REDACTED

PCC Structurals, Inc - Large Parts Campus
2018 TAC Emission Estimates
DEQ Specific Comments

Table	Note/Reference	CBI	Relevant Process	Comment
D1	1	N	LPC Alloy Data	Footnote states "See emissions inventory", but unredacted emissions inventory references "Information provided by client based on CBI - alloy composition data." Please provide original documents including composition data for DEQ review.
D1	2	N	LPC Alloy Data	Alloy Aluminum content is up to 16.1% aluminum, but aluminum reported with corresponding CAS is 0.48%. Please explain discrepancy. Provide product alloy composition data for DEQ review.
D1	b	Y	LPC Alloy Data	[redacted]
D1	c	Y	LPC Alloy Data	
D1	d	Y	LPC Alloy Data	
D2	none	N	Baghouse Data	Submit all analytical data used to generate Table D2 for DEQ review.
D3	k	N	Master Throughput and Production Rates	1. It is unclear if this footnote should be applied to this table as it is not referenced. If it does not apply, then please remove it.
D3	m	N	Master Throughput and Production Rates	1. It is unclear if this footnote should be applied to this table as it is not referenced. If it does not apply, then please remove it.
D3	a	N	Master Throughput and Production Rates	Provide production data to verify the total mass of metal poured, both on an annual and daily basis.
D3	b	N	Master Throughput and Production Rates	Provide production data from LPC-T and LPC-S to verify the total mass of metal poured, both on an annual and daily basis.
D3	c	N	Master Throughput and Production Rates	Provide production data from air and vacuum casting ingots used at LPC-S.
D3	d	N	Master Throughput and Production Rates	Provide annual production data and verification of annual days of operation to verify maximum daily parameter (lb/day).
D3	e	N	Master Throughput and Production Rates	Provide production data for *air casting, steel parts and ingots* and *air casting, steel ingots* to verify annual total metal poured for air casting.
D3	f	N	Master Throughput and Production Rates	Provide production data for *air casting parts* and *gating and air casting ingots* . Provide data supporting percent derivation for portion of metal pours that are routed to a baghouse. Provide baghouse performance data to verify emission factors used.
D3	g	N	Master Throughput and Production Rates	Provide production data to verify the total mass of metal poured for *vacuum casting, steel* ; *vacuum casting, steel parts* ; and *vacuum casting, steel ingots* .
D3	h	N	Master Throughput and Production Rates	Provide production data to verify the annual total mass of metal poured for vacuum casting. Provide data substantiating percentages assigned for parts cast to each furnace (MC1, VF3 & 4, VMM1, VMM2).
D3	i	N	Master Throughput and Production Rates	Provide production data to verify metal poured for vacuum casting parts, MC1 melting.
D3	n	N	Master Throughput and Production Rates	Provide production data to verify the total metal poured for parts.
D3	o	N	Master Throughput and Production Rates	Provide production data to verify the amount of metal used for casting, parts, and gating. Provide data supporting percent derivation for metal poured for gating.
D3	p	N	Master Throughput and Production Rates	Provide production data to verify the amount of air cast superalloy heat treated. Provide data supporting derivation of percentage of air casting heat treat furnace.
D3	q	N	Master Throughput and Production Rates	Provide production data to verify total vacuum cast superalloy heat treated. Provide data supporting derivation of percentage of vacuum casting heat treat furnace.
D3	r	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for titanium castings. Provide data supporting derivation of (1) percentage of metal removed as gating and (2) percentage of titanium parts heat treated as steel.
D3	s	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for Ti facility casting. Provide data supporting derivation of (1) percentage of metal poured for gating and (2) percentage of titanium parts heat treated at Ti facility.
D3	t	N	Master Throughput and Production Rates	Provide production data to verify total welding wire usage and daily usages at LPC-S, LPC-T, LSBSI, LSBSII, LMA, and TBS.
D3	3	N	Master Throughput and Production Rates	Provide typical production activity data for DEQ review.
D3	4	N	Master Throughput and Production Rates	Provide all production data referenced with this footnote for DEQ review.
D3	8	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for parts and gating, LPC-S.
D3	9	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for parts and gating, LPC-T.
D3	12	N	Master Throughput and Production Rates	Provide monthly usage data to verify paint throughput reported.
D3	13	N	Master Throughput and Production Rates	Provide data to substantiate the hours of operation and downtime hours reported.
D3	14	N	Master Throughput and Production Rates	Provide air casting production data to (1) substantiate the assumption that air casting occurs up to three days per week and (2) verify annual hours and days of operation reported.
D3	20	N	Master Throughput and Production Rates	Provide production information to verify percentages presented for titanium parts heat treated at PCC's various facilities.
D3	i	N	Master Throughput and Production Rates	Provide data supporting percent derivation for cooling emissions directed to baghouse.
D3	j	N	Master Throughput and Production Rates	Provide supporting calculations for each applicable "annual parameter (lb/yr)" and provide substantiation to verify annual days of operation.
D3	6	N	Master Throughput and Production Rates	Provide information supporting engineering judgment made in reference (6) asserting that each baghouse (0585 and 1807) receives an equal amount of dust.
D3	10	N	Master Throughput and Production Rates	Provide supporting information (e.g., product specifications or other materials) to verify the wax to metal density ratio presented in this footnote.
D3	t	N	Master Throughput and Production Rates	Provide data supporting derivation of percentage of welding wire wasted.
D3	6	N	Master Throughput and Production Rates	Provide all supporting calculations, methodologies, etc. used to make engineering judgment.
D3	16	N	Master Throughput and Production Rates	Provide supporting calculations, manufacturer data, and/or performance data used to develop engineering estimate of thermal oxidizer destruction efficiency.
D3	17	N	Master Throughput and Production Rates	Provide data (i.e., vacuum pump manufacturer data, engineering calculations, etc.) substantiating assumption that 50% of emissions are processed by dry vacuum pumps on the vacuum furnace. State which baghouse vacuum pumps are routed to.
D3	19	N	Master Throughput and Production Rates	Provide information supporting assumed percentages of metal poured for steel and titanium gating.
D3	21	N	Master Throughput and Production Rates	Provide data substantiating assumption that 75% of welding emissions are controlled by baghouses 5365 and 6418. Provide data substantiating the statement that that the building of interest is an "effective enclosure" with "minimal venting aside from the baghouses."
D3	l	N	Master Throughput and Production Rates	Provide data supporting reported amount of dust collected from baghouses in 2018.
D3	5	N	Master Throughput and Production Rates	Provide 2018 baghouse collection data for DEQ review.
D3	n	N	Master Throughput and Production Rates	This may be verified through submittal of the process flow diagram and detailed site diagram. Explain why no thermal oxidation applies to this wax component usage.
D3	u	N	Master Throughput and Production Rates	Provide manufacturer and/or performance data to verify combined baghouse+HEPA filter control efficiency reported (99.99997%).
D3	15	N	Master Throughput and Production Rates	Provide manufacturer and/or performance data to verify baghouse and HEPA filter control efficiencies reported.
