operation of the equipment. Records of pressure drop across each baghouse.
Group I EU 1 (EP# 01-03)	Die Making Line	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
Group II EU 1 (EP# 01-04)	Die Making Line	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 2 (EP# 02-02)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 2 (EP# 02-04)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 3 (EP# 03-04)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 3 (EP# 03-05)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 4 (EP# 04-03)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 4 (EP# 04-04)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 5 (EP# 05-01B)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 5 (EP# 05-02)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 4 (EP# 05-04)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
Group I EU 6 (EP# 06-01B)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group I EU 6 (EP# 06-02)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group I 5.b.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.
Group II EU 6 (EP# 06-04)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section B Group II 5.f.	Monthly throughput, monthly hours of operation, and control device operation	Records of the monthly throughput, the monthly hours of operation, the daily hours of operation and any periods of malfunction of the control equipment.

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
Group I EU 1 (EP# 01-03), Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-01B and EP# 5-02), Group I EU 6 (EP# 06-01B EP# 06-02), Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group I: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	PM-10	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 and EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	Metal Fabrication and Finishing HAP (MFHAP)	40 CFR 63 Subpart XXXXXX - 40 CFR 63.11519	Management Practices and Control Device Specifications	Annual certification and compliance reports specific to 40 CFR 63 Subpart XXXXXX are required to be filed by January 31. The first report covers the July 26, 2011 through December 31, 2011 and the subsequent reports are required for the calendar year period. Initial notification no later than July 25, 2011. Notification of compliance status no later than November 22, 2011.
Group I EU 1 (EP# 01-03)	Die Making Line	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group II EU 1 (EP# 01-04)	Die Making Line	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group I EU 2 (EP# 02-02)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group II EU 2 (EP# 02-04)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group I EU 3 (EP# 03-04)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
Group II EU 3 (EP# 03-05)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group II EU 4 (EP# 04-03)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group II EU 4 (EP# 04-04)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group I EU 5 (EP# 05-01B)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group I EU 5 (EP# 05-02)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group II EU 4 (EP# 05-04)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group I EU 6 (EP# 06-01B)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
Group I EU 6 (EP# 06-02)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.
Group II EU 6 (EP# 06-04)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076 Section F	Any deviations as required by Conditional Major Permit F-16-076	Semi-annual monitoring reports and annual compliance certification as required by Conditional Major Permit F-16-076.

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
Group I EU 1 (EP# 01-03), Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-01B and EP# 5-02), Group I EU 6 (EP# 06-01B EP# 06-02), Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group I: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	PM-10	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 2 (EP# 02-02), Group I EU 3 (EP# 03-04), Group I EU 5 (EP# 05-02), Group I EU 6 (EP# 06-02)	Group I: Line #1 Die Forging, Line #2 Die Forging, Line #3 Die Forging, Line #4 Die Forging	Opacity	Conditional Major Permit F-16-076 Section B Group I 4.c. 401 KAR 59:010 Section 3(1)	Opacity	USEPA Method 9 if visible emissions after corrective actions. If required by KDAQ, USEPA Method 9, Kentucky Method 150 (F-1), or comparable method selected by Rumpke and approved by KDAQ.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
Group II EU 1 (EP# 01-04), Group II EU 2 (EP# 02-04), Group II EU 3 (EP# 03-05), Group II EU 4 (EP# 04-03 and EP# 04-04), Group II EU 5 (EP# 05-04), Group II EU 6 (EP# 06-04)	Group II: Die Making Line, Line #1 Die Forging, Line #2 Die Forging, Finishing & Inspection Process, Line #3 Die Forging, Line #4 Die Forging	Metal Fabrication and Finishing HAP (MFHAP)	Conditional Major Permit F-16-076 40 CFR 63 Subpart XXXXXX	None	None required by Conditional Major Permit F-16-076.
Group I EU 1 (EP# 01-03)	Die Making Line	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group II EU 1 (EP# 01-04)	Die Making Line	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 2 (EP# 02-02)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group II EU 2 (EP# 02-04)	Line 1 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 3 (EP# 03-04)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
Group II EU 3 (EP# 03-05)	Line 2 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group II EU 4 (EP# 04-03)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group II EU 4 (EP# 04-04)	Finishing and Inspection Process	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 5 (EP# 05-01B)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 5 (EP# 05-02)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group II EU 4 (EP# 05-04)	Line 3 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 6 (EP# 06-01B)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.
Group I EU 6 (EP# 06-02)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
Group II EU 6 (EP# 06-04)	Line 4 Die Forging	PM	Conditional Major Permit F-16-076	None	None required by Conditional Major Permit F-16-076.

Section V.6: Notes, Comments, and Explanations

Division for Air Quality
300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD

Insignificant Activities

___ Section DD.1: Table of Insignificant Activities
___ Section DD.2: Signature Block
___ Section DD.3: Notes, Comments, and Explanations

Source Name: **International Crankshaft, Inc.**

KY EIS (AFS) #: **21- 209-00039**

Permit #: **F-16-076**

Agency Interest (AI) ID: **3910**

Date: **10/25/2021**

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3… etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
01-01	Graphite Milling	Graphite Milling	401 KAR 59:010	**See Attached Spreadsheet**
01-02	Die Making (all except Rougher EDMs and Shotblasting)	Die Shop	401 KAR 59:010 401 KAR 63:020	**See Attached Spreadsheet**
01-05	Die Shop Die Pre-Heaters, four (4) 1.00 MMBtu/hr total	Die Shop Die Pre-Heaters	None	**See Attached Spreadsheet**

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
02-01A and 02-01B	Line 1 Die Forging (3 Circular Saws, Mitsui Electric Induction Heater, Hasenclever Rolling Reducer, HZ Clearing Trim Press, HZ Clearing Twister Press and Sumitomo Coin Press)	L1 Forging	401 KAR 59:010 401 KAR 63:020	**See Attached Spreadsheet**
02-03	Line 1 Natural Gas-Fired Die Pre-Heater – 0.30 MMBtu/hr	L1 MP Die Pre-Heater	None	**See Attached Spreadsheet**
IA1	Line 1 Cooling Hanger	L1 CH	None	Negligible
03-02A and 03-02B	Line 2 Die Forging (2 Circular Saw Machines, Mitsui Electric Induction Heater, Sumitomo Rolling Reducer, Sumitomo Trim Press, Sumitomo Clearing Twister Press, and Sumitomo Coin Press)	L2 Forging	401 KAR 59:010 401 KAR 63:020	**See Attached Spreadsheet**
03-03	Line 2 Natural Gas-Fired Die Pre-Heater – 0.30 MMBtu/hr	L2 MP Die Pre-Heater	None	**See Attached Spreadsheet**
IA2	Line 2 Cooling Hanger	L2 CH	None	Negligible
04-01	Lines 1 and 2 Rust Prevention Dip	L1 & L2 RI	401 KAR 59:010	Negligible

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
04-02	Lines 1 and 2 Two (2) Magnaflux Booths	L1 & L2 MI	401 KAR 59:010	Negligible
05-01A	Line 3 Die Forging (3 Circular Saw Machines, Mitsui Electric Induction Heater, Twister Hydraulic Press, Coin Hydraulic Press, Bolster Washing Machine, Bolster Rotating Machine)	L3 Forging	401 KAR 59:010 401 KAR 63:020	**See Attached Spreadsheet**
05-03	Line 3 Natural Gas-Fired Die Pre-Heater – 0.60 MMBtu/hr	L3 MP Die Pre-Heater	None	**See Attached Spreadsheet**
05-05	Line 3 Magnetizer Operation	L3 MI	401 KAR 59:010	Negligible
IA3	Line 3 Cooling Hanger	L3 CH	None	Negligible
05-06	Line 3 Rust Prevention Operation	L3 RI	401 KAR 59:010	Negligible
IA4	Billet Quench Station – Lines 1, 2, and 3	Building 1 Billet Quench	None	Negligible

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
06-01A	Line 4 Die Forging (3 Circular Saw Machines, Mitsui Electric Induction Heaters, Roll Reducer Machine, Coin Hydraulic Press, Bolster Washing Machine, Bolster Rotating Machine)	L4 Forging	401 KAR 59:010 401 KAR 63:020	**See Attached Spreadsheet**
06-03	Line 4 Natural Gas-Fired Die Pre-Heater – 0.60 MMBtu/hr	L4 MP Die Pre-Heater	None	**See Attached Spreadsheet**
IA5	Line 4 Cooling Conveyors	L4 CH	None	Negligible
06-05	Line 4 Visual Inspection with Magnetizer Operation and Hand Deburring/Grinding Station	L4 Inspection	401 KAR 59:010	**See Attached Spreadsheet**
06-06	Line 4 Rust Prevention Operation	L4 RI	401 KAR 59:010	Negligible
IA6	Line 4 Billet Quench Station	Building 2 Billet Quench	None	Negligible

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA7	Four Natural Gas Fired Space Heaters (Air Handling Units) – Building 1 – 2 @6.48 MMBtu/hr each Building 2 – 2 @6.62 MMBtu/hr each	Building 1 - Unit 82 & 83 Building 2 - MEAU1 & MEAU2	None	**See Attached Spreadsheet**
IA8	Twelve (12) Infrared Natural Gas Heaters - Three (3) 0.06 MMBtu/hr each and Nine (9) 0.1 MMBtu/hr each		None	**See Attached Spreadsheet**
IA9	Natural Gas-Fired 3.5 MMBtu/hr Space Heater		None	**See Attached Spreadsheet**
IA10	Twenty one (21) Natural Gas-Fired Space Heaters – Eighteen (18) 0.3 MMBtu/hr and Three (3) 0.05 MMBtu/hr		None	**See Attached Spreadsheet**
IA11	Eleven (11) Direct and Guttering CNC Milling Machines	OKK & Makino	401 KAR 59:010	Negligible
IA12	Tool Shop Natural Gas Tool Heater < 1 MMBtu/hr		None	**See Attached Spreadsheet**
IA13	Die Reworking Area - MIG & TIG Welding Units	Lincoln & Miller	401 KAR 59:010	**See Attached Spreadsheet**

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA14	Two (2) 18,000-Gallon Process Water ASTs		None	Negligible
IA15	1,000 Gallon Hydraulic Oil Tank 1		None	**See Attached Spreadsheet**
IA16	1,000 Gallon Hydraulic Oil Tank 2		None	**See Attached Spreadsheet**
IA17	1,000 Gallon Graphite Lube Tank		None	**See Attached Spreadsheet**
IA18	2,000 Gallons Waste Oil AST		None	**See Attached Spreadsheet**
IA19	Seven (7) 15,000 Gallon Waste Water Holding ASTs	WWT Tanks	None	Negligible
IA20	10,000 Gallon Oil/Water Separator, 5,950 Gallon Waste Water/Oil Pretreatment Tanks		None	**See Attached Spreadsheet**
IA21	Four (4) Two-Dimension Bar Coding Systems (2-Line 4, 1-Line 1, 1-Mini Inspection Line)	2D Barcode	None	Negligible
IA22	Natural Gas Fired Make-Up Air Heater (Air Handling Unit) – Building 3 - 1 @6.2 MMBtu/hr		None	**See Attached Spreadsheet**
IA23	01-02 Die Making Nitriding Process		None	Negligible

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA24	1,000 Gallon Hydraulic Oil Tank 3		None	**See Attached Spreadsheet**
IA25	750 Gallon Rougher EDM Oil Tank		None	**See Attached Spreadsheet**
IA26	500 Gallon Finisher EDM Oil Tank		None	**See Attached Spreadsheet**

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

	H. Andatsu	10/25/2021
	Authorized Signature	**Date**
By:	Hiroaki Andatsu	President
	Type/Print Name of Siguatory	**Title of Siguatory**

Section DD.3: Notes, Comments, and Explanations

Total Facility Criteria Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Potential Annual Emissions Summary:

Emission Unit #	Emissions Unit Name	Process ID	Process Name	CO Emissions (tons/yr)	NO_x Emissions (tons/yr)	PM Emissions (tons/yr)	SO_2 Emissions (tons/yr)	VOC Emissions (tons/yr)
Group I EU 1	Die Making Line	01-03	Rougher EDMs			7.95E-03		
Group II EU 1	Die Making Line	01-04	Resink Die Making Shot Blast Machine			0.04		
Group I EU 2	Line #1 Die Forging	02-02	Line 1 - Main Press			10.51		
Group II EU 2	Line #1 Die Forging	02-04	Line 1 - Shot Blast Machine			0.15		
Group I EU 3	Line #2 Die Forging	03-04	Line 2 - Main Press			8.76		
Group II EU 3	Line #2 Die Forging	03-05	Line 2 - Shot Blast Machine			0.13		
Group II EU 4	Finishing & Inspection Process	04-03	Finishing and Mini Inspection - Tumbler Shot Blaster 1			0.15		
		04-04	Finishing and Mini Inspection - Tumbler Shot Blaster 2			0.15		
Group I EU 5	Line #3 Die Forging	05-01B	Line 3 - Die Forging Process (excluding billet sawing)			9.11		
		05-02	Line 3 - 5,000 Ton Main/Trim Press			23.30		
Group II EU 5	Line #3 Die Forging	05-04	Line 3 - Shot Blast Machine			0.34		
Group I EU 6	Line #4 Die Forging	06-01B	Line 4 - Die Forging Process (excluding billet sawing)			9.65		
		06-02	Line 4 - 5,000 Ton Main/Trim Press			24.73		
Group II EU 6	Line #4 Die Forging	06-04	Line 4 - Shot Blast Machine			0.36		
Total Significant Emissions (tons/yr)				0.00	0.00	87.39	0.00	0.00
Total Insignificant Emissions (tons/yr)				16.71	19.89	10.36	0.12	1.40
Total Facility Emissions (tons/yr)				16.71	19.89	97.76	0.12	1.40

