Clariant Corporation

4000 Monroe Road
Charlotte, NC 28205
704.331.7000

Via FedEx

November 8, 2004

Kimberly Tisa, PCB Coordinator (CPT)
USEPA
1 Congress Street, Suite 1100
Boston, MA 02114-2023

RE: Red Pigment Project
Comprehensive Assessments

Dear Ms. Tisa:

Clariant has received your response dated October 26, 2004 concerning the Conceptual Exposure Model / Preliminary Assessment ("CEM") dated August 31, 2004. You have asked for an estimated schedule for completion of the comprehensive risk assessments. As documented in the CEM, Clariant has determined that the end use which poses the highest exposure potential is carpet fiber. Clariant will submit to you a report of the quantitative risk assessment of exposure to carpet fibers no later than December 6, 2004.

The two comments on the CEM raised by Versar included in your October 26 response will be addressed by the forthcoming document.

If you have any questions or need additional information, please feel free to contact me at 704-331-7104.

Sincerely,

CLARIANT CORPORATION

Michael A. Teague, Ph.D.
Vice President / ESHA

Enclosure

cc: Erin Russell, Esq.
John Schell, Ph.D.
John Paul
Robert Freet, Ph.D.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 Congress Street, Suite 1100
BOSTON, MA 02114-2023

CERTIFIED MAIL

October 26, 2004

Michael A. Teague, Ph.D.
Vice President / ESHA
Clariant Corporation
4000 Monroe Road
Charlotte, North Carolina 28205

Re: Conceptual Exposure Model and Preliminary Assessment for End Users of Pigment Red 144 and 214, August 31, 2004

Dear Dr. Teague:

This is in response to your August 31, 2004 submittal which defines a Conceptual Exposure Model for assessing potential exposure risks associated with the use of Clariant Pigments Red 144 and 214.

EPA's contractor, Versar, has completed its review of this submittal. Versar's comments are attached. While the Conceptual Exposure Model appears thorough and no substantial omissions were identified, Versar's comments must be incorporated into the comprehensive risk assessments.

Given that no major revisions to the Exposure Model appear to be needed, EPA expects Clariant to proceed as soon as possible with the comprehensive assessments. Accordingly, EPA requests that Clariant provide its estimated schedule for completion of these assessments within 7 days of receipt of this letter.

Should you have any questions, please call me at (617) 918-1527 or by e-mail at tisa.kimberly@epa.gov.

Sincerely,

Kimberly N. Tisa, PCB Coordinator
Office of Ecosystem Protection

cc: T. Olivier, EPA
M. Milette, EPA

attachment

Laura Casey
10/25/2004 03:27 PM

To: Kimberly Tisa/R1/USEPA/US@EPA
cc:
Subject: Fw: Review of Clariant Documents

FYI -

Laura
----- Forwarded by Laura Casey/DC/USEPA/US on 10/25/04 03:26 PM -----

Diane Sinkowski
<DSinkowski@versar.com>
10/25/04 02:33 PM

To Laura Casey/DC/USEPA/US@EPA
cc James Buchert <BUCHEJAM@versar.com>
Subject Review of Clarient Documents

Hi Laura,

Please find attached comments regarding the Clarient dendograms submitted to Region 1. I would be happy to answer any questions.

Thank you,

Didi

Diane S. Sinkowski
Environmental Engineer
Exposure/Risk Assessment Division
Versar, Inc.
6850 Versar Center
Springfield, VA 22151
Phone: 703-750-3000, ext. 737
Fax: 703-642-6954
dsinkowski@versar.com

review of clarient dendograms.BKI

Versar inc.

MEMORANDUM

TO: Laura Casey

cc: James Buchert
1126.1000.001.01 file

FROM: Diane Sinkowski

DATE: October 25, 2004

SUBJECT: Review of *Conceptual Exposure Model and preliminary Assessment for End Users of Pigment Red 144 and 214* (August 31, 2004)

I have reviewed the submitted assessment approach and exposure route and pathway dendograms. The diagrams provide a thorough preliminary estimate of the potential pathways associated with exposure to PCBs in industrial and consumer end-use products.

I just have the following brief comments:

- The dendograms show that for consumers, exposure to PCBs could potentially occur from skin contact with and ingestion of PCBs found in surface dust. I want to make certain that, the exposure assessment considers the transfer of PCBs embedded in the material that are available at the surface of a manufactured item to skin contacting that surface. (A material does not necessarily have to produce particulates (i.e., dust) to have PCBs become available.) Similar to surface dust, some of the available PCBs in the material that adhere to the skin are inadvertently ingested from hand-to-mouth activity.