D3	18	N	Master Throughput and Production Rates	Provide manufacturer data for the eight LPC heat treat furnaces for DEQ review
D3	7	N	Master Throughput and Production Rates	Submit the facility-provided information for DEQ review.
D3	11	N	Master Throughput and Production Rates	Provide original production data to verify Latex, with Thermal Oxidation, production/throughput amount.
1	c	N	Steel - Input Process Rates and Parameters	It is unclear if this footnote should be applied to this table as it is not referenced. If it does not apply, then please remove it.
1	2	N	Investing	Provide information supporting the reported number of annual oxidizer downtime hours.
1	3	N	Investing	Provide information supporting the reported number of operational hours.
1	4	N	Burnout Ovens	Provide data to verify daily and annual amounts of metal poured for parts and gating production.
2	1	N	Steel - Air Casting - Parts	Provide engineering testing results.
2	4	Y	Steel - Air Casting - Parts	[redacted]
2	5	Y	Steel - Air Casting - Parts	
2	a	Y	Steel - Air Casting - Parts	
2	b	Y	Steel - Air Casting - Parts	
2	d	Y	Steel - Air Casting - Parts	
2	1	N	Steel - Air Casting - Parts	Provide engineering estimate calculations and engineering testing results for DEQ review.
2	2	N	Steel - Air Casting - Parts	Provide data (i.e., manufacturer data, literature, performance data, etc.) supporting engineering judgment that 60% of emissions from Air Casting are captured and sent to Baghouse 9256.
3	1	N	Steel - Air Casting - Ingots	Provide engineering testing results.
3	4	Y	Steel - Air Casting - Ingots	[redacted]
3	5	Y	Steel - Air Casting - Ingots	
3	a	Y	Steel - Air Casting - Ingots	
3	b	Y	Steel - Air Casting - Ingots	
3	d	Y	Steel - Air Casting - Ingots	

3	2	N	Steel - Air Casting - Ingots	Provide data (i.e., manufacturer data, literature, performance data, etc.) supporting engineering judgment that 60% of emissions from Air Casting are captured and sent to Baghouse 9256.
3	a	Y	Steel - Air Casting - Ingots	[redacted]
3	c	Y	Steel - Air Casting - Ingots	
4	3	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	4	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	b	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	1	N	Steel - Vaccum Casting - Parts, VF3 & VF4	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
4	1	N	Steel - Vaccum Casting - Parts, VF3 & VF4	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
4	a	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	[redacted]
4	b	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	c	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	d	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
5	b	Y	Steel - Vacuum Casting - Parts MC1	
5	3	Y	Steel - Vacuum Casting - Parts MC1	
5	4	Y	Steel - Vacuum Casting - Parts MC1	
5	a	Y	Steel - Vacuum Casting - Parts MC1	
5	1	N	Steel - Vacuum Casting - Parts MC1	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
5	1	N	Steel - Vacuum Casting - Parts MC1	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
5	b	Y	Steel - Vacuum Casting - Parts MC1	[redacted]
5	c	Y	Steel - Vacuum Casting - Parts MC1	
5	d	Y	Steel - Vacuum Casting - Parts MC1	
6	3	Y	Steel - Vacuum Casting - Ingots VMM1	
6	4	Y	Steel - Vacuum Casting - Ingots VMM1	
6	1	N	Steel - Vacuum Casting - Ingots VMM1	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
6	1	N	Steel - Vacuum Casting - Ingots VMM1	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
6	a	Y	Steel - Vacuum Casting - Ingots VMM1	[redacted]
6	b	Y	Steel - Vacuum Casting - Ingots VMM1	
6	c	Y	Steel - Vacuum Casting - Ingots VMM1	
6	d	Y	Steel - Vacuum Casting - Ingots VMM1	
7	3	Y	Steel - Vacuum Casting - Ingots VMM2	
7	4	Y	Steel - Vacuum Casting - Ingots VMM2	
7	1	Y	Steel - Vacuum Casting - Ingots VMM2	
7	a	Y	Steel - Vacuum Casting - Ingots VMM2	
7	b	Y	Steel - Vacuum Casting - Ingots VMM2	
7	c	Y	Steel - Vacuum Casting - Ingots VMM2	
7	d	Y	Steel - Vacuum Casting - Ingots VMM2	
7	1	Y	Steel - Vacuum Casting - Ingots VMM2	
8	2	N	Steel - Hot Top	Provide information supporting engineering estimate for DEQ review.
8	a	Y	Steel - Hot Top	[redacted]
8	b	Y	Steel - Hot Top	
8	c	Y	Steel - Hot Top	
8	1	N	Steel - Hot Top	Provide product SDS for DEQ review.
8	a	Y	Steel - Hot Top	[redacted]
9	N/A	Y	Steel - Autoclave and Wax Reclaim	
9	a	Y	Steel - Autoclave and Wax Reclaim	
9	b	Y	Steel - Autoclave and Wax Reclaim	
10	2	N	Steel - Investing Baghouse 3804	Provide 2018 baghouse dust analysis reports for DEQ review.
10	d	Y	Steel - Investing Baghouse 3804	[redacted]
10	e	Y	Steel - Investing Baghouse 3804	
10	b	Y	Steel - Investing Baghouse 3804	
10	c	Y	Steel - Investing Baghouse 3804	
10	1	N	Steel - Investing Baghouse 3804	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiency reported for this baghouse.
11	2	N	Steel - Investing	Provide applicable production data to verify maximum daily and annual hydrochloric acid usage rates.
11	c	Y	Steel - Investing	[redacted]
11	d	Y	Steel - Investing	
11	f	Y	Steel - Investing	
11	1	N	Steel - Investing	Provide supporting calculations/technical information for this emission factor for DEQ review.
11	a	Y	Steel - Investing	[redacted]
11	b	Y	Steel - Investing	
11	c	Y	Steel - Investing	
11	d	Y	Steel - Investing	
11	d	Y	Steel - Investing	
11	3	N	Steel - Investing	Provide product SDS for DEQ review.
11	c	Y	Steel - Investing	[redacted]
12	1	N	Steel - Burnout Ovens - No Thermal Oxidation - Wax Components	Provide burnout oven emissions testing report for DEQ review.
12	a	Y	Steel - Burnout Ovens - No Thermal Oxidation - Wax Components	[redacted]
12	b	Y	Steel - Burnout Ovens - No Thermal Oxidation - Wax Components	
13	2	N	Steel - Burnout Ovens - Thermal Oxidation - Non Wax Components	Provide production data.
13	1	N	Steel - Burnout Ovens - Thermal Oxidation - Non Wax Components	Provide data and calculations to support engineering estimate referenced.
14	1	N	Steel - Burnout Ovens - Thermal Oxidation - Latex	Provide information supporting engineering estimate for DEQ review.
14	a	Y	Steel - Burnout Ovens - Thermal Oxidation - Latex	[redacted]
15	1	N	Steel - Acid Etch Line	Provide SDS or relevant information to confirm percent weight in solution reported for TACs used in acid etch line.