Total Facility HAP Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Potential HAP Emissions (tons/yr):

Pollutant	Group I EU 1	Group II EU 1	Group I EU 2	Group II EU 2	Group I EU 3	Group II EU 3	Group II EU 4		Group I EU 5		Group II EU 5	Group I EU 6		Group II EU 6	Insignificant Total	Maximum Facility Total
	01-03	01-04	02-02	02-04	03-04	03-05	04-03	04-04	05-01B	05-02	05-04	06-01B	06-02	06-04		
Arsenic Compounds															5.25E-05	**5.25E-05**
Benzene															4.27E-04	**4.27E-04**
Beryllium Compounds															6.63E-06	**6.63E-06**
Cadmium Compounds															2.50E-04	**2.50E-04**
Chromium	2.54E-04						4.53E-04	4.53E-04	0.03			0.03			0.09	**0.14**
Chromium Compounds															3.64E-04	**3.64E-04**
Cobalt															1.35E-05	**1.35E-05**
Cobalt Compounds															2.12E-05	**2.12E-05**
Dichlorobenzene															2.39E-04	**2.39E-04**
Ethylbenzene															6.02E-02	**0.06**
Formaldehyde															0.01	**0.01**
Hexane															0.36	**0.36**
Lead															2.19E-03	**2.19E-03**
Lead Compounds															1.07E-04	**1.07E-04**
Manganese	6.36E-05	3.96E-04		1.36E-03		1.14E-03	2.27E-03	2.27E-03	0.14		3.05E-03	0.14		3.23E-03	0.44	**0.74**
Manganese Compounds															9.76E-05	**9.76E-05**
Mercury Compounds															5.38E-05	**5.38E-05**
Naphthalene															1.21E-04	**1.21E-04**
Nickel	1.35E-04						3.02E-04	3.02E-04	1.82E-02			0.02			0.04	**0.08**
Nickel Compounds															5.31E-04	**5.31E-04**
Phosphorus	7.95E-07						3.78E-04	3.78E-04	2.28E-02			0.02			0.02	**0.07**
Selenium Compounds															6.71E-06	**6.71E-06**
Toluene															6.69E-03	**6.69E-03**
Xylene															0.18	**0.18**
Total Polycyclic Organic Matter (POM)															1.75E-05	**1.75E-05**
2-Methylnaphthalene - POM															4.77E-06	**4.77E-06**
3-Methylcholanthrene - POM															3.58E-07	**3.58E-07**
7,12-Dimethylbenz(a)anthracene - POM															3.18E-06	**3.18E-06**
Acenaphthene - POM															3.58E-07	**3.58E-07**
Acenaphthylene - POM															3.58E-07	**3.58E-07**
Anthracene - POM															4.77E-07	**4.77E-07**
Benz(a)anthracene - POM															3.58E-07	**3.58E-07**
Benzo(a)pyrene - POM															2.39E-07	**2.39E-07**
Benzo(b)fluoranthene - POM															3.58E-07	**3.58E-07**
Benzo(g,h,i)perylene - POM															2.39E-07	**2.39E-07**
Benzo(k)fluoranthene - POM															3.58E-07	**3.58E-07**
Chrysene - POM															3.58E-07	**3.58E-07**
Dibenzo(a,h)anthracene - POM															2.39E-07	**2.39E-07**
Fluoranthene - POM															5.97E-07	**5.97E-07**
Fluorene - POM															5.57E-07	**5.57E-07**
Indeno(1,2,3-cd)pyrene - POM															3.58E-07	**3.58E-07**
Phenanathrene - POM															3.38E-06	**3.38E-06**
Pyrene - POM															9.95E-07	**9.95E-07**
Total HAPs (tons/yr)	**4.54E-04**	**3.96E-04**	**0**	**1.36E-03**	**0**	**1.14E-03**	**3.40E-03**	**3.40E-03**	**0.20**	**0**	**3.05E-03**	**0.22**	**0**	**3.23E-03**	**1.22**	**1.65**
Highest Individual HAP (tons/yr)	**2.54E-04 (Chromium)**	**3.96E-04 (Manganese)**	**None**	**1.36E-03 (Manganese)**	**None**	**1.14E-03 (Manganese)**	**2.27E-03 (Manganese)**	**2.27E-03 (Manganese)**	**0.14 (Manganese)**	**None**	**3.05E-03 (Manganese)**	**0.14 (Manganese)**	**None**	**3.23E-03 (Manganese)**	**0.44 (Manganese)**	**0.74 (Manganese)**

Facility Insignificant Criteria Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Potential Annual Emissions Summary:

Insignificant Activity #	Process Name	CO Emissions (tons/yr)	NO_x Emissions (tons/yr)	PM Emissions (tons/yr)	SO_2 Emissions (tons/yr)	VOC Emissions (tons/yr)
01-01	Graphite Milling			7.67E-06		
01-02[a]	Die Making (all except Rougher EDMs and Shotblasting)					
01-05	Die Shop Die Pre-Heaters, four (4) 1.00 mmBTU/hr total	0.36	0.43	0.03	2.58E-03	0.02
02-01A and 02-01B	Line 1 Die Forging (3 Circular Saws, Mitsui Electric Induction Heaters, Hasenclever Rolling Reducer, HZ Clearing Trim Press, HZ Clearing Twister Press and Sumitomo Coin Press)			4.28		
02-03	Line 1 Natural Gas-Fired Die Pre-Heater – 0.30 mmBTU/hr	0.11	0.13	9.79E-03	7.73E-04	7.09E-03
IA1	Line 1 Cooling Hanger					
03-02A and 03-02B	Line 2 Die Forging (2 Circular Saw Machines, Mitsui Electric Induction Heaters, Sumitomo Rolling Reducer, Sumitomo Trim Press, Sumitomo Clearing Twister Press)			3.57		
03-03	Line 2 Natural Gas-Fired Die Pre-Heater – 0.30 mmBTU/hr	0.11	0.13	9.79E-03	7.73E-04	7.09E-03
IA2	Line 2 Cooling Hanger					
04-01	Lines 1 and 2 Rust Prevention Dip					
04-02	Lines 1 and 2 Two (2) Magnaflux Booths					
05-01A	Line 3 Die Forging (3 Circular Saw Machines, Mitsui Electric Induction Heater, Twister Hydraulic Press, Coin Hydraulic Press, Bolster Washing Machine, Bolster Rotating Machine)			0.41		
05-03	Line 3 Natural Gas-Fired Die Pre-Heater – 0.60 mmBTU/hr	0.22	0.26	0.02	1.55E-03	1.42E-02
05-05	Line 3 Magnetizer Operation					
IA3	Line 3 Cooling Hanger					
05-06	Line 3 Rust Prevention Operation					
IA4	Billet Quench Station – Lines 1, 2, and 3					
06-01A	Line 4 Die Forging (3 Circular Saw Machines, Two Electric Induction Heaters, Roll Reducer Machine, Coin Hydraulic Press, Bolster Washing Machine, Bolster Rotating Machine)			0.43		
06-03	Line 4 Natural Gas-Fired Die Pre-Heater – 0.60 mmBTU/hr	0.22	0.26	0.02	1.55E-03	1.42E-02
IA5	Line 4 Cooling Conveyors					

Facility Insignificant Criteria Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Insignificant Activity #	Process Name	CO Emissions (tons/yr)	NO_x Emissions (tons/yr)	PM Emissions (tons/yr)	SO_2 Emissions (tons/yr)	VOC Emissions (tons/yr)
06-05	Line 4 Visual Inspection with Magnetizer Operation and Hand Deburring/Grinding Station			4.29E-02		
06-06	Line 4 Rust Prevention Operation					
IA6	Line 4 Billet Quench Station					
IA7	Four Natural Gas Fired Space Heaters (Air Handling Units) – Building 1 – 2 @6.48 mmBTU/hr each Building 2 – 2 @6.62 mmBTU/hr each	9.45	11.25	0.86	0.07	0.62
IA8	Infrared Natural Gas Heaters - Three (3) 0.06 mmBTU/hr each and Nine (9) 0.1 mmBTU/hr each	0.39	0.46	0.04	2.78E-03	0.03
IA9	Natural Gas-Fired 3.5 mmBTU/hr Space Heater	1.26	1.50	0.11	9.02E-03	0.08
IA10	Natural Gas-Fired Space Heaters – Eighteen (18) 0.3 mmBTU/hr and Three (3) 0.05 mmBTU/hr	2.00	2.38	0.18	0.01	0.13
IA11	Ten Direct and Guttering CNC Milling Machines					
IA12	Tool Shop Propane Tool Heater < 1 mmBTU/hr	0.36	0.43	0.03	2.58E-03	0.02
IA13	Die Reworking Area - MIG & TIG Welding Units			0.11		
IA14	Two (2) 18,000-Gallon Process Water ASTs					
IA15	1,000 Gallon Hydraulic Oil Tank					1.87E-03
IA16	1,000 Gallon Hydraulic Oil Tank					1.87E-03
IA17	1,000 Gallon Graphite Lube Tank					1.87E-03
IA18	2,000 Gallons Waste Oil AST					3.73E-03
IA19	Seven (7) 18,000 Gallon Waste Water Holding ASTs					
IA20	10,000 Gallon Oil/Water Separator, 5,950 Gallon Waste Water/Oil Pretreatment Tanks					0.03
IA21	Four (4) Two-Dimension Bar Coding Systems (2-Line 4, 1-Line 1, 1-Mini Inspection Line)					0.27
IA22	Natural Gas Fired Space Heater (Air Handling Unit) – Building 3 - 1 @6.2 mmBTU/hr each	2.24	2.66	0.20	0.02	0.15
IA23	01-02 Die Making Nitriding Process					
IA24	1,000 Gallon Hydraulic Oil Tank					1.87E-03
IA25	750 Gallon EDM Oil Tank					1.40E-03
IA26	500 Gallon EDM Oil Tank					9.33E-04
Total Insignificant Emissions (tons/yr)		16.71	19.83	10.36	0.12	1.40

[a] Emissions associated with 01-02 are accounted for in the 01-03 emissions estimates.

Facility Insignificant HAP Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00035
PN: 5028-21-046 by JTL/BRG 10/25/2021

Potential HAP Emissions (tons/yr):