- Also, if releases from production activities are found to affect soil, then inhalation of fugitive dust should be considered as an exposure pathway.

Please call if you have any questions or need additional information.

Clariant

Clariant Corporation 4000 Monroe Road
Charlotte, NC 28205
704.331.7000

Via FedEx
Tracking number 791351322646

September 30, 2004

Diane Sinkowski
Versar, Inc.
6850 Versar Center
Springfield, VA 22151

RE: Clariant Conceptual Exposure Model

Dear Ms. Sinkowski:

At the direction today of Kimberly Tisa, USEPA Region 1, Clariant herewith submits to Versar one copy each of the following documents, all of which are dated August 31, 2004:

- Conceptual Exposure Model and Preliminary Assessment for End Users of Pigment Red 144 and 214 (company sanitized version)
- Appendix I, Volume 1
- Appendix I, Volume 2

Sincerely,

CLARIANT CORPORATION

Michael A. Teague, Ph.D.
Vice President / ESHA

Enclosures

cc (w/o enclosures): Kimberly Tisa (via fax)
Erin Russell, Esq.

CONCEPTUAL EXPOSURE MODEL AND PRELIMINARY ASSESSMENT FOR END USERS OF PIGMENT RED 144 AND 214

Prepared for Clariant Corporation
400 Monroe Road
Charlotte, NC 28205

Prepared by BBL Sciences
2940 Kerry Forest Parkway
Tallahassee, Florida 32309

August 31, 2004

THIS DOCUMENT IS COMPANY SANITIZED. NO TSCA CONFIDENTIAL BUSINESS INFORMATION IS CONTAINED IN THIS DOCUMENT

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1. Background Information

Clariant Corporation manufactures a wide range of specialty chemicals including pigments for various industrial and household products. Two of these pigments, Pigment Red 144 and Pigment Red 214 have been produced at the Coventry, Rhode Island facility since about 2002. The synthesis of these di- and trichloroaniline based pigments has the potential to inadvertently generate several congeners of polychlorinated biphenyls (referred to as total PCBs, or "tPCBs"). This has been recognized by the United States Environmental Protection Agency (USEPA) and accounted for in their rulemakings (See 48 FR 50846, November 1, 1983). Recently, Clariant (Coventry facility) discovered that approximately 19 commercial lots of pigment formula contained tPCB's in excess of the 50 ppm maximum permitted concentration. Although Clariant halted production of these pigments after discovering the contamination, certain amounts of the product were released into the stream of commerce. Clariant notified its direct customers of the problem and requested the return of any unused pigment material. Clariant also accepted returns of processed materials containing the pigment. Furthermore, Clariant performed several risk assessments of the pigments' impact on its manufacturing processes, as well as on some end use applications. The results of these assessments will be incorporated, where appropriate, into the more systematic assessment that this document will define.

To assess the likelihood for exposure and risk to human receptors associated with the potential release from the non-compliant pigment, the Clariant Corporation began the development of a Conceptual Exposure Model (CEM). A CEM forms the basis of identifying exposure scenarios that need to be evaluated in a risk assessment context (USEPA, 2004). Initially developed from existing information and relevant data, a CEM characterizes all potential or suspected sources of a chemical or chemicals of concern, types and concentrations of chemicals detected in primary products, transportation and distribution of primary products to secondary users, potentially affected media, and potential exposure pathways, including potential receptors (USEPA, 2002; USEPA, 2004). The objective of a pigment-specific CEM is to evaluate existing product-specific data to develop an understanding of the potential nature, extent, and distribution of PCB-containing products and to identify significant data gaps. The exposure scenarios that are identified during the development of a CEM are a function of the potentially exposed population, the quantities of the product sold, the possible routes of exposure to chemicals of concern, and the pathways by which chemicals of concern reach a human receptor.

The current document is an assessment of the potential exposure pathways and routes for Pigment Red 144 and 214 from manufacturing to secondary production facilities and ultimately to end product users. The presented methodology will form part of the finalized CEM.

2. Scope of the Assessment

The current exposure pathway assessment focuses on PCBs from Pigment Red 144 and 214. From a risk perspective, total PCBs (tPCBs) are considered as the chemicals of potential concern. The exposure assessment uses the existing information on the identified sources of chemicals of concern, concentrations detected in primary and secondary products (pigment and end use products), transportation and distribution of products to secondary users, potentially affected media, potential exposure pathways, and human receptors.