16	2	N	Steel - Baghouse 0585	Provide 2018 baghouse dust analysis reports for DEQ review.

16	1	N	Steel - Baghouse 0585	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
17	2	N	Steel - Baghouse 1659	Provide 2018 baghouse dust analysis reports for DEQ review.
17	1	N	Steel - Baghouse 1659	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
18	2	N	Steel - Baghouse 1807	Provide 2018 baghouse dust analysis reports for DEQ review.
18	1	N	Steel - Baghouse 1807	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
19	2	N	Steel - Baghouse 2214	Provide 2018 baghouse dust analysis reports for DEQ review.
20	2	N	Steel - Baghouse 5549	Provide 2018 baghouse dust analysis reports for DEQ review.
20	1	N	Steel - Baghouse 5549	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
21	2	N	Steel - Baghouse 6417	Provide 2018 baghouse dust analysis reports for DEQ review.
21	1	N	Steel - Baghouse 6417	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
22	2	N	Steel - Baghouses 6532 - HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
22	1	N	Steel - Baghouses 6532 - HEPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
23	2	N	Steel - Baghouses 6671	Provide 2018 baghouse dust analysis reports for DEQ review.
23	1	N	Steel - Baghouses 6671	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
24	2	N	Steel - Baghouse 8687	Provide 2018 baghouse dust analysis reports for DEQ review.
24	1	N	Steel - Baghouse 8687	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
25	2	N	Steel - Baghouse 8901 - HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
25	1	N	Steel - Baghouse 8901 - HEPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
26	2	N	Steel - Baghouse 9115	Listed products generally account for ~81% of dust components. Provide 2018 baghouse dust analysis reports for DEQ review.
26	1	N	Steel - Baghouse 9115	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
27	2	N	Steel Baghouse 9196 - HEPA	Listed products generally account for < 2% of dust components. Provide 2018 baghouse dust analysis reports for DEQ review.
27	a	N	Steel Baghouse 9196 - HEPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
28	2	N	Steel - Baghouse 9203 - HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
28	b	N	Steel - Baghouse 9203 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
28	c	N	Steel - Baghouse 9203 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
28	a	N	Steel - Baghouse 9203 - HEPA	Provide documentation for the 99.99997 % control efficiency for the baghouse w/HEPA.
29	2	N	Steel - Baghouse 9255 - HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
29	b	N	Steel - Baghouse 9255 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
29	c	N	Steel - Baghouse 9255 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
29	a	N	Steel - Baghouse 9255 - HEPA	Provide documentation for the 99.99997 % control efficiency for the baghouse w/HEPA.
30	2	N	Steel - Baghouse 9256 - HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
30	b	N	Steel - Baghouse 9256 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
30	c	N	Steel - Baghouse 9256 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
30	a	N	Steel - Baghouse 9256 - HEPA	Provide documentation for the 99.99997 % control efficiency for the baghouse w/HEPA.
31	2	N	Steel - Fugitives	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
32	3	N	Steel - Heat Treat - Air Cast Parts - Vacuum Furnace	Provide alloy composition data for DEQ review.
32	4	N	Steel - Heat Treat - Air Cast Parts - Vacuum Furnace	Provide alloy composition data for DEQ review.
32	1	N	Steel - Heat Treat - Air Cast Parts - Vacuum Furnace	Provide data and calculations to substantiate engineering estimate referenced.
33	3	Y	Steel - Heat Treat - Air Cast Parts - Natural Gas Furnace	[redacted]
33	4	Y	Steel - Heat Treat - Air Cast Parts - Natural Gas Furnace	
33	1	N	Steel - Heat Treat - Air Cast Parts - Natural Gas Furnace	Provide data and calculations to substantiate engineering estimate referenced.
34	3	Y	Steel - Heat Treat - Vacuum Cast Parts - Vacuum Furnace	[redacted]
34	4	Y	Steel - Heat Treat - Vacuum Cast Parts - Vacuum Furnace	
34	1	N	Steel - Heat Treat - Vacuum Cast Parts - Vacuum Furnace	Provide data and calculations to substantiate engineering estimate referenced.
35	3	Y	Steel - Heat Treat - Vacuum Cast Parts - Natural Gas Furnace	[redacted]
35	4	Y	Steel - Heat Treat - Vacuum Cast Parts - Natural Gas Furnace	
35	1	N	Steel - Heat Treat - Vacuum Cast Parts - Natural Gas Furnace	Provide data and calculations to substantiate engineering estimate referenced.
36	3	Y	Steel - Heat Treat - Titanium Vacuum Cast	[redacted]
36	4	Y	Steel - Heat Treat - Titanium Vacuum Cast	
36	1	N	Steel - Heat Treat - Titanium Vacuum Cast	Provide data and calculations to substantite engineering estimate referenced.
37	a	Y	Steel - Welding	[redacted]
37	b	Y	Steel - Welding	
37	c	Y	Steel - Welding	
37	d	Y	Steel - Welding	
37	1	N	Steel - Welding	Provide product SDS for DEQ review.
37	8	N	Steel - Welding	Provide product SDS for DEQ review.
37	9	N	Steel - Welding	Provide product SDS for DEQ review.
37	5	N	Steel - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
38	1	N	Steel - Wax Fugitives	Provide product SDS for DEQ review.
39	1	N	Steel - Alloy Service Center Paint	Provide product SDS for DEQ review.
41	2	N	Ti - Input Process Rates and Parameters	Please clarify what this footnote means. If it references supporting information not provided in the original submittal, please provide that for DEQ review.
41	3	N	Ti - Input Process Rates and Parameters	Provide production data for DEQ review.
42	3	Y	Ti - Vacuum Casting	[redacted]
42	4	Y	Ti - Vacuum Casting	
42	1	N	Ti - Vacuum Casting	Provide basis for control efficiency assumptions applied to AP-42 emission factors.
43	1	N	Ti - Autoclave and Wax Reclaim	Provide supporting calculations/technical information for this emission factor for DEQ review.
44	2	N	Ti - Investing Baghouse 3007- HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
45	2	N	Ti - Investing Baghouse 3342 - HEPA	Provide 2018 baghouse dust analysis reports for DEQ review.
46	2	N	Ti - TI Investing - RCO	Provide supporting calculations/technical information to substantiate this assumption.
46	3	N	Ti - TI Investing - RCO	Provide SDS for DEQ review.
47	1	N	Ti - Burnout Ovens - No Thermal Oxidation - Wax Components	Provide burnout oven emission testing results for DEQ review.
48	1	N	Ti - Burnout Ovens - with Thermal Oxidation - Non Wax Components	Provide supporting calculations/technical information for this emission factor for DEQ review.
49	3	N	Ti - Acid Etch Line	Provide supporting calculations/technical information for this emission factor for DEQ review.

50	2	N	Ti - Baghouse 3006	Provide 2018 baghouse dust analysis reports for DEQ review.