Pollutant	Graphite Milling	Die Making (all except Rougher EDMs and Shotblasting)	Die Shop Die Pre-Heaters, four (4) 1.00 mmBTU/hr total	Line 1 Die Forging (3 Circular Saws, Mitsui Electric Induction Heaters, Hasenclever Rolling Reducer, HZ Clearing Trim Press, HZ Clearing Twister Press and Sumitomo Coin Press)	Line 1 Natural Gas Fired Die Pre-Heater – 0.30 mmBTU/hr	Line 2 Die Forging (2 Circular Saw Machines, Mitsui Electric Induction Heaters, Sumitomo Rolling Reducer, Sumitomo Trim Press, Sumitomo Clearing Twister Press)	Line 2 Natural Gas Fired Die Pre-Heater – 0.30 mmBTU/hr	Line 3 Die Forging (3 Circular Saw Machines, Mitsui Electric Induction Heater, Twister Hydraulic Press, Coin Hydraulic Press, Bolster Washing Machine, Bolster Rotating Machine)	Line 3 Natural Gas Fired Die Pre-Heater – 0.60 mmBTU/hr	Line 4 Die Forging (3 Circular Saw Machines, Two Electric Induction Heaters, Roll Reducer Machine, Coin Hydraulic Press, Bolster Washing Machine, Bolster Rotating Machine)	Line 4 Natural Gas-Fired Die Pre-Heater – 0.60 mmBTU/hr	Line 4 Visual Inspection with Magnetizer Operation and Hand Deburring/Grinding Station	Four Natural Gas Fired Space Heaters (Air Handling Units) – Building 1 – 2 @6.48 mmBTU/hr each Building 2 – 2 @6.62 mmBTU/hr each	Infrared Natural Gas Heaters - Three (3) 0.06 mmBTU/hr each and Nine (9) 0.1 mmBTU/hr each	Natural Gas-Fired 3.5 mmBTU/hr Space Heater	Natural Gas-Fired Space Heaters – Eighteen (18) 0.3 mmBTU/hr and Three (3) 0.05 mmBTU/hr	Tool Shop Propane Tool Heater < 1 mmBTU/hr	Die Reworking Area - MIG & TIG Welding Units	Four (4) Two-Dimension Bar Coating Systems (2-Line 4, 1-Line 1, 1-Mini Inspection Line)	Natural Gas Fired Space Heater (Air Handling Unit) – Building 3 - 1 @6.2 mmBTU/hr each	Insignificant Total
	01-01	01-02[a]	01-05	02-01A and 02-01B	02-03	03-02A and 03-02B	03-03	05-01A	05-03	06-01A	06-03	06-05	IA7	IA8	IA9	IA10	IA12	IA13	IA21	IA22	
Arsenic Compounds			1.13E-06		3.40E-07		3.40E-07		6.80E-07		6.80E-07		2.97E-05	1.22E-06	3.97E-06	6.29E-06	1.13E-06			7.03E-06	5.25E-05
Benzene			9.02E-06		2.71E-06		2.71E-06		5.41E-06		5.41059E-06		2.36E-04	9.74E-06	3.16E-05	5.00E-05	9.02E-06		9.02E-06	5.59E-05	4.27E-04
Beryllium Compounds			1.43E-07		4.29E-08		4.29E-08		8.59E-08		8.58824E-08		3.75E-06	1.55E-07	5.01E-07	7.94E-07	1.43E-07			8.87E-07	6.63E-06
Cadmium Compounds			5.40E-06		1.62E-06		1.62E-06		3.24E-06		3.23899E-06		1.41E-04	5.83E-06	1.89E-05	3.00E-05	5.40E-06			3.35E-05	2.50E-04
Chromium				0.01		0.01		1.23E-03		1.30E-03								0.06			0.09
Chromium Compounds			7.86E-06		2.36E-06		2.36E-06		4.72E-06		4.72E-06		2.06E-04	8.49E-06	2.75E-05	4.36E-05	7.86E-06			4.87E-05	3.64E-04
Cobalt																		1.35E-05			1.35E-05
Cobalt Compounds			4.59E-07		1.38E-07		1.38E-07		2.75E-07		2.75E-07		1.20E-05	4.95E-07	1.60E-06	2.54E-06	4.59E-07			2.84E-06	2.12E-05
Dichlorobenzene			5.15E-06		1.55E-06		1.55E-06		3.09E-06		3.09E-06		1.35E-04	5.57E-06	1.80E-05	2.86E-05	5.15E-06			3.19E-05	2.39E-04
Ethylbenzene																			0.06		0.06
Formaldehyde			3.22E-04		9.66E-05		9.66E-05		1.93E-04		1.93E-04		8.44E-03	3.48E-04	1.13E-03	1.79E-03	3.22E-04			2.00E-03	0.01
Hexane			7.73E-03		2.32E-03		2.32E-03		4.64E-03		4.64E-03		0.20	8.35E-03	0.03	0.04	7.73E-03			0.05	0.36
Lead																		2.19E-03			2.19E-03
Lead Compounds			2.31E-06		6.94E-07		6.94E-07		1.39E-06		1.39E-06		6.06E-05	2.50E-06	8.10E-06	1.28E-05	2.31E-06			1.43E-05	1.07E-04
Manganese				0.06		0.05		6.15E-03		6.51E-03								0.31			0.44
Manganese Compounds			2.11E-06		6.32E-07		6.32E-07		1.26E-06		1.26E-06		5.52E-05	2.27E-06	7.37E-06	1.17E-05	2.11E-06			1.31E-05	9.76E-05
Mercury Compounds			1.16E-06		3.48E-07		3.48E-07		6.97E-07		6.97E-07		3.04E-05	1.25E-06	4.06E-06	6.44E-06	1.16E-06			7.20E-06	5.38E-05
Naphthalene			2.62E-06		7.86E-07		7.86E-07		1.57E-06		1.57E-06		6.86E-05	2.83E-06	9.17E-06	1.45E-05	2.62E-06			1.62E-05	1.21E-04
Nickel				8.57E-03		7.14E-03		5.20E-04		8.68E-04								0.02			0.04
Nickel Compounds			1.15E-05		3.44E-06		3.44E-06		6.88E-06		6.88E-06		3.00E-04	1.24E-05	4.01E-05	6.36E-05	1.15E-05			7.11E-05	5.31E-04
Phosphorus				0.01		8.93E-03		1.02E-03		1.09E-03											0.02
Selenium Compounds			1.45E-07		4.34E-08		4.34E-08		8.69E-08		8.69E-08		3.79E-06	1.56E-07	5.07E-07	8.04E-07	1.45E-07			8.88E-07	6.71E-06
Toluene			1.46E-05		4.38E-06		4.38E-06		8.76E-06		8.76E-06		3.83E-04	1.58E-05	5.11E-05	8.10E-05	1.46E-05		6.02E-03	9.05E-05	6.69E-03
Xylene																			0.18		0.18
Total Polycyclic Organic Matter (POM)			3.79E-07		1.14E-07		1.14E-07		2.27E-07		2.27E-07		9.92E-06	4.09E-07	1.33E-06	2.10E-06	3.79E-07			2.35E-06	1.75E-05
2-Methylnaphthalene - POM			1.03E-07		3.09E-08		3.09E-08		6.18E-08		6.18E-08		2.70E-06	1.11E-07	3.61E-07	5.72E-07	1.03E-07			6.39E-07	4.77E-06
3-Methylcholanthrene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
7,12-Dimethylbenz(a)anthracene - POM			6.87E-08		2.06E-08		2.06E-08		4.12E-08		4.12E-08		1.80E-06	7.42E-08	2.40E-07	3.81E-07	6.87E-08			4.26E-07	3.18E-06
Acenaphthene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Acenaphthylene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Anthracene - POM			1.03E-08		3.09E-09		3.09E-09		6.18E-09		6.18E-09		2.70E-07	1.11E-08	3.61E-08	5.72E-08	1.03E-08			6.39E-08	4.77E-07
Benz(a)anthracene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Benzo(a)pyrene - POM			5.15E-09		1.55E-09		1.55E-09		3.09E-09		3.09E-09		1.35E-07	5.57E-09	1.80E-08	2.86E-08	5.15E-09			3.19E-08	2.39E-07
Benzo(b)fluoranthene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Benzo(g,h,i)perylene - POM			5.15E-09		1.55E-09		1.55E-09		3.09E-09		3.09E-09		1.35E-07	5.57E-09	1.80E-08	2.86E-08	5.15E-09			3.19E-08	2.39E-07
Benzo(k)fluoranthene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Chrysene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Dibenzo(a,h)anthracene - POM			5.15E-09		1.55E-09		1.55E-09		3.09E-09		3.09E-09		1.35E-07	5.57E-09	1.80E-08	2.86E-08	5.15E-09			3.19E-08	2.39E-07
Fluoranthene - POM			1.29E-08		3.86E-09		3.86E-09		7.73E-09		7.73E-09		3.38E-07	1.39E-08	4.51E-08	7.15E-08	1.29E-08			7.99E-08	5.97E-07
Fluorene - POM			1.20E-08		3.61E-09		3.61E-09		7.21E-09		7.21E-09		3.15E-07	1.30E-08	4.21E-08	6.67E-08	1.20E-08			7.45E-08	5.57E-07
Indeno(1,2,3-cd)pyrene - POM			7.73E-09		2.32E-09		2.32E-09		4.64E-09		4.64E-09		2.03E-07	8.35E-09	2.71E-08	4.29E-08	7.73E-09			4.79E-08	3.58E-07
Phenanthrene - POM			7.30E-08		2.19E-08		2.19E-08		4.38E-08		4.38E-08		1.91E-06	7.88E-08	2.56E-07	4.05E-07	7.30E-08			4.53E-07	3.38E-06
Pyrene - POM			2.15E-08		6.44E-09		6.44E-09		1.29E-08		1.29E-08		5.63E-07	2.32E-08	7.51E-08	1.19E-07	2.15E-08			1.33E-07	9.95E-07
Total HAPs	0	0	8.12E-03	0.10	2.43E-03	0.08	2.43E-03	9.22E-03	4.87E-03	0.01	4.87E-03	0	0.21	8.76E-03	0.03	0.05	8.12E-03	0.40	0.25	0.05	1.22
Highest Individual HAP	None	None	7.73E-03 (Hexane)	0.06 (Manganese)	2.32E-03 (Hexane)	0.05 (Manganese)	2.32E-03 (Hexane)	0.01 (Manganese)	4.64E-03 (Hexane)	6.51E-03 (Manganese)	4.64E-03 (Hexane)	None	0.20 (Hexane)	8.35E-03 (Hexane)	0.03 (Hexane)	0.04 (Hexane)	7.73E-03 (Hexane)	0.31 (Manganese)	0.18 (Xylene)	0.05 (Hexane)	0.44 (Manganese)

[a] Emissions associated with 01-02 are accounted for in the 01-03 emissions estimates.

Die Making Process Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data

Die Making Process - Graphite Milling Process Data (tool for preparation of die) (EP 01-01)

Maximum Number of Impressions (impressions/day)	4	
Maximum Weight of Impression Block (lb)	35	
Maximum Weight of Impression Blocks Processed Daily (lb/day)	140	
Maximum Weight of Impression Blocks Processed Annually (tons/yr)	25.55	(based on 365 days/yr of operation)
Control Efficiency of Dust Collector (%)	99.40%	

Die Making Process - New/Resink Die Process Data (EP 01-02 and EP 01-03)

Total EDM Oil Usage (lb/hr)	8	(current permit limit)
EDM Oil Density (lb/gal)	6.42	(based on MSDS for EDM-244)
VOC Content of EDM Oil (lb/gal)	0	Note: No emissions are associated with EDM oil.
Maximum Weight of Die (lb/part)	1000	
Maximum Dies Machined Daily (parts/day)	8.71	
Daily Die Making Operating Hour Basis	5	
Die Block Hourly Throughput Rate (ton/hr)	0.87	(current permit limit)
Maximum Dies Machined Annually (parts/yr)	3,180	(based on parts/day and 365 days/yr operation)
Maximum Chromium Content of Die	3.20%	(based on SDH3 Mill Certificate dated 6/19/1998)
Maximum Nickel Content of Die	1.70%	
Maximum Manganese Content of Die	0.80%	
Maximum Phosphorus Content of Die	0.01%	
Control Efficiency of EDM Box Filter	90.00%	

Die Making Process - Shot Blast Operation Data (EP 01-04)

Steel Shot Usage (tons/month)	0.58	
Maximum Steel Shot Usage (tons/hr)	0.0073	(based on 5 days/wk, 4 weeks/month, 4 hr/day)
Maximum Steel Shot Usage (tons/yr)	64	(based on tons/hr * 8760 hr/yr)
Maximum Manganese Content of Steel Shot (%)	0.90%	(based on Metaltec steel shot MSDS dated 1/1/08; this material also contains trace amounts of cadmium @ 0.035 ppm and mercury @ 0.14 ppm)
Control Efficiency of Shot Blast Dust Collector (%)	99.99%	(based on manufacturer specifications)

Die Making Process Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Emissions Data

Graphite Milling Process/EDMs PM Emission Factor (lb/ton)	0.1	(based on AP-42 Table 12.5-1 (10/86 with reformat 1/95) emission factor for steel scarfing and similar to Line 2 permit application)
Shot Blast PM Emission Factor (lb/1000 lb abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)

Die Making Process Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
01-01 (insignificant)	Graphite Milling Operations	1.75E-06	7.67E-06									0	0
01-02 (insignificant), 01-03	Die Machining Operations	8.71E-03	7.95E-03	2.79E-04	2.54E-04	6.97E-05	6.36E-05	1.48E-04	1.35E-04	8.71E-07	7.95E-07	4.97E-04	4.54E-04
01-04	Shot Blasting Operations	0.01	0.04			9.05E-05	3.96E-04					9.05E-05	3.96E-04
Total		0.02	0.05	2.79E-04	2.54E-04	1.60E-04	4.60E-04	1.48E-04	1.35E-04	8.71E-07	7.95E-07	5.88E-04	8.50E-04

Line 1 Die Forging (02-01) and Main Press (02-02) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data

Metal Parts (02-01) (insignificant)

Maximum Hourly Parts Throughput (parts/hr)	180	
Maximum Annual Parts Throughput (parts/yr)	1,576,800	(based on 8,760 hr/yr)
Maximum Weight of Part (lb/part)	104	
Maximum Hourly Parts Throughput (tons/hr)	9.36	
Maximum Annual Parts Throughput (tons/yr)	81,994	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel (%)	0.30%	(Reference: RY 2009 SARA 313 Processed)
Maximum Lead Content of Steel (%)	0%	
Maximum Manganese Content of Steel (%)	1.50%	
Maximum Nickel Content of Steel (%)	0.20%	
Maximum Phosphorus Content of Steel (%)	0.25%	

Graphite Lubricant in Main Press (02-02)

Maximum Graphite Lubricant Usage Rate (tons/hr)	0.06	(current permit limit)
Maximum Graphite Lubricant Usage Rate (tons/yr)	526	(based on 8,760 hr/yr)
Percent of Lubricant Exhausted to Rotoclone (%)	10.00%	
Control Efficiency of Rotoclone (%)	80.00%	

Emission Factors

Sawing Process Fugitive PM Emission Factor (lb/ton)	4.50E-03	(basec on USEPA WebFire Emission Factor for Steel Foundry Finishing Operations (SCC: 3-04-007-15)
Forging Process Fugitive PM Emission Factor (lb/ton)	0.1	(based on AP-42 Table 12.5-1 (10/86 with reformat 1/95) emission factor for steel scarfing)

Line 1 Die Forging (02-01) and Main Press (02-02) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Uncontrolled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
02-01 (insignificant)	Billet Sawing (fugitive)	0.04	0.18	1.26E-04	5.53E-04	6.32E-04	2.77E-03	8.42E-05	3.69E-04	1.05E-04	4.61E-04	9.48E-04	4.15E-03
	Die Forging (fugitive)	0.94	4.10	2.81E-03	0.01	0.01	0.06	1.87E-03	8.20E-03	2.34E-03	0.01	0.02	0.09
	Total Emission Point 02-01 (fugitive)	0.98	4.28	2.93E-03	0.01	0.01	0.06	1.96E-03	8.57E-03	2.45E-03	0.01	0.02	0.10
02-02	Main Press (point)	12.00	52.56									0	0

Controlled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
02-01 (insignificant)	Billet Sawing (fugitive)	0.04	0.18	1.26E-04	5.53E-04	6.32E-04	2.77E-03	8.42E-05	3.69E-04	1.05E-04	4.61E-04	9.48E-04	4.15E-03
	Die Forging (fugitive)	0.94	4.10	2.81E-03	0.01	0.01	0.06	1.87E-03	8.20E-03	2.34E-03	0.01	0.02	0.09
	Total Emission Point 02-01 (fugitive)	0.98	4.28	2.93E-03	0.01	0.01	0.06	1.96E-03	8.57E-03	2.45E-03	0.01	0.02	0.10
02-02	Main Press (point)	2.40	10.51									0	0

Note: Emissions of chromium, manganese, nickel, and phosphorus are based on the PM emission rate * maximum weight % of metal in steel.