The primary receptors in the analysis are the production workers and users of end products containing the pigments. For the purposes of this analysis, Tier I users are defined as those customers who received pigment directly from Clariant's pigment manufacturing plant. These Tier I users incorporate the pigment into an intermediate form which is then used downstream by the manufacturers of end products. For example, a significant group of Tier I users blend pigments and plastic resin together to yield "masterbatches," which are used to achieve consistent coloration in end products. Tier II users are defined as those customers who receive pigment from a Tier I user, in an intermediate form such as a masterbatch, to help color an end product. The production workers at Clariant's pigment manufacturing facility and Clariant's Masterbatch facilities (Tier I user) are not part of this assessment because previous human health risk evaluations led to the conclusion that Clariant's workers' exposure and risk are very low in each of these manufacturing operations (analyses by Michael Ginevan of BBL). In the development of an overall Conceptual Exposure Model, due to confidentiality issues, the Tier I and Tier II users have been coded; the company-specific identifier will be used throughout the CEM in order to minimize the claims of TSCA Confidential Business Information. Table 1 lists Tier I customers and their associated codes. The list of Tier II customers is provided in Table 2.

3. Analytical Approach

3.1 Exposure Route and Pathway Dendograms

Clariant sales records were used to identify the type and quantity of pigment sold (after subtracting any returns) to each Tier I customer. The results from a Tier I customer survey conducted by Clariant were used to identify the type of end products incorporating the pigments. Clariant internal analytical results for each commercial lot produced were used to calculate the total mass and concentrations of tPCBs in those end products. The extracted information was organized into comprehensive flow chart dendograms tracing the route of pigments transport from Clariant to Tier I users, and subsequently on to Tier II users and end product users. Dendograms are relational flowcharts used to depict distribution trees. The charts were constructed using US EPA's graphics building tool, *Site Conceptual Exposure Model Builder* (http://homer.ornl.gov/oepa/programs/scem.cfm). For each Tier I user, a separate dendogram of exposure pathways associated with production activities was constructed. Those pathways included releases to air, wastewater treatment, solid waste storage, product storage, spills, storm water runoff, and end product disposal and subsequent transport into soil, groundwater, and, surface water. The identified routes of potential uptake by human receptors included inhalation, dermal absorption, and ingestion of the dust as well as crops, livestock, and wild game that may have had accumulated tPCB originating from the pigments as a result of releases to the environment. For each Tier II user, in addition to a dendogram of exposure routes and pathways associated with production activities, a flow chart of pathways and routes associated with the end product use also was developed. The end product use typically was concerned with potential off gassing of tPCBs into air and subsequent inhalation, production of surface dusts and the potential for dermal absorption and ingestion of the end product. All possible exposure route and pathway dendograms of pigment-borne tPCBs were combined into one document available only in a hardcopy format (Appendix I). An example of the output from this initial exposure pathway analysis is included as Figures 1 through 4.

3.2 Database Manipulations

3.2.1 Pooling of End Product Manufacturers into Groups

In many instances, Tier II users produce the same or similar items, and often those products have similar tPCB concentrations. In some cases different Tier II users are incorporating the same or similar raw materials

supplied by the same Tier I manufacturer. Therefore, it is possible to choose one representative producer (for example, with the maximum PCB concentration in the end product) for the purpose of delineating and evaluating the exposure pathways associated with a given product. Table 2 presents the groupings.

The major groups of Tier II users by product type were as follows:

a. Fiber and carpet yarn producers (Tier II users A.1 to A.16),

b. Users of external labeling on IV bags (Tier II users B.1 to B.6),

c. Producers of tubing for air, fuel, oil, and refrigerant (Tier II users C.1 to C.3),

d. Snow flap makers (Tier II users D.1 and D.2),

e. Makers of automotive electrical connectors and spacers (Tier II users E.1 and E.2),

f. Tool producers (Tier II users F.1 to F.3),

g. Makers of accessories (Tier II users G.1 to G.4),

h. Makers of injection-molded doghouses (Tier II user H.1),

i. Producers of packing film, tape, and food trays (Tier II users I.1 and I.2),

j. Makers of textiles (Tier II users J.1 and J.2),

k. Makers of gaskets (Tier II user K.1),

l. Producers of displays (Tier II user L.1),

m. Manufacturers of syringe disposal containers (Tier II user M.1),

n. Makers of furniture and flooring (Tier II users N.1 to N.3),

o. Makers of countertops (Tier II users O.1 to O.10),

p. Makers of tubs and spas (Tier II users P.1 to P.57),

q. Unknown end uses:

   -Q.1 (went out of business)
   -Q.2 (recycles plastics into unknown products)
   -Q.3 (refused to provide information)

r. Glue (Tier II user R.1)

3.3 Refining the Exposure Tree

Because of issues specific to some of the Tier I and Tier II users, adjustments can be made to the exposure model based on how much material was actually purchased and used in production, and on consideration of potential exposures that can be used in a semi-quantitative fashion to evaluate the significance of these pathways. These considerations are outlined in the following sections.