51	2	N	Ti - Baghouse 3747	Provide 2018 baghouse dust analysis reports for DEQ review.
52	2	N	Ti - Baghouse 3930	Provide 2018 baghouse dust analysis reports for DEQ review.
53	2	N	Ti - Baghouse 7094	Provide 2018 baghouse dust analysis reports for DEQ review.
54	2	N	Ti - Baghouse 8150	Provide 2018 baghouse dust analysis reports for DEQ review.
55	2	N	TI - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
56	3	Y	Ti - Vacuum Heat Treat	[redacted]
56	1	N	Ti - Vacuum Heat Treat	Provide supporting documentation and calculation methods for engineering estimate.
57	1	N	Ti - Welding	Provide product SDS for DEQ review.
57	3-5	N	Ti-Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
58	4	Y	Ti-Grinding	[redacted]
58	3	Y	Ti-Grinding	[redacted]
58	1	N	Ti-Grinding	Provide supporting calculations substantiating the engineering estimate to determine water curtain removal efficiency.
59	4	N	Ti-Wax Fugitives	Provide production data for DEQ review.
59	3	N	Ti-Wax Fugitives	The density of water is referenced at 32 F. Please provide documentation to verify the temperature at which the Ti-Wax process occurs.
59	1	N	Ti-Wax Fugitives	Provide product SDS for DEQ review.
59	2	N	Ti-Wax Fugitives	Provide product SDS for DEQ review.
60	2	N	Ti-Alpha Case Removal	Clarify why these operations based on 24/8760 hours when other operations are based on expected operations levels.
60	1	N	Ti-Alpha Case Removal	Please provide the previous testing data used to determine the emission factors.
62	1	N	Satellite - Input Process Rate - Baghouse with HEPA	Provide supporting calculations for reported control efficiency.
62	1	N	Input Process Rate - Baghouse no HEPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiency reported for baghouse.
63	2	N	MAP - Baghouse 0802	Provide 2018 baghouse dust analysis reports for DEQ review.
63	1	N	MAP - Baghouse 0802	Provide documentation supporting the annual amount of dust collected from this baghouse.
64	2	N	MAP - Baghouse 0803	Provide 2018 baghouse dust analysis reports for DEQ review.
64	1	N	MAP - Baghouse 0803	Provide documentation supporting the annual amount of dust collected from this baghouse.
65	2	N	MAP - Baghouse 9031	Provide 2018 baghouse dust analysis reports for DEQ review.
65	1	N	MAP - Baghouse 9031	Provide documentation supporting the annual amount of dust collected from this baghouse.
66	2	N	MAP - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
66	2	N	MAP - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
67	2	N	LSBS I - Baghouse 5062	Provide 2018 baghouse dust analysis reports for DEQ review.
67	1	N	LSBS I - Baghouse 5062	Provide documentation supporting the annual amount of dust collected from this baghouse.
68	2	N	LSBS I - Baghouse 6265	Provide 2018 baghouse dust analysis reports for DEQ review.
68	1	N	LSBS I - Baghouse 6265	Provide documentation supporting the annual amount of dust collected from this baghouse.
69	2	N	LSBS I - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
69	2	N	LSBS I - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
70	9	N	LSBS I - Welding	This footnote states that the maximum daily emissions are based on the maximum daily alloy content of all products, but all are listed as zero. Provide supporting calculations and revise table to reflect actual maximum daily emissions.
70	9	N	LSBS I - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
70	2	N	LSBS I - Welding	Provide data supporting derivation of percentage of welding wire wasted.
70	7	N	LSBS I - Welding	Provide data supporting derivation of percentage of welding wire wasted.
70	8	N	LSBS I - Welding	Provide product SDS for DEQ review.
70	3-4	N	LSBS I - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
70	6	N	LSBS I - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
70	1	N	LSBS I - Welding	Provide alloy composition data for DEQ review.
71	2	N	LSBS II - Baghouse 5365	Provide 2018 baghouse dust analysis reports for DEQ review.
71	a	N	LSBS II - Baghouse 5365	Provide manufacturer or performance data supporting reported control efficiency.
71	1	N	LSBS II - Baghouse 5365	Provide documentation supporting the annual amount of dust collected from this baghouse.
72	2	N	LSBS II - Baghouse 5457	Provide 2018 baghouse dust analysis reports for DEQ review.
72	a	N	LSBS II - Baghouse 5457	Provide manufacturer or performance data supporting reported control efficiency.
72	1	N	LSBS II - Baghouse 5457	Provide documentation supporting the annual amount of dust collected from this baghouse.
73	2	N	LSBS II - Baghouse 6418	Provide 2018 baghouse dust analysis reports for DEQ review.
73	a	N	LSBS II - Baghouse 6418	Provide manufacturer or performance data supporting reported control efficiency.
73	1	N	LSBS II - Baghouse 6418	Provide documentation supporting the annual amount of dust collected from this baghouse.
74	2	N	LSBS II - Fugitive Emissions	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
75	1	N	LSBS II - Welding	Provide data supporting derivation of percentage of welding wire wasted.
75	8	N	LSBS II - Welding	Provide product SDS for DEQ review.
75	5	N	LSBS II - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
75	4	N	LSBS II - Welding	Provide welding wire SDS for DEQ review.
75	6	N	LSBS II - Welding	Provide data substantiating assumption that 75% of welding emissions are controlled by baghouses 5365 and 6418. Provide data substantiating the statement that that the building of interest is an "effective enclosure" with "minimal venting aside from the baghouses."
76	2	N	LMA - Baghouse 7095	Provide 2018 baghouse dust analysis reports for DEQ review.
76	a	N	LMA - Baghouse 7095	Provide manufacturer or performance data supporting reported control efficiency.
77	2	N	LMA - Baghouse 7096	Provide 2018 baghouse dust analysis reports for DEQ review.
77	a	N	LMA - Baghouse 7096	Provide manufacturer or performance data supporting reported control efficiency.
78	2	N	LMA - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
79	1	N	LMA - Grinding	Provide data and calculations substantiating engineering estimate referenced.
79	3-4	Y	LMA - Grinding	[redacted]
80	5	N	LMA - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
80	1	N	LMA - Welding	Provide welding wire SDS for DEQ review.
81	3	N	LMA - Acid Etch Line	Provide ventilation system design documents to verify flow rate, bath dimensions, bath temperature, etc.
82	1	N	TBS - Welding	Provide welding wire SDS for DEQ review.
82	3	N	Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.

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Table	Note/Reference	CBI	Relevant Process	Comment
D1	1	N	LPC Alloy Data	Footnote states "See emissions inventory", but unredacted emissions inventory references "Information provided by client based on CBI - alloy composition data." Please provide original documents including composition data for DEQ review.
D1	2	N	LPC Alloy Data	Provide product alloy composition data for DEQ review.
D1	3	N	LPC Alloy Data	Provide technical justification for assumptions cited here.