Line 1 Shot Blast Machine (02-04) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data (02-04)

Maximum Hourly Steel Shot Usage (lb/hr)	50	(based on current permit limit of 0.025 ton/hr)
Maximum Annual Steel Shot Usage (tons/yr)	219	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel Shot (%)	0%	(based on Metaltec steel abrasive MSDS dated 1/1/08)
Maximum Manganese Content of Steel Shot (%)	0.90%	
Maximum Nickel Content of Steel Shot (%)	0%	
Maximum Phosphorus Content of Steel Shot (%)	0%	

Emissions Data (Emission Point 02-04)

PM Controlled Emission Factor (lb/1000 lb Abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)
Maximum Hourly PM Emissions (lb/hr)	0.03	
Maximum Annual PM Emissions (tons/yr)	0.15	
Maximum Hourly Chromium Emissions (lb/hr)	0	(based on PM emissions and maximum chromium content of steel shot)
Maximum Annual Chromium Emissions (tons/yr)	0	
Maximum Hourly Manganese Emissions (lb/hr)	3.11E-04	(based on PM emissions and maximum manganese content of steel shot)
Maximum Annual Manganese Emissions (tons/yr)	1.36E-03	
Maximum Hourly Nickel Emissions (lb/hr)	0	(based on PM emissions and maximum nickel content of steel shot)
Maximum Annual Nickel Emissions (tons/yr)	0	
Maximum Hourly Phosphorus Emissions (lb/hr)	0	(based on PM emissions and maximum phosphorus content of steel shot)
Maximum Annual Phosphorus Emissions (tons/yr)	0	
Total HAPs Emissions (lb/hr)	3.11E-04	
Total HAPs Emissions (tons/yr)	1.36E-03	

Line 2 Die Forging (03-02) Main Press (03-04) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data

Metal Parts (03-02) (insignificant)

Maximum Hourly Parts Throughput (parts/hr)	150	
Maximum Annual Parts Throughput (parts/yr)	1,314,000	(based on 8,760 hr/yr)
Maximum Weight of Part (lb/part)	104	
Maximum Hourly Parts Throughput (tons/hr)	7.8	
Maximum Annual Parts Throughput (tons/yr)	68,328	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel (%)	0.30%	(Reference: RY 2009 SARA 313 Processed)
Maximum Lead Content of Steel (%)	0%	
Maximum Manganese Content of Steel (%)	1.50%	
Maximum Nickel Content of Steel (%)	0.20%	
Maximum Phosphorus Content of Steel (%)	0.25%	

Graphite Lubricant in Main Press (03-04)

Maximum Graphite Lubricant Usage Rate (tons/hr)	0.05	(current permit limit)
Maximum Graphite Lubricant Usage Rate (tons/yr)	438	(based on 8,760 hr/yr)
Percent of Lubricant Exhausted to Rotoclone (%)	10.00%	
Control Efficiency of Rotoclone (%)	80.00%	

Emission Factors

Sawing Process Fugitive PM Emission Factor (lb/ton)	4.50E-03	(based on USEPA WebFire Emission Factor for Steel Foundry Finishing Operations (SCC: 3-04-007-15)
Forging Process Fugitive PM Emission Factor (lb/ton)	0.1	(based on AP-42 Table 12.5-1 (10/86 with reformat 1/95) emission factor for steel scarfing)

Line 2 Die Forging (03-02) Main Press (03-04) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Uncontrolled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
03-02 (insignificant)	Billet Sawing (fugitive)	0.04	0.15	1.05E-04	4.61E-04	5.27E-04	2.31E-03	7.02E-05	3.07E-04	8.78E-05	3.84E-04	7.90E-04	3.46E-03
	Die Forging (fugitive)	0.78	3.42	2.34E-03	0.01	0.01	0.05	1.56E-03	6.83E-03	1.95E-03	8.54E-03	0.02	0.08
	Total Emission Point 03-02 (fugitive)	0.82	3.57	2.45E-03	0.01	0.01	0.05	1.63E-03	7.14E-03	2.04E-03	8.93E-03	0.02	0.08
03-04	Main Press (point)	10.00	43.80									0	0

Controlled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
03-02 (insignificant)	Billet Sawing (fugitive)	0.04	0.15	1.05E-04	4.61E-04	5.27E-04	2.31E-03	7.02E-05	3.07E-04	8.78E-05	3.84E-04	7.90E-04	3.46E-03
	Die Forging (fugitive)	0.78	3.42	2.34E-03	0.01	0.01	0.05	1.56E-03	6.83E-03	1.95E-03	8.54E-03	0.02	0.08
	Total Emission Point 03-02 (fugitive)	0.82	3.57	2.45E-03	0.01	0.01	0.05	1.63E-03	7.14E-03	2.04E-03	8.93E-03	0.02	0.08
03-04	Main Press (point)	2.00	8.76									0	0

Note: Emissions of chromium, manganese, nickel, and phosphorus are based on the PM emission rate * maximum weight % of metal in steel.

Line 2 Shot Blast Machine (03-05) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data (03-05)

Maximum Hourly Steel Shot Usage (lb/hr)	42	(based on current permit limit of 0.021 ton/hr)
Maximum Annual Steel Shot Usage (tons/yr)	184	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel Shot (%)	0%	(based on Metaltec steel abrasive MSDS dated 1/1/08)
Maximum Manganese Content of Steel Shot (%)	0.90%	
Maximum Nickel Content of Steel Shot (%)	0%	
Maximum Phosphorus Content of Steel Shot (%)	0%	

Emissions Data (Emission Point 03-05)

PM Controlled Emission Factor (lb/1000 lb Abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)
Maximum Hourly PM Emissions (lb/hr)	0.03	
Maximum Annual PM Emissions (tons/yr)	0.13	
Maximum Hourly Chromium Emissions (lb/hr)	0	(based on PM emissions and maximum chromium content of steel shot)
Maximum Annual Chromium Emissions (tons/yr)	0	
Maximum Hourly Manganese Emissions (lb/hr)	2.61E-04	(based on PM emissions and maximum manganese content of steel shot)
Maximum Annual Manganese Emissions (tons/yr)	1.14E-03	
Maximum Hourly Nickel Emissions (lb/hr)	0	(based on PM emissions and maximum nickel content of steel shot)
Maximum Annual Nickel Emissions (tons/yr)	0	
Maximum Hourly Phosphorus Emissions (lb/hr)	0	(based on PM emissions and maximum phosphorus content of steel shot)
Maximum Annual Phosphorus Emissions (tons/yr)	0	
Total HAPs Emissions (lb/hr)	2.61E-04	
Total HAPs Emissions (tons/yr)	1.14E-03	

Finishing and Mini Inspection Tmbler Shot Blaster 1 (04-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Mini Inspection Process Data (04-03)

Tumbler Shot Blaster Production Rate (pieces/hr)	150	(14 minutes per 35 pieces)
Estimated Shot Consumption (lb/piece)	0.07	
Tumbler Shot Blast Abrasive Throughput Capacity (lb/hr)	50	(based on current permit limit of 0.025 ton/hr)
Potential Annual Abrasive Throughput (tons/yr)	219	(based on 8760 hr/yr operation)
Control Efficiency of Dust Collector (%)	99.5%	
PM Controlled Emission Factor (lb/1000 lb Abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)
Maximum Chromium Content of Steel Shot (%)	0%	(Metaltec Steel Abrasive MSDS dated 1/1/2008)
Maximum Manganese Content of Steel Shot (%)	0.90%	
Maximum Nickel Content of Steel Shot (%)	0%	
Maximum Phosphorus Content of Steel Shot (%)	0%	
Maximum Chromium Content in All Steels (%)	0.30%	(Reference: RY 2009 SARA 313 Processed)
Maximum Lead Content in All Steels (%)	0%	
Maximum Manganese Content in All Steels (%)	1.50%	
Maximum Nickel Content in All Steels (%)	0.20%	
Maximum Phosphorus Content in All Steels (%)	0.25%	

Potential Emissions

	Controlled Emissions		Uncontrolled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
PM	0.03	0.15	6.90	30.22

Potential Emissions of HAPs

	Controlled Emissions		Uncontrolled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
Chromium	1.04E-04	4.53E-04	0.02	0.09
Lead	0	0	0	0
Manganese	5.18E-04	2.27E-03	0.10	0.45
Nickel	6.90E-05	3.02E-04	0.01	0.06
Phosphorus	8.63E-05	3.78E-04	0.02	0.08
Combined HAPs	7.76E-04	3.40E-03	0.16	0.68

Mini Inspection Tumbler Shot Blaster 2 (04-04) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Mini Inspection Process Data (04-04)

Tumbler Shot Blaster Production Rate (pieces/hr)	150	(14 minutes per 35 pieces)
Estimated Shot Consumption (lb/piece)	0.07	
Tumbler Shot Blast Abrasive Throughput Capacity (lb/hr)	50	(based on current permit limit of 0.025 ton/hr)
Potential Annual Abrasive Throughput (tons/yr)	219	(based on 8760 hr/yr operation)
Control Efficiency of Dust Collector (%)	99.5%	
PM Controlled Emission Factor (lb/1000 lb Abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)
Maximum Chromium Content of Steel Shot (%)	0%	(Metaltec Steel Abrasive MSDS dated 1/1/2008)
Maximum Manganese Content of Steel Shot (%)	0.90%	
Maximum Nickel Content of Steel Shot (%)	0%	
Maximum Phosphorus Content of Steel Shot (%)	0%	
Maximum Chromium Content in All Steels (%)	0.30%	(Reference: RY 2009 SARA 313 Processed)
Maximum Lead Content in All Steels (%)	0%	
Maximum Manganese Content in All Steels (%)	1.50%	
Maximum Nickel Content in All Steels (%)	0.20%	
Maximum Phosphorus Content in All Steels (%)	0.25%	

Potential Emissions

	Controlled Emissions		Uncontrolled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
PM	0.03	0.15	6.90	30.22

Potential Emissions of HAPs

	Controlled Emissions		Uncontrolled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
Chromium	1.04E-04	4.53E-04	0.02	0.09
Lead	0	0	0	0
Manganese	5.18E-04	2.27E-03	0.10	0.45
Nickel	6.90E-05	3.02E-04	0.01	0.06
Phosphorus	8.63E-05	3.78E-04	0.02	0.08
Combined HAPs	7.76E-04	3.40E-03	0.16	0.68

Line 3 Die Forging (05-01) and Main Press (05-02) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data

Metal Parts (05-01)

Maximum Hourly Parts Throughput (parts/hr)	400	
Maximum Annual Parts Throughput (parts/yr)	3,504,000	(based on 8,760 hr/yr)
Maximum Weight of Part (lb/part)	104	
Maximum Hourly Parts Throughput (tons/hr)	20.8	(current permit limit)
Maximum Annual Parts Throughput (tons/yr)	182,208	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel (%)	0.30%	(Reference: RY 2009 SARA 313 Processed)
Maximum Lead Content of Steel (%)	0%	
Maximum Manganese Content of Steel (%)	1.50%	
Maximum Nickel Content of Steel (%)	0.20%	
Maximum Phosphorus Content of Steel (%)	0.25%	

Graphite Lubricant in Main Press (05-02)

Maximum Graphite Lubricant Usage Rate (tons/hr)	0.133	(current permit limit)
Maximum Graphite Lubricant Usage Rate (tons/yr)	1,165	(based on 8,760 hr/yr)
Percent of Lubricant Exhausted to Scrubber (%)	10.00%	
Control Efficiency of Scrubber (%)	80.00%	

Emission Factors

Sawing Process Fugitive PM Emission Factor (lb/ton)	4.50E-03	(based on USEPA WebFire Emission Factor for Steel Foundry Finishing Operations (SCC: 3-04-007-15)
Forging Process Fugitive PM Emission Factor (lb/ton)	0.1	(based on AP-42 Table 12.5-1 (10/86 with reformat 1/95) emission factor for steel scarfing)

Line 3 Die Forging (05-01) and Main Press (05-02) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Uncontrolled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
05-01	05-01A (insignificant) Billet Sawing (fugitive)	0.09	0.41	2.81E-04	1.23E-03	1.40E-03	6.15E-03	1.87E-04	8.20E-04	2.34E-04	1.02E-03	2.11E-03	9.22E-03
	05-01B Die Forging (fugitive)	2.08	9.11	6.24E-03	0.03	0.03	0.14	4.16E-03	0.02	5.20E-03	0.02	0.05	0.20
	Total Emission Point 05-01 (fugitive)	2.17	9.52	6.52E-03	0.03	0.03	0.14	4.35E-03	0.02	5.43E-03	0.02	0.05	0.21
05-02	Main Press (point)	26.60	116.51									0	0

Controlled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
05-01	05-01A (insignificant) Billet Sawing (fugitive)	0.09	0.41	2.81E-04	1.23E-03	1.40E-03	6.15E-03	1.87E-04	8.20E-04	2.34E-04	1.02E-03	2.11E-03	9.22E-03
	05-01B Die Forging (fugitive)	2.08	9.11	6.24E-03	0.03	0.03	0.14	4.16E-03	0.02	5.20E-03	0.02	0.05	0.20
	Total Emission Point 05-01 (fugitive)	2.17	9.52	6.52E-03	0.03	0.03	0.14	4.35E-03	0.02	5.43E-03	0.02	0.05	0.21
05-02	Main Press (point)	5.32	23.30									0	0

Note: Emissions of chromium, manganese, nickel, and phosphorus are based on the PM emission rate * maximum weight % of metal in steel.