3.3.1 Volume Received or Used

Some Tier I and Tier II users are considered to have incomplete exposure pathways because they either never received any tPCB-containing pigment, or they returned the entire quantity sent to them. The following manufacturers were precluded from the exposure analysis (and not included in Table 2 or Figures 1 through 4) based on these criteria.

-TI.2
-TII.GTS

3.3.2 Occupational Criteria and Exposure Potential

The pooled end product groups of Tier II users were subjected to an iterative logical test utilizing two evaluation criteria: information on potential for exposure (Criterion I); and, the maximum concentration of tPCBs in end product (Criterion II). The decision whether a given group of end products may lead to a significant quantifiable exposure to human receptors is subsequently declared as a scenario of potential concern. This designation necessitates a more detailed exposure and risk assessment based on satisfaction of Criterion I and Criteria IIa or IIb, which are described in the following Section. If any of the criteria are rejected, no further risk analysis is needed because either there is no potential for exposure, or the potential exposure is quantitatively insignificant. The following section defines the selection criteria. Table 2 provides a summary of this screening analysis.

3.3.2.1 Criterion I

This criterion is a professional judgment as to whether the intended use of the product leads to a direct human exposure based on quantities of pigment sold, duration, and frequency of exposure. For example, if a product has the potential in any way to be in close contact with a human receptor, then that product would satisfy Criteria I.

3.3.2.2 Criterion II

Criterion II is sub-divided into two components depending on the anticipated exposure route. Selection Criterion IIa is applied where dermal exposure is most likely the only contact to occur, and Selection Criterion IIb is applied where an ingestion, inhalation, and dermal contact is plausible. The specifics of the criteria include:

a. For dermal exposure scenarios a product concentration-based limit of 10 ppm is used. The 10 ppm value is the cleanup level for bulk PCB remediation waste in "high occupancy areas" where a barrier is in place to "minimize human exposure" defined in the *Disposal of Polychlorinated Biphenyls (PCBs); Final Rule* (Fed Reg: June 29, 1998 (Vol. 63(124))). Typically, the categories of products that would be tested against this criterion are those handled only by adults, where the pigments are impregnated into a non-porous material (e.g., plastics), and there is no potential for the internal route of uptake. Because of the nature of this material, individuals exposed to any PCBs contained in these products would have limited direct access (i.e., low bioavailability and bioaccessibility). Examples of these types of exposure scenarios deal with installers of tubing, snow flaps, electrical connectors, etc. The value of 10 ppm is considered conservative since it is lower than the "low occupancy area" cleanup level (i.e., 25 ppm), but considers the low bioavailability of the tPCBs in these materials that are not ingestible, and do not generate significant levels of dust.

b. For ingestion and inhalation scenarios a product concentration-based limit of 1 ppm is used. The 1 ppm tPCB corresponds to the cleanup level for "high occupancy area" soil level described in the PCB Disposal Rule (Fed Reg: June 29, 1998 (Vol. 63(124)), and is considered a conservative benchmark for evaluating exposures from these types of scenarios. This criterion is applied where the normal handling and use of a given product can lead to ingestion or inhalation of the product, especially in those situations where dust is generated from the product.

4. Results

The exposure model analysis presented in Table 2 revealed that there are 118 Tier II users who received tPCB-containing pigment and whose products range from carpet and fabric materials to various injection molded items used by industrial and non-industrial users. The concentrations of tPCBs in those products range from a low of 0.04 ppm in syringe disposal containers to a high of 4.1 ppm in snow flaps. However, the application of the exposure pathways and routes selection criteria revealed that only 13 Tier II users may be associated with potential exposure. These Tier II users fall into two exposure scenarios: 1) Fiber and carpet yarn producers (Group A) and 2) Packing film, tape, and packing trays (Group J). Both scenarios are identified as potentially significant based on satisfying both Criteria I and IIb. Figures 3 through 4 depict the potential exposure routes and pathways of tPCBs for the two identified scenarios. User A.13 was the surrogate for fiber and carpet yarn scenario and I.1 for packing film, tape, and packing trays scenario. Note that due to data gaps (designated as "NR" in Table 2), the analysis is only partially complete. However, the primary purpose of the preliminary exposure model assessment is to identify and prioritize those pathways that may represent the most quantitatively significant exposure. With the data currently available, this preliminary step can be completed and allow for a more focused, detailed assessment of those prioritized pathways. By reducing the number of Tier II uses that require a detailed assessment, the "next steps" in the CEM assessment can be developed and submitted to EPA for their recommendations.