D1	b	Y	LPC Alloy Data	[redacted]
D1	c	Y	LPC Alloy Data	
D1	4, 5	Y	LPC Alloy Data	
D2	none	N	Baghouse Data	Submit all analytical data used to generate Table D2 for DEQ review.
D3	a	N	Master Throughput and Production Rates	Provide production data to verify the total mass of metal poured, both on an annual and daily basis.
D3	b	N	Master Throughput and Production Rates	Provide production data from LPC-T and LPC-S to verify the total mass of metal poured, both on an annual and daily PTE basis.
D3	c	N	Master Throughput and Production Rates	Provide production data from air and vacuum casting ingots used at LPC-S on an annual and daily PTE basis.
D3	d	N	Master Throughput and Production Rates	Provide annual production data and verification of annual days of operation to verify maximum daily parameter (lb/day).
D3	e	N	Master Throughput and Production Rates	Provide production data for *air casting, steel parts and ingots* and *air casting, steel ingots* to verify annual total metal poured for air casting.
D3	f	N	Master Throughput and Production Rates	Provide production data for *air casting parts* and *gating and air casting ingots* . Provide data supporting percent derivation for portion of metal pours that are routed to a baghouse. Provide baghouse performance data to verify emission factors used.
D3	g	N	Master Throughput and Production Rates	Provide production data to verify the total mass of metal poured for *vacuum casting, steel* ; *vacuum casting, steel parts* ; and *vacuum casting, steel ingots* .
D3	h	N	Master Throughput and Production Rates	Provide production data to verify the annual total mass of metal poured for vacuum casting. Provide data substantiating percentages assigned for parts cast to each furnace (MC1, VF3 & 4, VMM1, VMM2).
D3	i	N	Master Throughput and Production Rates	Provide production data to verify metal poured for vacuum casting parts, MC1 melting.
D3	j	N	Master Throughput and Production Rates	Provide annual parameter supporting data to verify maximum daily parameter calculation.
D3	k	N	Master Throughput and Production Rates	Provide supporting data to verify calculation of annual parameter, PTE for metal poured for parts and gating.
D3	l	N	Master Throughput and Production Rates	Provide supporting data to verify total dust collected and percentage of dust routed to baghouses 0585 and 1807.
D3	m	N	Master Throughput and Production Rates	Provide supporting data to verify calculation of annual parameter, PTE for metal poured for ingots at LPC-S.
D3	n	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for parts and gating, LPC-T PTE and LPC-T 2018.
D3	o	N	Master Throughput and Production Rates	Provide production data to verify the total metal poured for parts. Explain derivation of *wax component no thermal oxidation* calculation.
D3	p	N	Master Throughput and Production Rates	Provide production data to verify the amount of metal used for casting, parts and gating. Provide data supporting percent derivation for metal poured for gating.
D3	q	N	Master Throughput and Production Rates	Provide production data to verify the amount of air cast superalloy heat treated. Provide data supporting derivation of percentage of air casting heat treat furnace.
D3	r	N	Master Throughput and Production Rates	Provide production data to verify total vacuum cast superalloy heat treated. Provide data supporting derivation of percentage of vacuum casting heat treat furnace.
D3	s	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for titanium castings. Provide data supporting derivation of (1) percentage of metal removed as gating and (2) percentage of titanium parts heat treated as steel.
D3	t	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for Ti facility casting. Provide data supporting derivation of (1) percentage of metal poured for gating and (2) percentage of titanium parts heat treated at Ti facility.
D3	u	N	Master Throughput and Production Rates	Provide supporting data to verify total welding wire without waste.
D3	v	N	Master Throughput and Production Rates	Provide production data to verify annual parameter, PTE for metal poured for parts and gating, LPC-T PTE and LPC-T 2018.
D3	w	N	Master Throughput and Production Rates	Provide manufacturer or performance data supporting reported control efficiency.
D3	3	N	Master Throughput and Production Rates	Provide typical production activity data for DEQ review.
D3	4	N	Master Throughput and Production Rates	Provide all production data referenced with this footnote for DEQ review.
D3	5	N	Master Throughput and Production Rates	Provide waste manifests or other supporting data for amount of material collected from baghouse in 2018.
D3	6	N	Master Throughput and Production Rates	Provide supporting calculations for estimated baghouse split.
D3	7	N	Master Throughput and Production Rates	Provide all production data referenced with this footnote for DEQ review.
D3	8	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for parts and gating, LPC-S.
D3	9	N	Master Throughput and Production Rates	Provide justification for assumption cited here.
D3	10	N	Master Throughput and Production Rates	Provide production data to verify total metal poured for parts and gating, LPC-T.
D3	11	N	Master Throughput and Production Rates	Provide supporting calculations for density ratio cited here.
D3	12	N	Master Throughput and Production Rates	If this note does not correspond to any calculations in this table, remove it.
D3	13	N	Master Throughput and Production Rates	Provide monthly usage data to verify paint throughput reported.
D3	14	N	Master Throughput and Production Rates	Provide 2018 natural gas usage to verify apportionment for individual facility locations.
D3	15	N	Master Throughput and Production Rates	Provide data to substantiate the hours of operation and downtime hours reported.
D3	18	N	Master Throughput and Production Rates	Provide air casting production data to (1) substantiate the assumption that air casting occurs up to three days per week and (2) verify annual hours and days of operation reported.
D3	19	N	Master Throughput and Production Rates	Provide manufacturer or performance data for DEQ review.
D3	20	N	Master Throughput and Production Rates	Provide supporting calculations for engineering estimate.
D3	21	N	Master Throughput and Production Rates	Provide supporting calculations or performance data for assumed percentage of emissions sent to dry vac pump and baghouse with HEPA control.
D3	22	N	Master Throughput and Production Rates	Provide supporting data to verify split of natural gas between air and vacuum cast parts.
D3	23	N	Master Throughput and Production Rates	Provide supporting information for DEQ review.
D3	24	N	Master Throughput and Production Rates	Provide production information to verify percentages presented for titanium parts heat treated at PCC's various facilities.
D3	N/A	N	Master Throughput and Production Rates	Provide additional explanation of this process. Provide additional justification for assumption that toxics are not emitted from this baghouse.
1	c	N	Steel - Input Process Rates and Parameters	If this note does not correspond to any calculations in this table, remove it.
1	N/A	N	Steel - Input Process Rates and Parameters	Provide substantiation for excluding oxidizer downtime hours for calculated PTE.
1	3	N	Steel - Input Process Rates and Parameters	Provide production data for DEQ review.
2	1	N	Steel - Air Casting - Parts	Provide engineering testing results.
2	4	Y	Steel - Air Casting - Parts	[redacted]
2	5	Y	Steel - Air Casting - Parts	
2	a	Y	Steel - Air Casting - Parts	
2	b	Y	Steel - Air Casting - Parts	
2	d	Y	Steel - Air Casting - Parts	

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2	1	N	Steel - Air Casting - Parts	Provide engineering estimate calculations for DEQ review.