Line 3 Shot Blast Machine (05-04) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data (05-04)

Maximum Hourly Steel Shot Usage (lb/hr)	112	(based on current permit limit of 0.056 ton/hr)
Maximum Annual Steel Shot Usage (tons/yr)	491	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel Shot (%)	0%	(based on Metaltec steel shot MSDS dated 1/1/08)
Maximum Manganese Content of Steel Shot (%)	0.90%	
Maximum Nickel Content of Steel Shot (%)	0%	
Maximum Phosphorus Content of Steel Shot (%)	0%	

Emissions Data (Emission Point 05-04)

PM Controlled Emission Factor (lb/1000 lb Abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)
Maximum Hourly PM Emissions (lb/hr)	0.08	
Maximum Annual PM Emissions (tons/yr)	0.34	
Maximum Hourly Chromium Emissions (lb/hr)	0	(based on PM emissions and maximum chromium content of steel shot)
Maximum Annual Chromium Emissions (tons/yr)	0	
Maximum Hourly Manganese Emissions (lb/hr)	6.96E-04	(based on PM emissions and maximum manganese content of steel shot)
Maximum Annual Manganese Emissions (tons/yr)	3.05E-03	
Maximum Hourly Nickel Emissions (lb/hr)	0	(based on PM emissions and maximum nickel content of steel shot)
Maximum Annual Nickel Emissions (tons/yr)	0	
Maximum Hourly Phosphorus Emissions (lb/hr)	0	(based on PM emissions and maximum phosphorus content of steel shot)
Maximum Annual Phosphorus Emissions (tons/yr)	0	
Total HAPs Emissions (lb/hr)	6.96E-04	
Total HAPs Emissions (tons/yr)	3.05E-03	

Line 4 Die Forging (06-01) and Main Press (06-02) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data

Metal Parts (06-01)

Line 3 Cycle Time (sec)	9	
Line 4 Cycle Time (sec)	8.5	
Maximum Hourly Parts Throughput (parts/hr)	423.53	
Maximum Annual Parts Throughput (parts/yr)	3,710,118	(based on 8,760 hr/yr)
Maximum Weight of Part (lb/part)	104	
Maximum Hourly Parts Throughput (tons/hr)	22.02	(current permit limit)
Maximum Annual Parts Throughput (tons/yr)	192,926	(based on 8,760 hr/yr)
Maximum Chromium Content of Steel (%)	0.30%	(Reference: RY 2009 SARA 313 Processed)
Maximum Lead Content of Steel (%)	0%	
Maximum Manganese Content of Steel (%)	1.50%	
Maximum Nickel Content of Steel (%)	0.20%	
Maximum Phosphorus Content of Steel (%)	0.25%	

Graphite Lubricant in Main Press (06-02)

Maximum Graphite Lubricant Usage Rate (tons/hr)	0.141	(current permit limit)
Maximum Graphite Lubricant Usage Rate (tons/yr)	1,237	(based on 8,760 hr/yr)
Percent of Lubricant Exhausted to Scrubber (%)	10.00%	
Control Efficiency of Scrubber (%)	80.00%	

Emission Factors

Sawing Process Fugitive PM Emission Factor (lb/ton)	4.50E-03	(based on USEPA WebFire Emission Factor for Steel Foundry Finishing Operations (SCC: 3-04-007-15)
Forging Process Fugitive PM Emission Factor (lb/ton)	0.1	(based on AP-42 Table 12.5-1 (10/86 with reformat 1/95) emission factor for steel scarfing)

Line 4 Die Forging (06-01) and Main Press (06-02) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Uncontrolled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
06-01	06-01A (insignificant) Billet Sawing (fugitive)	0.10	0.43	2.97E-04	1.30E-03	1.49E-03	6.51E-03	1.98E-04	8.68E-04	2.48E-04	1.09E-03	2.23E-03	9.77E-03
	06-01B Die Forging (fugitive)	2.20	9.65	6.61E-03	0.03	0.03	0.14	4.40E-03	0.02	5.51E-03	0.02	0.05	0.22
	Total Emission Point 06-01 (fugitive)	2.30	10.08	6.90E-03	0.03	0.03	0.15	4.60E-03	0.02	5.75E-03	0.03	0.05	0.23
6-02	Main Press (point)	28.24	123.67									0	0

Controlled Potential Emissions Summary

Emission Point #	Description	PM Emissions		Chromium Emissions		Manganese Emissions		Nickel Emissions		Phosphorus Emissions		Total HAPs	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
06-01	06-01A (insignificant) Billet Sawing (fugitive)	0.10	0.43	2.97E-04	1.30E-03	1.49E-03	6.51E-03	1.98E-04	8.68E-04	2.48E-04	1.09E-03	2.23E-03	9.77E-03
	06-01B Die Forging (fugitive)	2.20	9.65	6.61E-03	0.03	0.03	0.14	4.40E-03	0.02	5.51E-03	0.02	0.05	0.22
	Total Emission Point 06-01 (fugitive)	2.30	10.08	6.90E-03	0.03	0.03	0.15	4.60E-03	0.02	5.75E-03	0.03	0.05	0.23
06-02	Main Press (point)	5.65	24.73									0	0

Note: Emissions of chromium, manganese, nickel, and phosphorus are based on the PM emission rate * maximum weight % of metal in steel.

Line 4 Shot Blast Machine (06-04) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Process Data (06-04)

Maximum Hourly Steel Shot Usage (lb/hr)	118.59	(based on current permit limit of 0.059 ton/hr)
Maximum Annual Steel Shot Usage (tons/yr)	519	(based on 8,760 hours/yr)
Maximum Chromium Content of Steel Shot (%)	0%	(based on Metaltec steel shot MSDS dated 1/1/08)
Maximum Manganese Content of Steel Shot (%)	0.90%	
Maximum Nickel Content of Steel Shot (%)	0%	
Maximum Phosphorus Content of Steel Shot (%)	0%	

Emissions Data (Emission Point 06-04)

PM Controlled Emission Factor (lb/1000 lb Abrasive)	0.69	(based on AP-42 Table 13.2.6-1 (9/97); PM emissions controlled by fabric filter)
Maximum Hourly PM Emissions (lb/hr)	0.08	
Maximum Annual PM Emissions (tons/yr)	0.36	
Maximum Hourly Chromium Emissions (lb/hr)	0	(based on PM emissions and maximum chromium content of steel shot)
Maximum Annual Chromium Emissions (tons/yr)	0	
Maximum Hourly Manganese Emissions (lb/hr)	7.36E-04	(based on PM emissions and maximum manganese content of steel shot)
Maximum Annual Manganese Emissions (tons/yr)	3.23E-03	
Maximum Hourly Nickel Emissions (lb/hr)	0	(based on PM emissions and maximum nickel content of steel shot)
Maximum Annual Nickel Emissions (tons/yr)	0	
Maximum Hourly Phosphorus Emissions (lb/hr)	0	(based on PM emissions and maximum phosphorus content of steel shot)
Maximum Annual Phosphorus Emissions (tons/yr)	0	
Total HAPs Emissions (lb/hr)	7.36E-04	
Total HAPs Emissions (tons/yr)	3.23E-03	

Two-Dimension Bar Coding System (IA21) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Bar Coding System Production Rate (parts/hr)	240	(one part every 15 seconds)
Estimated Ink Consumption Rate (parts/quart)	4700	
Bar Coding System Ink Usage Rate (gal/hr)	0.013	
Potential Annual Ink Usage (gal/yr)	112	(based on 8760 hr/yr operation)
Laser Marking White Ink Density (lb/gal)	10.76	(Infosight Corp. MSDS dated 9/16/03)
Laser Marking White Ink VOC Content (lb/gal)	4	(Infosight Corp. MSDS dated 9/16/03)
Laser Marking White Ink Xylene Content (% by weight)	30%	(Infosight Corp. MSDS dated 9/16/03)
Laser Marking White Ink Ethylbenzene Content (% by weight)	10%	(Infosight Corp. MSDS dated 9/16/03)
Laser Marking White Ink Toluene Content (% by weight)	1%	(Infosight Corp. MSDS dated 9/16/03)
Laser Marking White Ink Benzene Content (% by weight)	0.0015%	(Infosight Corp. MSDS dated 9/16/03, 15 ppm)
Cleanup Solvent (Ethyl Acetate, VOC) Usage (gal/yr)	11.18	(assume 10% of annual ink usage)
Ethyl Acetate Specific Gravity	0.9	
Ethyl Acetate VOC (lb/gal)	7.506	

Potential Annual Emissions

Pollutant	tons/yr	lb/hr
VOC	0.27	0.06
Benzene	9.02E-06	2.06E-06
Ethylbenzene	0.06	0.01
Toluene	6.02E-03	1.37E-03
Xylene	0.18	0.04
Total HAPs	0.25	0.06

Die Shop Natural Gas Fired Die Pre-Heaters (01-05) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 01-05 Information

Die Shop Pre-Heater (mmBTU/hr)	0.25	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Die Shop Pre-Heater (mmcf/hr)	2.45E-04	
Number of Heaters	4	
Total Capacity (mmBTU/hr)	1.00	
Total Capacity (mmcf/hr)	9.80E-04	

EU 01-05 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Emissions per 0.05 mmBTU/hr Pre-Heater (tons/yr)	Total Emissions (tons/yr)
CO	84	0.09	0.36
NO_x	100	0.11	0.43
OC	11	0.01	0.05
Filterable PM	1.9	2.04E-03	8.16E-03
Filterable PM_{10}	1.9	2.04E-03	8.16E-03
Filterable $PM_{2.5}$	1.9	2.04E-03	8.16E-03
Condensable PM	5.7	6.12E-03	0.02
Condensable PM_{10}	5.7	6.12E-03	0.02
Condensable $PM_{2.5}$	5.7	6.12E-03	0.02
Total PM	7.6	8.16E-03	0.03
Total PM_{10}	7.6	8.16E-03	0.03
Total $PM_{2.5}$	7.6	8.16E-03	0.03
SO_2	0.6	6.44E-04	2.58E-03
VOC	5.5	5.90E-03	0.02

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Die Shop Natural Gas Fired Die Pre-Heaters (01-05) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 01-05 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	0.05 mmBTU/hr Pre-Heater Emissions (tons/yr)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	2.83E-07	1.13E-06
Benzene	2.10E-03	2.25E-06	9.02E-06
Beryllium Compounds[a]	3.33E-05	3.58E-08	1.43E-07
Cadmium Compounds[a]	1.26E-03	1.35E-06	5.40E-06
Chromium Compounds[a]	1.83E-03	1.97E-06	7.86E-06
Cobalt Compounds[a]	1.07E-04	1.15E-07	4.59E-07
Dichlorobenzene	1.20E-03	1.29E-06	5.15E-06
Formaldehyde	0.08	8.05E-05	3.22E-04
Hexane	1.80	1.93E-03	7.73E-03
Lead Compounds[a]	5.39E-04	5.78E-07	2.31E-06
Manganese Compounds[a]	4.91E-04	5.27E-07	2.11E-06
Mercury Compounds[a]	2.70E-04	2.90E-07	1.16E-06
Naphthalene	6.10E-04	6.55E-07	2.62E-06
Nickel Compounds[a]	2.67E-03	2.87E-06	1.15E-05
Selenium Compounds[a]	3.37E-05	3.62E-08	1.45E-07
Toluene	3.40E-03	3.65E-06	1.46E-05
Total Polycyclic Organic Matter (POM)	8.82E-05	9.47E-08	3.79E-07
2-Methylnaphthalene - POM	2.40E-05	2.58E-08	1.03E-07
3-Methylcholanthrene - POM	1.80E-06	1.93E-09	7.73E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	1.72E-08	6.87E-08
Acenaphthene - POM	1.80E-06	1.93E-09	7.73E-09
Acenaphthylene - POM	1.80E-06	1.93E-09	7.73E-09
Anthracene - POM	2.40E-06	2.58E-09	1.03E-08
Benz(a)anthracene - POM	1.80E-06	1.93E-09	7.73E-09
Benzo(a)pyrene - POM	1.20E-06	1.29E-09	5.15E-09
Benzo(b)fluoranthene - POM	1.80E-06	1.93E-09	7.73E-09
Benzo(g,h,i)perylene - POM	1.20E-06	1.29E-09	5.15E-09
Benzo(k)fluoranthene - POM	1.80E-06	1.93E-09	7.73E-09
Chrysene - POM	1.80E-06	1.93E-09	7.73E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	1.29E-09	5.15E-09
Fluoranthene - POM	3.00E-06	3.22E-09	1.29E-08
Fluorene - POM	2.80E-06	3.01E-09	1.20E-08
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	1.93E-09	7.73E-09
Phenanathrene - POM	1.70E-05	1.83E-08	7.30E-08
Pyrene - POM	5.00E-06	5.37E-09	2.15E-08
Total HAPs		2.03E-03	8.12E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Line 1 Natural Gas Fired Die Pre-Heater (02-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 02-03 Information

Line 1 Pre-Heater (mmBTU/hr)	0.30	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/hr)	0.30	
Total Capacity (mmcf/hr)	2.94E-04	

EU 02-03 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	0.11
NO_x	100	0.13
OC	11	1.42E-02
Filterable PM	1.9	2.45E-03
Filterable PM_{10}	1.9	2.45E-03
Filterable $PM_{2.5}$	1.9	2.45E-03
Condensable PM	5.7	7.34E-03
Condensable PM_{10}	5.7	7.34E-03
Condensable $PM_{2.5}$	5.7	7.34E-03
Total PM	7.6	9.79E-03
Total PM_{10}	7.6	9.79E-03
Total $PM_{2.5}$	7.6	9.79E-03
SO_2	0.6	7.73E-04
VOC	5.5	7.09E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Line 1 Natural Gas Fired Die Pre-Heater (02-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 02-03 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	3.40E-07
Benzene	2.10E-03	2.71E-06
Beryllium Compounds[a]	3.33E-05	4.29E-08
Cadmium Compounds[a]	1.26E-03	1.62E-06
Chromium Compounds[a]	1.83E-03	2.36E-06
Cobalt Compounds[a]	1.07E-04	1.38E-07
Dichlorobenzene	1.20E-03	1.55E-06
Formaldehyde	0.08	9.66E-05
Hexane	1.80	2.32E-03
Lead Compounds[a]	5.39E-04	6.94E-07
Manganese Compounds[a]	4.91E-04	6.32E-07
Mercury Compounds[a]	2.70E-04	3.48E-07
Naphthalene	6.10E-04	7.86E-07
Nickel Compounds[a]	2.67E-03	3.44E-06
Selenium Compounds[a]	3.37E-05	4.34E-08
Toluene	3.40E-03	4.38E-06
Total Polycyclic Organic Matter (POM)	8.82E-05	1.14E-07
2-Methylnaphthalene - POM	2.40E-05	3.09E-08
3-Methylcholanthrene - POM	1.80E-06	2.32E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	2.06E-08
Acenaphthene - POM	1.80E-06	2.32E-09
Acenaphthylene - POM	1.80E-06	2.32E-09
Anthracene - POM	2.40E-06	3.09E-09
Benz(a)anthracene - POM	1.80E-06	2.32E-09
Benzo(a)pyrene - POM	1.20E-06	1.55E-09
Benzo(b)fluoranthene - POM	1.80E-06	2.32E-09
Benzo(g,h,i)perylene - POM	1.20E-06	1.55E-09
Benzo(k)fluoranthene - POM	1.80E-06	2.32E-09
Chrysene - POM	1.80E-06	2.32E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	1.55E-09
Fluoranthene - POM	3.00E-06	3.86E-09
Fluorene - POM	2.80E-06	3.61E-09
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	2.32E-09
Phenanathrene - POM	1.70E-05	2.19E-08
Pyrene - POM	5.00E-06	6.44E-09
Total HAPs		2.43E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Line 2 Natural Gas Fired Die Pre-Heater (03-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 03-03 Information

Line 2 Pre-Heater (mmBTU/hr)	0.30	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/hr)	0.30	
Total Capacity (mmcf/hr)	2.94E-04	

EU 03-03 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	0.11
NO_x	100	0.13
OC	11	1.42E-02
Filterable PM	1.9	2.45E-03
Filterable PM_{10}	1.9	2.45E-03
Filterable $PM_{2.5}$	1.9	2.45E-03
Condensable PM	5.7	7.34E-03
Condensable PM_{10}	5.7	7.34E-03
Condensable $PM_{2.5}$	5.7	7.34E-03
Total PM	7.6	9.79E-03
Total PM_{10}	7.6	9.79E-03
Total $PM_{2.5}$	7.6	9.79E-03
SO_2	0.6	7.73E-04
VOC	5.5	7.09E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Line 2 Natural Gas Fired Die Pre-Heater (03-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 03-03 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	3.40E-07
Benzene	2.10E-03	2.71E-06
Beryllium Compounds[a]	3.33E-05	4.29E-08
Cadmium Compounds[a]	1.26E-03	1.62E-06
Chromium Compounds[a]	1.83E-03	2.36E-06
Cobalt Compounds[a]	1.07E-04	1.38E-07
Dichlorobenzene	1.20E-03	1.55E-06
Formaldehyde	0.08	9.66E-05
Hexane	1.80	2.32E-03
Lead Compounds[a]	5.39E-04	6.94E-07
Manganese Compounds[a]	4.91E-04	6.32E-07
Mercury Compounds[a]	2.70E-04	3.48E-07
Naphthalene	6.10E-04	7.86E-07
Nickel Compounds[a]	2.67E-03	3.44E-06
Selenium Compounds[a]	3.37E-05	4.34E-08
Toluene	3.40E-03	4.38E-06
Total Polycyclic Organic Matter (POM)	8.82E-05	1.14E-07
2-Methylnaphthalene - POM	2.40E-05	3.09E-08
3-Methylcholanthrene - POM	1.80E-06	2.32E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	2.06E-08
Acenaphthene - POM	1.80E-06	2.32E-09
Acenaphthylene - POM	1.80E-06	2.32E-09
Anthracene - POM	2.40E-06	3.09E-09
Benz(a)anthracene - POM	1.80E-06	2.32E-09
Benzo(a)pyrene - POM	1.20E-06	1.55E-09
Benzo(b)fluoranthene - POM	1.80E-06	2.32E-09
Benzo(g,h,i)perylene - POM	1.20E-06	1.55E-09
Benzo(k)fluoranthene - POM	1.80E-06	2.32E-09
Chrysene - POM	1.80E-06	2.32E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	1.55E-09
Fluoranthene - POM	3.00E-06	3.86E-09
Fluorene - POM	2.80E-06	3.61E-09
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	2.32E-09
Phenanathrene - POM	1.70E-05	2.19E-08
Pyrene - POM	5.00E-06	6.44E-09
Total HAPs		2.43E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Line 3 Natural Gas Fired Die Pre-Heater (05-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 05-03 Information

Line 3 Pre-Heater (mmBTU/hr)	0.60	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/hr)	0.60	
Total Capacity (mmcf/hr)	5.88E-04	

EU 05-03 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	0.22
NO_x	100	0.26
OC	11	0.03
Filterable PM	1.9	4.90E-03
Filterable PM_{10}	1.9	4.90E-03
Filterable $PM_{2.5}$	1.9	4.90E-03
Condensable PM	5.7	1.47E-02
Condensable PM_{10}	5.7	1.47E-02
Condensable $PM_{2.5}$	5.7	1.47E-02
Total PM	7.6	0.02
Total PM_{10}	7.6	0.02
Total $PM_{2.5}$	7.6	0.02
SO_2	0.6	1.55E-03
VOC	5.5	1.42E-02

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Line 3 Natural Gas Fired Die Pre-Heater (05-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 05-03 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	6.80E-07
Benzene	2.10E-03	5.41E-06
Beryllium Compounds[a]	3.33E-05	8.59E-08
Cadmium Compounds[a]	1.26E-03	3.24E-06
Chromium Compounds[a]	1.83E-03	4.72E-06
Cobalt Compounds[a]	1.07E-04	2.75E-07
Dichlorobenzene	1.20E-03	3.09E-06
Formaldehyde	0.08	1.93E-04
Hexane	1.80	4.64E-03
Lead Compounds[a]	5.39E-04	1.39E-06
Manganese Compounds[a]	4.91E-04	1.26E-06
Mercury Compounds[a]	2.70E-04	6.97E-07
Naphthalene	6.10E-04	1.57E-06
Nickel Compounds[a]	2.67E-03	6.88E-06
Selenium Compounds[a]	3.37E-05	8.69E-08
Toluene	3.40E-03	8.76E-06
Total Polycyclic Organic Matter (POM)	8.82E-05	2.27E-07
2-Methylnaphthalene - POM	2.40E-05	6.18E-08
3-Methylcholanthrene - POM	1.80E-06	4.64E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	4.12E-08
Acenaphthene - POM	1.80E-06	4.64E-09
Acenaphthylene - POM	1.80E-06	4.64E-09
Anthracene - POM	2.40E-06	6.18E-09
Benz(a)anthracene - POM	1.80E-06	4.64E-09
Benzo(a)pyrene - POM	1.20E-06	3.09E-09
Benzo(b)fluoranthene - POM	1.80E-06	4.64E-09
Benzo(g,h,i)perylene - POM	1.20E-06	3.09E-09
Benzo(k)fluoranthene - POM	1.80E-06	4.64E-09
Chrysene - POM	1.80E-06	4.64E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	3.09E-09
Fluoranthene - POM	3.00E-06	7.73E-09
Fluorene - POM	2.80E-06	7.21E-09
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	4.64E-09
Phenanathrene - POM	1.70E-05	4.38E-08
Pyrene - POM	5.00E-06	1.29E-08
Total HAPs		4.87E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Line 4 Natural Gas Fired Die-Pre-Heater (06-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 06-03 Information

Line 4 Pre-Heater (mmBTU/hr)	0.60	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/hr)	0.60	
Total Capacity (mmcf/hr)	5.88E-04	

EU 06-03 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	0.22
NO_x	100	0.26
OC	11	2.83E-02
Filterable PM	1.9	4.90E-03
Filterable PM_{10}	1.9	4.90E-03
Filterable $PM_{2.5}$	1.9	4.90E-03
Condensable PM	5.7	1.47E-02
Condensable PM_{10}	5.7	1.47E-02
Condensable $PM_{2.5}$	5.7	1.47E-02
Total PM	7.6	1.96E-02
Total PM_{10}	7.6	1.96E-02
Total $PM_{2.5}$	7.6	1.96E-02
SO_2	0.6	1.55E-03
VOC	5.5	1.42E-02

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Line 4 Natural Gas Fired Die-Pre-Heater (06-03) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

EU 06-03 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	6.80E-07
Benzene	2.10E-03	5.41E-06
Beryllium Compounds[a]	3.33E-05	8.59E-08
Cadmium Compounds[a]	1.26E-03	3.24E-06
Chromium Compounds[a]	1.83E-03	4.72E-06
Cobalt Compounds[a]	1.07E-04	2.75E-07
Dichlorobenzene	1.20E-03	3.09E-06
Formaldehyde	0.08	1.93E-04
Hexane	1.80	4.64E-03
Lead Compounds[a]	5.39E-04	1.39E-06
Manganese Compounds[a]	4.91E-04	1.26E-06
Mercury Compounds[a]	2.70E-04	6.97E-07
Naphthalene	6.10E-04	1.57E-06
Nickel Compounds[a]	2.67E-03	6.88E-06
Selenium Compounds[a]	3.37E-05	8.69E-08
Toluene	3.40E-03	8.76E-06
Total Polycyclic Organic Matter (POM)	8.82E-05	2.27E-07
2-Methylnaphthalene - POM	2.40E-05	6.18E-08
3-Methylcholanthrene - POM	1.80E-06	4.64E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	4.12E-08
Acenaphthene - POM	1.80E-06	4.64E-09
Acenaphthylene - POM	1.80E-06	4.64E-09
Anthracene - POM	2.40E-06	6.18E-09
Benz(a)anthracene - POM	1.80E-06	4.64E-09
Benzo(a)pyrene - POM	1.20E-06	3.09E-09
Benzo(b)fluoranthene - POM	1.80E-06	4.64E-09
Benzo(g,h,i)perylene - POM	1.20E-06	3.09E-09
Benzo(k)fluoranthene - POM	1.80E-06	4.64E-09
Chrysene - POM	1.80E-06	4.64E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	3.09E-09
Fluoranthene - POM	3.00E-06	7.73E-09
Fluorene - POM	2.80E-06	7.21E-09
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	4.64E-09
Phenanathrene - POM	1.70E-05	4.38E-08
Pyrene - POM	5.00E-06	1.29E-08
Total HAPs		4.87E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Line 4 Hand Deburring/Grinding (06-05) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

06-05 Grinding Information

Maximum Annual Number of Parts Processed (parts/yr)	692,118	Reference: Production records and a safety factor of 50%.
Average Part Weight (lb/part)	55.13	
Total Amount Processed (tons)	19,077	