2	2	N	Steel - Air Casting - Parts	Provide data (i.e., manufacturer data, literature, performance data, etc.) supporting engineering judgment that 60% of emissions from Air Casting are captured and sent to Baghouse 9256.
3	1	N	Steel - Air Casting - Ingots	Provide engineering testing results.
3	4	Y	Steel - Air Casting - Ingots	[redacted]
3	5	Y	Steel - Air Casting - Ingots	
3	a	Y	Steel - Air Casting - Ingots	
3	b	Y	Steel - Air Casting - Ingots	
3	d	Y	Steel - Air Casting - Ingots	
3	2	N	Steel - Air Casting - Ingots	Provide data (i.e., manufacturer data, literature, performance data, etc.) supporting engineering judgment that 60% of emissions from Air Casting are captured and sent to Baghouse 9256.
3	a	Y	Steel - Air Casting - Ingots	[redacted]
3	c	Y	Steel - Air Casting - Ingots	
4	3	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	4	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	b	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	1	N	Steel - Vaccum Casting - Parts, VF3 & VF4	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
4	1	N	Steel - Vaccum Casting - Parts, VF3 & VF4	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
4	a	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	[redacted]
4	b	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	c	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
4	d	Y	Steel - Vaccum Casting - Parts, VF3 & VF4	
5	b	Y	Steel - Vacuum Casting - Parts MC1	
5	3	N	Steel - Vacuum Casting - Parts MC1	Provide alloy composition data for DEQ review.
5	4	N	Steel - Vacuum Casting - Parts MC1	Provide alloy composition data for DEQ review.
5	a	Y	Steel - Vacuum Casting - Parts MC1	[redacted]
5	1	N	Steel - Vacuum Casting - Parts MC1	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
5	1	N	Steel - Vacuum Casting - Parts MC1	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
5	b	Y	Steel - Vacuum Casting - Parts MC1	[redacted]
5	c	Y	Steel - Vacuum Casting - Parts MC1	
5	d	Y	Steel - Vacuum Casting - Parts MC1	
6	3	Y	Steel - Vacuum Casting - Ingots VMM1	
6	4	Y	Steel - Vacuum Casting - Ingots VMM1	
6	1	N	Steel - Vacuum Casting - Ingots VMM1	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
6	1	N	Steel - Vacuum Casting - Ingots VMM1	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
6	a	Y	Steel - Vacuum Casting - Ingots VMM1	[redacted]
6	b	Y	Steel - Vacuum Casting - Ingots VMM1	
6	c	Y	Steel - Vacuum Casting - Ingots VMM1	
6	d	Y	Steel - Vacuum Casting - Ingots VMM1	
7	3	Y	Steel - Vacuum Casting - Ingots VMM2	
7	4	Y	Steel - Vacuum Casting - Ingots VMM2	
7	1	N	Steel - Vacuum Casting - Ingots VMM2	Provide supporting calculations for adjustment of AP-42 emission factor for electric induction furnace to reflect the vacuum casting process.
7	a	Y	Steel - Vacuum Casting - Ingots VMM2	[redacted]
7	b	Y	Steel - Vacuum Casting - Ingots VMM2	
7	c	Y	Steel - Vacuum Casting - Ingots VMM2	
7	d	Y	Steel - Vacuum Casting - Ingots VMM2	
7	1	N	Steel - Vacuum Casting - Ingots VMM2	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies used in these calculations.
8	2	N	Steel - Hot Top	Provide information supporting engineering estimate for DEQ review.
8	a	Y	Steel - Hot Top	[redacted]
8	b	Y	Steel - Hot Top	
8	c	Y	Steel - Hot Top	
8	1	N	Steel - Hot Top	Provide product SDS for DEQ review.
8	a	Y	Steel - Hot Top	[redacted]
9	N/A	N	Steel - Autoclave and Wax Reclaim	Provide supporting data (i.e., engineering testing, etc.) demonstrating the TACs listed are representative of all TAC emissions from autoclave and wax reclaim activities.
9	a	Y	Steel - Autoclave and Wax Reclaim	[redacted]
9	b	Y	Steel - Autoclave and Wax Reclaim	
10	2	N	Steel - Investing Baghouse 3804	Provide 2018 baghouse dust analysis reports for DEQ review.
10	d	N	Steel - Investing Baghouse 3804	Provide supporting data to verify % of PM emitted.
10	e	N	Steel - Investing Baghouse 3804	Provide supporting data to verify % of PM emitted.
10	b	N	Steel - Investing Baghouse 3804	Provide dust collection data for DEQ review.
10	c	N	Steel - Investing Baghouse 3804	Provide dust collection data for DEQ review.
10	1	N	Steel - Investing Baghouse 3804	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiency reported for this baghouse.
11	2	N	Steel - Investing	Provide applicable production data to verify maximum daily and annual hydrochloric acid usage rates.
11	c	Y	Steel - Investing	[redacted]

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11	d	Y	Steel - Investing	[redacted]
11	f	Y	Steel - Investing	
11	1	N	Steel - Investing	Provide supporting calculations/technical information for this emission factor for DEQ review.
11	a	Y	Steel - Investing	[redacted]
11	b	Y	Steel - Investing	
11	c	Y	Steel - Investing	
11	d	Y	Steel - Investing	
11	d	Y	Steel - Investing	
11	3	N	Steel - Investing	Provide product SDS for DEQ review.
11	c	Y	Steel - Investing	[redacted]
12	1	N	Steel - Burnout Ovens - No Thermal Oxidation - Wax Components	Provide burnout oven emissions testing report for DEQ review.
12	a	Y	Steel - Burnout Ovens - No Thermal Oxidation - Wax Components	[redacted]
12	b	Y	Steel - Burnout Ovens - No Thermal Oxidation - Wax Components	
13	2	N	Steel - Burnout Ovens - Thermal Oxidation - Non Wax Cc	Provide production data.
13	1	N	Steel - Burnout Ovens - Thermal Oxidation - Non Wax Cc	Provide data and calculations to support engineering estimate referenced.
14	1	N	Steel - Burnout Ovens - Thermal Oxidation - Latex	Provide information supporting engineering estimate for DEQ review.
14	a	Y	Steel - Burnout Ovens - Thermal Oxidation - Latex	[redacted]
15	1	N	Steel - Acid Etch Line	Provide SDS or relevant information to confirm percent weight in solution reported for TACs used in acid etch line.
16	2	N	Steel - Baghouse 0585	Listed products generally account for ~9.5% of dust components. Provide all baghouse dust analysis reports for DEQ review.
16	1	N	Steel - Baghouse 0585	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
17	2	N	Steel - Baghouse 1659	Provide referenced baghouse dust analysis reports for DEQ review.
18	2	N	Steel - Baghouse 1807	Provide referenced baghouse dust analysis reports for DEQ review.
19	2	N	Steel - Baghouse 2214	Provide referenced baghouse dust analysis reports for DEQ review.
20	2	N	Steel - Baghouse 5549	Provide referenced baghouse dust analysis reports for DEQ review.