Particulate Emissions

Pollutant	Emission Factor (lb/ton)	Emissions (tons)
PM	4.50E-03	0.04

Emission Factor Reference: USEPA FIRE Database Version 6.25 and WebFIRE (12/05) for steel finishing operations (SCC 3-04-007-15)

Building 1 and Building 2 Natural Gas Fired Space Heaters (IA7) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA7 Information

Building 1 Space Heater (mmBTU/hr)	6.48	
Building 2 Space Heater (mmBTU/hr)	6.62	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Building 1 Space Heater (mmcf/hr)	6.35E-03	
Building 2 Space Heater (mmcf/hr)	6.49E-03	
Number of Heaters Building 1	2	
Number of Heaters Building 2	2	
Total Capacity (mmBTU/hr)	26.20	
Total Capacity (mmcf/hr)	0.03	

IA7 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Emissions per 6.48 mmBTU/hr Space Heater (tons/yr)	Emissions per 6.62 mmBTU/hr Space Heater (tons/yr)	Total Emissions (tons/yr)
CO	84	2.34	2.39	9.45
NO_x	100	2.78	2.84	11.25
OC	11	0.31	0.31	1.24
Filterable PM	1.9	0.05	0.05	0.21
Filterable PM_{10}	1.9	0.05	0.05	0.21
Filterable $PM_{2.5}$	1.9	0.05	0.05	0.21
Condensable PM	5.7	0.16	0.16	0.64
Condensable PM_{10}	5.7	0.16	0.16	0.64
Condensable $PM_{2.5}$	5.7	0.16	0.16	0.64
Total PM	7.6	0.21	0.22	0.86
Total PM_{10}	7.6	0.21	0.22	0.86
Total $PM_{2.5}$	7.6	0.21	0.22	0.86
SO_2	0.6	0.02	0.02	0.07
VOC	5.5	0.15	0.16	0.62

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Building 1 and Building 2 Natural Gas Fired Space Heaters (IA7) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA7 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	6.48 mmBTU/hr Space Heater (tons/yr)	6.62 mmBTU/hr Space Heater (tons/yr)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	7.35E-06	7.50E-06	2.97E-05
Benzene	2.10E-03	5.84E-05	5.97E-05	2.36E-04
Beryllium Compounds[a]	3.33E-05	9.28E-07	9.48E-07	3.75E-06
Cadmium Compounds[a]	1.26E-03	3.50E-05	3.57E-05	1.41E-04
Chromium Compounds[a]	1.83E-03	5.09E-05	5.20E-05	2.06E-04
Cobalt Compounds[a]	1.07E-04	2.97E-06	3.04E-06	1.20E-05
Dichlorobenzene	1.20E-03	3.34E-05	3.41E-05	1.35E-04
Formaldehyde	0.08	2.09E-03	2.13E-03	8.44E-03
Hexane	1.80	0.05	0.05	0.20
Lead Compounds[a]	5.39E-04	1.50E-05	1.53E-05	6.06E-05
Manganese Compounds[a]	4.91E-04	1.36E-05	1.39E-05	5.52E-05
Mercury Compounds[a]	2.70E-04	7.52E-06	7.69E-06	3.04E-05
Naphthalene	6.10E-04	1.70E-05	1.73E-05	6.86E-05
Nickel Compounds[a]	2.67E-03	7.43E-05	7.59E-05	3.00E-04
Selenium Compounds[a]	3.37E-05	9.38E-07	9.59E-07	3.79E-06
Toluene	3.40E-03	9.46E-05	9.67E-05	3.83E-04
Total Polycyclic Organic Matter (POM)	8.82E-05	2.45E-06	2.51E-06	9.92E-06
2-Methylnaphthalene - POM	2.40E-05	6.68E-07	6.82E-07	2.70E-06
3-Methylcholanthrene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	4.45E-07	4.55E-07	1.80E-06
Acenaphthene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Acenaphthylene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Anthracene - POM	2.40E-06	6.68E-08	6.82E-08	2.70E-07
Benz(a)anthracene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Benzo(a)pyrene - POM	1.20E-06	3.34E-08	3.41E-08	1.35E-07
Benzo(b)fluoranthene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Benzo(g,h,i)perylene - POM	1.20E-06	3.34E-08	3.41E-08	1.35E-07
Benzo(k)fluoranthene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Chrysene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Dibenzo(a,h)anthracene - POM	1.20E-06	3.34E-08	3.41E-08	1.35E-07
Fluoranthene - POM	3.00E-06	8.35E-08	8.53E-08	3.38E-07
Fluorene - POM	2.80E-06	7.79E-08	7.96E-08	3.15E-07
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	5.01E-08	5.12E-08	2.03E-07
Phenanathrene - POM	1.70E-05	4.73E-07	4.83E-07	1.91E-06
Pyrene - POM	5.00E-06	1.39E-07	1.42E-07	5.63E-07
Total HAPs		0.05	0.05	0.21

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Infrared Natural Gas Fired Heaters (IA8) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA8 Information

Infrared Heater 1 (mmBTU/hr)	0.06	
Infrared Heater 2 (mmBTU/hr)	0.1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Infrared Heater 1 (mmcf/hr)	5.88E-05	
Infrared Heater 2 (mmcf/hr)	9.80E-05	
Number of Heaters 1	3	
Number of Heaters 2	9	
Total Capacity (mmBTU/hr)	1.08	
Total Capacity (mmcf/hr)	1.06E-03	

IA8 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	0.06 mmBTU/hr Infrared Heater Emissions (tons/yr)	0.1 mmBTU/hr Infrared Heater Emissions (tons/yr)	Total Emissions (tons/yr)
CO	84	0.02	0.04	0.39
NO_x	100	0.03	0.04	0.46
OC	11	2.83E-03	4.72E-03	0.05
Filterable PM	1.9	4.90E-04	8.16E-04	8.81E-03
Filterable PM_{10}	1.9	4.90E-04	8.16E-04	8.81E-03
Filterable $PM_{2.5}$	1.9	4.90E-04	8.16E-04	8.81E-03
Condensable PM	5.7	1.47E-03	2.45E-03	0.03
Condensable PM_{10}	5.7	1.47E-03	2.45E-03	0.03
Condensable $PM_{2.5}$	5.7	1.47E-03	2.45E-03	0.03
Total PM	7.6	1.96E-03	3.26E-03	0.04
Total PM_{10}	7.6	1.96E-03	3.26E-03	0.04
Total $PM_{2.5}$	7.6	1.96E-03	3.26E-03	0.04
SO_2	0.6	1.55E-04	2.58E-04	2.78E-03
VOC	5.5	1.42E-03	2.36E-03	0.03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Infrared Natural Gas Fired Heaters (IA8) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA8 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	0.06 mmBTU/hr Infrared Heater Emissions (tons/yr)	0.1 mmBTU/hr Infrared Heater Emissions (tons/yr)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	6.80E-08	1.13E-07	1.22E-06
Benzene	2.10E-03	5.41E-07	9.02E-07	9.74E-06
Beryllium Compounds[a]	3.33E-05	8.59E-09	1.43E-08	1.55E-07
Cadmium Compounds[a]	1.26E-03	3.24E-07	5.40E-07	5.83E-06
Chromium Compounds[a]	1.83E-03	4.72E-07	7.86E-07	8.49E-06
Cobalt Compounds[a]	1.07E-04	2.75E-08	4.59E-08	4.95E-07
Dichlorobenzene	1.20E-03	3.09E-07	5.15E-07	5.57E-06
Formaldehyde	0.08	1.93E-05	3.22E-05	3.48E-04
Hexane	1.80	4.64E-04	7.73E-04	8.35E-03
Lead Compounds[a]	5.39E-04	1.39E-07	2.31E-07	2.50E-06
Manganese Compounds[a]	4.91E-04	1.26E-07	2.11E-07	2.27E-06
Mercury Compounds[a]	2.70E-04	6.97E-08	1.16E-07	1.25E-06
Naphthalene	6.10E-04	1.57E-07	2.62E-07	2.83E-06
Nickel Compounds[a]	2.67E-03	6.88E-07	1.15E-06	1.24E-05
Selenium Compounds[a]	3.37E-05	8.69E-09	1.45E-08	1.56E-07
Toluene	3.40E-03	8.76E-07	1.46E-06	1.58E-05
Total Polycyclic Organic Matter (POM)	8.82E-05	2.27E-08	3.79E-08	4.09E-07
2-Methylnaphthalene - POM	2.40E-05	6.18E-09	1.03E-08	1.11E-07
3-Methylcholanthrene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	4.12E-09	6.87E-09	7.42E-08
Acenaphthene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Acenaphthylene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Anthracene - POM	2.40E-06	6.18E-10	1.03E-09	1.11E-08
Benz(a)anthracene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Benzo(a)pyrene - POM	1.20E-06	3.09E-10	5.15E-10	5.57E-09
Benzo(b)fluoranthene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Benzo(g,h,i)perylene - POM	1.20E-06	3.09E-10	5.15E-10	5.57E-09
Benzo(k)fluoranthene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Chrysene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	3.09E-10	5.15E-10	5.57E-09
Fluoranthene - POM	3.00E-06	7.73E-10	1.29E-09	1.39E-08
Fluorene - POM	2.80E-06	7.21E-10	1.20E-09	1.30E-08
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	4.64E-10	7.73E-10	8.35E-09
Phenanathrene - POM	1.70E-05	4.38E-09	7.30E-09	7.88E-08
Pyrene - POM	5.00E-06	1.29E-09	2.15E-09	2.32E-08
Total HAPs		4.87E-04	8.12E-04	8.76E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Natural Gas Fired Space Heater (IA9) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA9 Information

Die Shop Pre-Heater (mmBTU/hr)	3.50	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/hr)	3.50	
Total Capacity (mmcf/hr)	3.43E-03	

IA9 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	1.26
NO_x	100	1.50
OC	11	0.17
Filterable PM	1.9	0.03
Filterable PM_{10}	1.9	0.03
Filterable $PM_{2.5}$	1.9	0.03
Condensable PM	5.7	0.09
Condensable PM_{10}	5.7	0.09
Condensable $PM_{2.5}$	5.7	0.09
Total PM	7.6	0.11
Total PM_{10}	7.6	0.11
Total $PM_{2.5}$	7.6	0.11
SO_2	0.6	9.02E-03
VOC	5.5	0.08

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Natural Gas Fired Space Heater (IA9) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA9 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	3.97E-06
Benzene	2.10E-03	3.16E-05
Beryllium Compounds[a]	3.33E-05	5.01E-07
Cadmium Compounds[a]	1.26E-03	1.89E-05
Chromium Compounds[a]	1.83E-03	2.75E-05
Cobalt Compounds[a]	1.07E-04	1.60E-06
Dichlorobenzene	1.20E-03	1.80E-05
Formaldehyde	0.08	1.13E-03
Hexane	1.80	0.03
Lead Compounds[a]	5.39E-04	8.10E-06
Manganese Compounds[a]	4.91E-04	7.37E-06
Mercury Compounds[a]	2.70E-04	4.06E-06
Naphthalene	6.10E-04	9.17E-06
Nickel Compounds[a]	2.67E-03	4.01E-05
Selenium Compounds[a]	3.37E-05	5.07E-07
Toluene	3.40E-03	5.11E-05
Total Polycyclic Organic Matter (POM)	8.82E-05	1.33E-06
2-Methylnaphthalene - POM	2.40E-05	3.61E-07
3-Methylcholanthrene - POM	1.80E-06	2.71E-08
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	2.40E-07
Acenaphthene - POM	1.80E-06	2.71E-08
Acenaphthylene - POM	1.80E-06	2.71E-08
Anthracene - POM	2.40E-06	3.61E-08
Benz(a)anthracene - POM	1.80E-06	2.71E-08
Benzo(a)pyrene - POM	1.20E-06	1.80E-08
Benzo(b)fluoranthene - POM	1.80E-06	2.71E-08
Benzo(g,h,i)perylene - POM	1.20E-06	1.80E-08
Benzo(k)fluoranthene - POM	1.80E-06	2.71E-08
Chrysene - POM	1.80E-06	2.71E-08
Dibenzo(a,h)anthracene - POM	1.20E-06	1.80E-08
Fluoranthene - POM	3.00E-06	4.51E-08
Fluorene - POM	2.80E-06	4.21E-08
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	2.71E-08
Phenanathrene - POM	1.70E-05	2.56E-07
Pyrene - POM	5.00E-06	7.51E-08
Total HAPs		0.03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Natural Gas Fired Space Heaters (IA10) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA10 Information

Space Heater 1 (mmBTU/hr)	0.30	
Space Heater 2 (mmBTU/hr)	0.05	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Space Heater 1 (mmcf/hr)	2.94E-04	
Space Heater 2 (mmcf/hr)	4.90E-05	
Number of Heaters 1	18	
Number of Heaters 2	3	
Total Capacity (mmBTU/hr)	5.55	
Total Capacity (mmcf/hr)	0.01	

IA10 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Emissions per 0.30 mmBTU/hr Space Heater (tons/yr)	Emissions per 0.05 mmBTU/hr Space Heater (tons/yr)	Total Emissions (tons/yr)
CO	84	0.11	0.02	2.00
NO_x	100	0.13	0.02	2.38
OC	11	0.01	2.36E-03	0.26
Filterable PM	1.9	2.45E-03	4.08E-04	0.05
Filterable PM_{10}	1.9	2.45E-03	4.08E-04	0.05
Filterable $PM_{2.5}$	1.9	2.45E-03	4.08E-04	0.05
Condensable PM	5.7	7.34E-03	1.22E-03	0.14
Condensable PM_{10}	5.7	7.34E-03	1.22E-03	0.14
Condensable $PM_{2.5}$	5.7	7.34E-03	1.22E-03	0.14
Total PM	7.6	9.79E-03	1.63E-03	0.18
Total PM_{10}	7.6	9.79E-03	1.63E-03	0.18
Total $PM_{2.5}$	7.6	9.79E-03	1.63E-03	0.18
SO_2	0.6	7.73E-04	1.29E-04	0.01
VOC	5.5	7.09E-03	1.18E-03	0.13

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Natural Gas Fired Space Heaters (IA10) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA10 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	0.30 mmBTU/hr Space Heater Emissions (tons/yr)	0.05 mmBTU/hr Space Heater Emissions (tons/yr)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	3.40E-07	5.67E-08	6.29E-06
Benzene	2.10E-03	2.71E-06	4.51E-07	5.00E-05
Beryllium Compounds[a]	3.33E-05	4.29E-08	7.16E-09	7.94E-07
Cadmium Compounds[a]	1.26E-03	1.62E-06	2.70E-07	3.00E-05
Chromium Compounds[a]	1.83E-03	2.36E-06	3.93E-07	4.36E-05
Cobalt Compounds[a]	1.07E-04	1.38E-07	2.29E-08	2.54E-06
Dichlorobenzene	1.20E-03	1.55E-06	2.58E-07	2.86E-05
Formaldehyde	0.08	9.66E-05	1.61E-05	1.79E-03
Hexane	1.80	2.32E-03	3.86E-04	0.04
Lead Compounds[a]	5.39E-04	6.94E-07	1.16E-07	1.28E-05
Manganese Compounds[a]	4.91E-04	6.32E-07	1.05E-07	1.17E-05
Mercury Compounds[a]	2.70E-04	3.48E-07	5.80E-08	6.44E-06
Naphthalene	6.10E-04	7.86E-07	1.31E-07	1.45E-05
Nickel Compounds[a]	2.67E-03	3.44E-06	5.73E-07	6.36E-05
Selenium Compounds[a]	3.37E-05	4.34E-08	7.24E-09	8.04E-07
Toluene	3.40E-03	4.38E-06	7.30E-07	8.10E-05
Total Polycyclic Organic Matter (POM)	8.82E-05	1.14E-07	1.89E-08	2.10E-06
2-Methylnaphthalene - POM	2.40E-05	3.09E-08	5.15E-09	5.72E-07
3-Methylcholanthrene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	2.06E-08	3.44E-09	3.81E-07
Acenaphthene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Acenaphthylene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Anthracene - POM	2.40E-06	3.09E-09	5.15E-10	5.72E-08
Benz(a)anthracene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Benzo(a)pyrene - POM	1.20E-06	1.55E-09	2.58E-10	2.86E-08
Benzo(b)fluoranthene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Benzo(g,h,i)perylene - POM	1.20E-06	1.55E-09	2.58E-10	2.86E-08
Benzo(k)fluoranthene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Chrysene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Dibenzo(a,h)anthracene - POM	1.20E-06	1.55E-09	2.58E-10	2.86E-08
Fluoranthene - POM	3.00E-06	3.86E-09	6.44E-10	7.15E-08
Fluorene - POM	2.80E-06	3.61E-09	6.01E-10	6.67E-08
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	2.32E-09	3.86E-10	4.29E-08
Phenanathrene - POM	1.70E-05	2.19E-08	3.65E-09	4.05E-07
Pyrene - POM	5.00E-06	6.44E-09	1.07E-09	1.19E-07
Total HAPs		2.43E-03	4.06E-04	0.05

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Tool Shop Propane Tool Heater (IA12) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA12 Information

Die Shop Pre-Heater (mmBTU/hr)	1.00	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/hr)	1.00	
Total Capacity (mmcf/hr)	9.80E-04	

IA12 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	0.36
NO_x	100	0.43
OC	11	0.05
Filterable PM	1.9	8.16E-03
Filterable PM_{10}	1.9	8.16E-03
Filterable $PM_{2.5}$	1.9	8.16E-03
Condensable PM	5.7	0.02
Condensable PM_{10}	5.7	0.02
Condensable $PM_{2.5}$	5.7	0.02
Total PM	7.6	0.03
Total PM_{10}	7.6	0.03
Total $PM_{2.5}$	7.6	0.03
SO_2	0.6	2.58E-03
VOC	5.5	0.02

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Tool Shop Propane Tool Heater (IA12) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA12 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	1.13E-06
Benzene	2.10E-03	9.02E-06
Beryllium Compounds[a]	3.33E-05	1.43E-07
Cadmium Compounds[a]	1.26E-03	5.40E-06
Chromium Compounds[a]	1.83E-03	7.86E-06
Cobalt Compounds[a]	1.07E-04	4.59E-07
Dichlorobenzene	1.20E-03	5.15E-06
Formaldehyde	0.08	3.22E-04
Hexane	1.80	7.73E-03
Lead Compounds[a]	5.39E-04	2.31E-06
Manganese Compounds[a]	4.91E-04	2.11E-06
Mercury Compounds[a]	2.70E-04	1.16E-06
Naphthalene	6.10E-04	2.62E-06
Nickel Compounds[a]	2.67E-03	1.15E-05
Selenium Compounds[a]	3.37E-05	1.45E-07
Toluene	3.40E-03	1.46E-05
Total Polycyclic Organic Matter (POM)	8.82E-05	3.79E-07
2-Methylnaphthalene - POM	2.40E-05	1.03E-07
3-Methylcholanthrene - POM	1.80E-06	7.73E-09
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	6.87E-08
Acenaphthene - POM	1.80E-06	7.73E-09
Acenaphthylene - POM	1.80E-06	7.73E-09
Anthracene - POM	2.40E-06	1.03E-08
Benz(a)anthracene - POM	1.80E-06	7.73E-09
Benzo(a)pyrene - POM	1.20E-06	5.15E-09
Benzo(b)fluoranthene - POM	1.80E-06	7.73E-09
Benzo(g,h,i)perylene - POM	1.20E-06	5.15E-09
Benzo(k)fluoranthene - POM	1.80E-06	7.73E-09
Chrysene - POM	1.80E-06	7.73E-09
Dibenzo(a,h)anthracene - POM	1.20E-06	5.15E-09
Fluoranthene - POM	3.00E-06	1.29E-08
Fluorene - POM	2.80E-06	1.20E-08
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	7.73E-09
Phenanathrene - POM	1.70E-05	7.30E-08
Pyrene - POM	5.00E-06	2.15E-08
Total HAPs		8.12E-03

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Die Reworking Area MIG and TIG Welding Units (IA13) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA13 Information

Actual MIG Material Processed (lb)	1,500	Based on production data
Actual TIG Material Processed (lb)	300	
Total Actual Amount of Material Processed (lb)	1,800	
Maximum Potential Amount of Material Processed (lb)	2,700	Based on safety factor of 50%

IA13 Particulate Emissions

PM_{10} Total Fume Emission Factor ($lb/10^3$ lb)	81.6	Reference: AP-42 Section 12.19, Table 12.19-1 (1/95)
Total PM_{10} Emissions (tons)	0.11	

Note: Highest welding PM_{10} emission factor used for conservative purposes.

IA13 HAP Emissions

Pollutant	Emission Factor ($10^{-1}lb/10^3lb$)	Emissions (tons)
Chromium	44.1	0.06
Cobalt	0.01	1.35E-05
Lead	1.62	2.19E-03
Manganese	232	0.31
Nickel	17.1	0.02
Total HAPs		0.40

Note: Highest welding HAP emission factors used for conservative purposes.

Tanks (IA15-IA18,IA20) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Storage Tanks Information

Diesel Storage Tank VOC Emission Factor (lb/Mgal)	0.028	Reference: SCAQMD Guidelines for Manual Emissions Reporting dated December 2011
Turnovers (turnover/day)	1	

Tank Emissions

Unit	Tank Capacity (gallons)	Potential Annual Throughput (gallons)	Potential VOC Emissions (ton/yr)
IA15 Hydraulic Oil Tank	1,000	365,000	1.87E-03
IA16 Hydraulic Oil Tank	1,000	365,000	1.87E-03
IA17 Graphite Lube Tank	1,000	365,000	1.87E-03
IA18 Waste Oil AST	2,000	730,000	3.73E-03
IA20 Oil/Water Separator	10,000	3,650,000	0.02
IA20 Waste Water/Oil Pretreatment Tanks	5,950	2,171,750	0.01
IA24 Hydraulic Oil Tank	1,000	365,000	1.87E-03
IA25 EDM Oil Tank	750	273,750	1.40E-03
IA26 EDM Oil Tank	500	182,500	9.33E-04

Note: Assumed emissions similar to diesel storage for conservative emission estimation purposes.

Building 3 Natural Gas Fired Make-Up Air Heater (IA22) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA22 Information

Building 3 Space Heater (mmBTU/hr)	6.20	
Number of Heaters	1	
Natural Gas Heat Content (BTU/cf)	1020	Reference: AP-42 Section 1.4, Table 1.4-2 (7/98)
Total Capacity (mmBTU/h)	6.20	
Total Capacity (mmcf/hr)	6.08E-03	

IA22 Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
CO	84	2.24
NO_x	100	2.66
OC	11	0.29
Filterable PM	1.9	0.05
Filterable PM_{10}	1.9	0.05
Filterable $PM_{2.5}$	1.9	0.05
Condensable PM	5.7	0.15
Condensable PM_{10}	5.7	0.15
Condensable $PM_{2.5}$	5.7	0.15
Total PM	7.6	0.20
Total PM_{10}	7.6	0.20
Total $PM_{2.5}$	7.6	0.20
SO_2	0.6	0.02
VOC	5.5	0.15

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2 (7/98).

Building 3 Natural Gas Fired Make-Up Air Heater (IA22) Emissions
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

IA22 HAP Emissions

Pollutant	Emission Factor (lb/mmcf)	Total Emissions (tons/yr)
Arsenic Compounds[a]	2.64E-04	7.03E-06
Benzene	2.10E-03	5.59E-05
Beryllium Compounds[a]	3.33E-05	8.87E-07
Cadmium Compounds[a]	1.26E-03	3.35E-05
Chromium Compounds[a]	1.83E-03	4.87E-05
Cobalt Compounds[a]	1.07E-04	2.84E-06
Dichlorobenzene	1.20E-03	3.19E-05
Formaldehyde	0.08	2.00E-03
Hexane	1.80	0.05
Lead Compounds[a]	5.39E-04	1.43E-05
Manganese Compounds[a]	4.91E-04	1.31E-05
Mercury Compounds[a]	2.70E-04	7.20E-06
Naphthalene	6.10E-04	1.62E-05
Nickel Compounds[a]	2.67E-03	7.11E-05
Selenium Compounds[a]	3.37E-05	8.98E-07
Toluene	3.40E-03	9.05E-05
Total Polycyclic Organic Matter (POM)	8.82E-05	2.35E-06
2-Methylnaphthalene - POM	2.40E-05	6.39E-07
3-Methylcholanthrene - POM	1.80E-06	4.79E-08
7,12-Dimethylbenz(a)anthracene - POM	1.60E-05	4.26E-07
Acenaphthene - POM	1.80E-06	4.79E-08
Acenaphthylene - POM	1.80E-06	4.79E-08
Anthracene - POM	2.40E-06	6.39E-08
Benz(a)anthracene - POM	1.80E-06	4.79E-08
Benzo(a)pyrene - POM	1.20E-06	3.19E-08
Benzo(b)fluoranthene - POM	1.80E-06	4.79E-08
Benzo(g,h,i)perylene - POM	1.20E-06	3.19E-08
Benzo(k)fluoranthene - POM	1.80E-06	4.79E-08
Chrysene - POM	1.80E-06	4.79E-08
Dibenzo(a,h)anthracene - POM	1.20E-06	3.19E-08
Fluoranthene - POM	3.00E-06	7.99E-08
Fluorene - POM	2.80E-06	7.45E-08
Indeno(1,2,3-cd)pyrene - POM	1.80E-06	4.79E-08
Phenanathrene - POM	1.70E-05	4.53E-07
Pyrene - POM	5.00E-06	1.33E-07
Total HAPs		0.05

Reference: Emission factors from AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (7/98).

[a]Metal compounds emission factors based on base metal emission factor multiplied by the metal oxide ratio.

Metal Oxide Ratios
Application for Renewal of Conditional Major Permit
International Crankshaft Inc.
Source ID: 21-209-00039
PN: 5028-21-046 by JTL/BRG 10/25/2021

Metal	Metal Molecular Wt	Metal Oxide	Oxide Molecular Wt	Ratio Oxide:Metal
Arsenic	75	As2O3	198	1.32
Beryllium	9	BeO	25	2.78
Cadmium	112	CdO	128	1.14
Chromium	52	CrO	68	1.31
Cobalt	59	CoO	75	1.27
Lead	207	PbO	223	1.08
Manganese	55	MnO	71	1.29
Mercury	201	Hg2O	418	1.04
Nickel	59	NiO	75	1.27
Selenium	79	SeO2	111	1.41