21	2	N	Steel - Baghouse 6417	Provide referenced baghouse dust analysis reports for DEQ review.
22	2	N	Steel - Baghouses 6532 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
23	2	N	Steel - Baghouses 6671	Provide referenced baghouse dust analysis reports for DEQ review.
24	2	N	Steel - Baghouse 8687	Provide referenced baghouse dust analysis reports for DEQ review.
25	2	N	Steel - Baghouse 8901 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
26	2	N	Steel - Baghouse 9115	Provide referenced baghouse dust analysis reports for DEQ review.
27	a	N	Steel Baghouse 9196 - HEPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
27	2	N	Steel Baghouse 9196 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
28	2	N	Steel - Baghouse 9203 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
28	b	N	Steel - Baghouse 9203 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
28	c	N	Steel - Baghouse 9203 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
28	a	N	Steel - Baghouse 9203 - HEPA	Provide documentation for the control efficiency reported for the baghouse w/HEPA.
29	2	N	Steel - Baghouse 9255 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
29	b	N	Steel - Baghouse 9255 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
29	c	N	Steel - Baghouse 9255 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
29	a	N	Steel - Baghouse 9255 - HEPA	Provide documentation for the control efficiency reported for the baghouse w/HEPA.
30	2	N	Steel - Baghouse 9256 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
30	b	N	Steel - Baghouse 9256 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
30	c	N	Steel - Baghouse 9256 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
30	a	N	Steel - Baghouse 9256 - HEPA	Provide documentation for the control efficiency reported for the baghouse w/HEPA.
31	2	N	Steel - Baghouse 9670 - HEPA	Demonstrate that the processes routed to each of these baghouses are substantially similar.
31	b	N	Steel - Baghouse 9670 - HEPA	Provide documentation supporting the maximum daily amount of dust collected from this baghouse.
31	c	N	Steel - Baghouse 9670 - HEPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
31	a	N	Steel - Baghouse 9670 - HEPA	Provide documentation for the control efficiency reported for the baghouse w/HEPA.
32	2	N	Steel - Fugitives	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
33	3	Y	Steel - Heat Treat - Air Cast Parts - Vacuum Furnace	[redacted]
33	4	Y	Steel - Heat Treat - Air Cast Parts - Vacuum Furnace	
33	1	N	Steel - Heat Treat - Air Cast Parts - Vacuum Furnace	Provide data and calculations to substantiate engineering estimate referenced.
34	3	Y	Steel - Heat Treat - Air Cast Parts - Natural Gas Furnace	[redacted]
34	4	Y	Steel - Heat Treat - Air Cast Parts - Natural Gas Furnace	
34	1	N	Steel - Heat Treat - Air Cast Parts - Natural Gas Furnace	Provide data and calculations to substantiate engineering estimate referenced.

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Table	Note/Reference	CBI	Relevant Process	Comment
35	3	Y	Steel - Heat Treat - Vacuum Cast Parts - Vacuum Furnace	
35	4	Y	Steel - Heat Treat - Vacuum Cast Parts - Vacuum Furnace	
35	1	N	Steel - Heat Treat - Vacuum Cast Parts - Vacuum Furnace	Provide data and calculations to substantiate engineering estimate referenced.
36	3	Y	Steel - Heat Treat - Vacuum Cast Parts - Natural Gas Furnace	
36	4	Y	Steel - Heat Treat - Vacuum Cast Parts - Natural Gas Furnace	
36	1	N	Steel - Heat Treat - Vacuum Cast Parts - Natural Gas Furnace	Provide data and calculations to substantiate engineering estimate referenced.
37	3	Y	Steel - Heat Treat - Titanium Vacuum Cast	
37	4	Y	Steel - Heat Treat - Titanium Vacuum Cast	
37	1	N	Steel - Heat Treat - Titanium Vacuum Cast	Provide data and calculations to substantite engineering estimate referenced.
38	b	Y	Steel - Welding	
38	d	Y	Steel - Welding	
38	e	Y	Steel - Welding	
38	c	Y	Steel - Welding	
38	1	N	Steel - Welding	Provide product SDS for DEQ review.
38	5	N	Steel - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
39	1	N	Steel - Wax Fugitives	Provide product SDS for DEQ review.
40	1	N	Steel - Alloy Service Center Ink	Provide product SDS for DEQ review.
40	N/A	N	Steel - Alloy Service Center Ink	Please clarify why ink is referenced in PTE calculations and paint is referenced in 2018 calculations.
42	3	N	Ti - Input Process Rates and Parameters	Please clarify what this footnote means. If it references supporting information not provided in the original submittal, please provide that for DEQ review.
42	4	N	Ti - Input Process Rates and Parameters	Provide production data for DEQ review.
43	1	N	Ti - Vacuum Casting VF1 and VF2	Provide basis for control efficiency assumptions applied to AP-42 emission factors.
43	3	Y	Ti - Vacuum Casting VF1 and VF2	
43	4	Y	Ti - Vacuum Casting VF1 and VF2	
44	3	Y	Ti - Vacuum Casting	
44	4	Y	Ti - Vacuum Casting	
44	1	N	Ti - Vacuum Casting	Provide basis for control efficiency assumptions applied to AP-42 emission factors.
45	1	N	Ti - Autoclave and Wax Reclaim	Provide supporting calculations/technical information for this emission factor for DEQ review.
46	2	N	Ti - Investing Baghouse 3007- HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
47	2	N	Ti - Investing Baghouse 3342 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
48	2	N	Ti - TI Investing - RCO	Provide supporting calculations/technical information for DEQ review.
48	3	N	Ti - TI Investing - RCO	Provide SDS for DEQ review.
49	1	N	Ti - Burnout Ovens - No Thermal Oxidation - Wax Compc	Provide burnout oven emission testing results for DEQ review.
50	1	N	Ti - Burnout Ovens - with Thermal Oxidation - Non Wax (	Provide supporting calculations/technical information for this emission factor for DEQ review.
51	3	N	Ti - Acid Etch Line	Provide supporting calculations/technical information for this emission factor for DEQ review.
52	2	N	Ti - Baghouse 3006	Provide referenced baghouse dust analysis reports for DEQ review.
53	2	N	Ti - Baghouse 3747 - ULPA	Provide referenced baghouse dust analysis reports for DEQ review.
53	a	N	Ti - Baghouse 3747 - ULPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
54	2	N	Ti - Baghouse 3930 - ULPA	Provide referenced baghouse dust analysis reports for DEQ review.
54	a	N	Ti - Baghouse 3930 - ULPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
55	2	N	Ti - Baghouse 6419	This table appears to be missing from the submittal. Please add it to the revised submission and provide supporting materials consistent with other information requests listed here.
56	2	N	Ti - Baghouse 7094	Provide referenced baghouse dust analysis reports for DEQ review.
56	a	N	Ti - Baghouse 7094	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
57	2	N	Ti - Baghouse 8150	Provide referenced baghouse dust analysis reports for DEQ review.
57	a	N	Ti - Baghouse 8150	Provide supporting data (i.e., manufacturer data, performance data, etc.) for removal efficiencies used in these calculations.
58	2	N	TI - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
59	3	Y	Ti - Vacuum Heat Treat	
59	4	Y	Ti - Vacuum Heat Treat	
59	1	N	Ti - Vacuum Heat Treat	Provide supporting documentation and calculation methods for engineering estimate.
60	1	N	Ti - Welding	Provide product SDS for DEQ review.
60	3-5	N	Ti-Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
61	4	Y	Ti-Grinding	
61	3	Y	Ti-Grinding	
61	1	N	Ti-Grinding	Provide supporting calculations substantiating the engineering estimate to determine water curtain removal efficiency.
62	4	N	Ti-Wax Fugitives	Provide production data for DEQ review.
62	3	N	Ti-Wax Fugitives	The density of water is referenced at 32 F. Please provide documentation to verify the temperature at which the Ti-Wax process occurs.
62	1	N	Ti-Wax Fugitives	Provide product SDS for DEQ review.

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Table	Note/Reference	CBI	Relevant Process	Comment
62	2	N	Ti-Wax Fugitives	Provide product SDS for DEQ review.
63	2	N	Ti-Alpha Case Removal	Clarify why these operations based on 24/8760 hours when other operations are based on expected operations levels.
63	1	N	Ti-Alpha Case Removal	Please provide the previous testing data used to determine the emission factors.
65	1	N	Satellite - Input Process Rates and Parameters	Provide explanation for exclusion of LMA natural gas usage from PTE calculations.
65	2	N	Satellite - Input Process Rates and Parameters	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiencies reported.
66	2	N	MAP - Baghouse 0802	Provide referenced baghouse dust analysis reports for DEQ review.
66	1	N	MAP - Baghouse 0802	Provide documentation supporting the annual amount of dust collected from this baghouse.
67	2	N	MAP - Baghouse 0803	Provide referenced baghouse dust analysis reports for DEQ review.
67	1	N	MAP - Baghouse 0803	Provide documentation supporting the annual amount of dust collected from this baghouse.
68	2	N	MAP - Baghouse 9031	Provide referenced baghouse dust analysis reports for DEQ review.
68	1	N	MAP - Baghouse 9031	Provide documentation supporting the annual amount of dust collected from this baghouse.
69	2	N	MAP - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
69	N/A	N	MAP - Fugitive	Provide supporting emissions estimate calculations and analyses for DEQ review.
70	2	N	LSBS I - Baghouse 5062 - ULPA	Provide referenced baghouse dust analysis reports for DEQ review.
70	1	N	LSBS I - Baghouse 5062 - ULPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
70	a	N	LSBS I - Baghouse 5062 - ULPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiency reported.
71	2	N	LSBS I - Baghouse 6565 - ULPA	Provide referenced baghouse dust analysis reports for DEQ review.
71	1	N	LSBS I - Baghouse 6565 - ULPA	Provide documentation supporting the annual amount of dust collected from this baghouse.
71	a	N	LSBS I - Baghouse 6565 - ULPA	Provide supporting data (i.e., manufacturer data, performance data, etc.) for control efficiency reported.
72	2	N	LSBS I - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
73	3	N	LSBS I - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
73	4	N	LSBS I - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
73	5	N	LSBS I - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
73	1	N	LSBS I - Welding	Provide welding wire SDSs for DEQ review.
74	2	N	LSBS II - Baghouse 5365 - HEPA	Provide referenced baghouse dust analysis reports for DEQ review.
74	a	N	LSBS II - Baghouse 5365 - HEPA	Provide manufacturer or performance data supporting reported control efficiency.
74	1	N	LSBS II - Baghouse 5365	Provide documentation supporting the annual amount of dust collected from this baghouse.
75	2	N	LSBS II - Baghouse 5457	Provide referenced baghouse dust analysis reports for DEQ review.
75	a	N	LSBS II - Baghouse 5457	Provide manufacturer or performance data supporting reported control efficiency.
75	1	N	LSBS II - Baghouse 5457	Provide documentation supporting the annual amount of dust collected from this baghouse.
76	2	N	LSBS II - Baghouse 6418	Provide referenced baghouse dust analysis reports for DEQ review.
76	a	N	LSBS II - Baghouse 6418	Provide manufacturer or performance data supporting reported control efficiency.
76	2	N	LSBS II - Baghouse 6418	Provide referenced baghouse dust analysis reports for DEQ review.
76	a	N	LSBS II - Baghouse 6418	Provide manufacturer or performance data supporting reported control efficiency.
76	1	N	LSBS II - Baghouse 6418	Provide documentation supporting the annual amount of dust collected from this baghouse.
77	2	N	LSBS II - Fugitive Emissions	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
77	1	N	LSBS II - Fugitive Emissions	Confirm that values are the sum of LSBS II baghouse estimated emissions, not LSBS I. Revise this note to reflect LSBS II emissions.
78	1	N	LSBS II - Welding	Provide data supporting derivation of percentage of welding wire wasted.
78	8	N	LSBS II - Welding	Provide product SDS for DEQ review.
78	5	N	LSBS II - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
78	4	N	LSBS II - Welding	Provide welding wire SDS for DEQ review.
78	6	N	LSBS II - Welding	Provide data substantiating assumption that 75% of welding emissions are controlled by baghouses 5365 and 6418. Provide data substantiating the statement that that the building of interest is an "effective enclosure" with "minimal venting aside from the baghouses."
79	2	N	LMA - Baghouse 7095	Provide referenced baghouse dust analysis reports for DEQ review.
79	a	N	LMA - Baghouse 7095	Provide manufacturer or performance data supporting reported control efficiency.
80	2	N	LMA - Baghouse 7096	Provide referenced baghouse dust analysis reports for DEQ review.
80	a	N	LMA - Baghouse 7096	Provide manufacturer or performance data supporting reported control efficiency.
81	2	N	LMA - Fugitive	Provide justification for the assumption that fugitive emissions are equivalent to 1% of the controlled emissions from the baghouse.
82	1	N	LMA - Heat Treat	Provide data and calculations substantiating engineering estimate referenced.
82	3	Y	LMA - Heat Treat	[redacted]
82	4	Y	LMA - Heat Treat	
83	1	N	LMA - Grinding	Provide data and calculations substantiating reported removal efficiency.
83	3	Y	LMA - Grinding	[redacted]
83	4	Y	LMA - Grinding	
84	5	N	LMA - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.
84	1	N	LMA - Welding	Provide welding wire SDS for DEQ review.
85	3	N	LMA - Acid Etch Line	Provide ventilation system design documents to verify flow rate, bath dimensions, bath temperature, etc.
86	1	N	TBS - Welding	Provide welding wire SDS for DEQ review.
86	3	N	TBS - Welding	The technical document referenced was most recently updated in 1998. Please consider more recent confirmation test results to quantify welding emissions.