5. Next Steps

The preliminary CEM will be submitted to USEPA for their review. After any requested modifications are made to the CEM, including a determination by the parties as to which, if any, of the data gaps need to be addressed, the model will be used to identify those exposure pathways that should receive a more detailed evaluation leading to a formal risk analysis. The final model ultimately will be used to direct the development of a quantitative risk assessment of the various exposure pathways.

As previously noted, there are gaps in the qualitative and quantitative information that is required to complete an assessment of the theoretical cancer risks and non-cancer hazards associated with PCB exposure. However, performing a data gap analysis before the CEM is refined to include only those exposure pathways with potentially significant exposures would be time consuming and, in many instances, an unnecessary utilization of

limited time and resources. The obvious candidates for these efforts are the two identified scenarios of fiber and carpet yarn producers (Group A) and packing film, tape, and packing trays manufacturers (Group J). Clariant is already in the process of taking steps to augment the data for the analysis of these two scenarios.

Specifically, an identified data gap that is critical to characterizing the fiber and carpet yarn exposure pathway is quantifying the PCB congener profile in this material. Clariant proposed to submit certain pigment lots for confirmatory congener-specific analysis in an expedited manner and prior to the finalization of the Preliminary CEM. In a related area, Clariant is proposing to begin work on a case-specific method development for testing the potential exposure pathways to tPCBs in carpet fibers. These proposed research activities will be provided to EPA in a timely manner in order to continue the informational gathering aspects of this assessment.

Table 1
Confidential Codes for Tier I Users of Pigments Red 144/214

Tier I User	Code
CONFIDENTIAL	TI.1
CONFIDENTIAL	TI.2
CONFIDENTIAL	TI.3
CONFIDENTIAL	TI.4
CONFIDENTIAL	TI.5
CONFIDENTIAL	TI.6
CONFIDENTIAL	TI.7
CONFIDENTIAL	TI.8
CONFIDENTIAL	TI.9
CONFIDENTIAL	TI.10
CONFIDENTIAL	TI.11
CONFIDENTIAL	TI.12
CONFIDENTIAL	TI.13
CONFIDENTIAL	TI.14
CONFIDENTIAL	TI.15
CONFIDENTIAL	TI.16
Misc Tier II Users	
CONFIDENTIAL	TII.GTS

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Table 2
Results of Exposure Pathway and Route Assessment for Pigments Red 144/214 and the Associated tPCBs Contained in Industrial and Consumer End Use Products

Tier II User	Code	Maximum Concentration in Product (ppm tPCBs)	Criterion I (exposure possible?)	Criterion II		Proceed with HHRA?
				A (10 ppm)	B (1 ppm)	
A. Fiber and Carpet Yarn						
CONFIDENTIAL	A.1	1.5	Y	NA	Y	**Y**
CONFIDENTIAL	A.2	1.6	Y	NA	Y	**Y**
CONFIDENTIAL	A.3	NR	?	?	?	?
CONFIDENTIAL	A.4	NR	?	?	?	?
CONFIDENTIAL	A.5	1.4	Y	NA	Y	**Y**
CONFIDENTIAL	A.6	1.5	Y	NA	Y	**Y**
CONFIDENTIAL	A.7	0.9	Y	NA	Y	**Y**
CONFIDENTIAL	A.8	1.8	Y	NA	Y	**Y**
CONFIDENTIAL	A.9	2.8	Y	NA	Y	**Y**
CONFIDENTIAL	A.10	2.1	Y	NA	Y	**Y**
CONFIDENTIAL	A.11	NR	Y	NA	?	?
CONFIDENTIAL	A.12	2.1	Y	NA	Y	**Y**
CONFIDENTIAL	A.13	3.8	Y	NA	Y	**Y**
CONFIDENTIAL	A.14	2.1	Y	NA	Y	**Y**
CONFIDENTIAL	A.15	1.8	Y	NA	Y	**Y**
CONFIDENTIAL	A.16	NR	?	?	?	?
B. Intravenous Bag Labels						
CONFIDENTIAL	B.1	<10	Y	N	NA	N
CONFIDENTIAL	B.2	<10	Y	N	NA	N
CONFIDENTIAL	B.3	<10	Y	N	NA	N
CONFIDENTIAL	B.4	<10	Y	N	NA	N
CONFIDENTIAL	B.5	<10	Y	N	NA	N
CONFIDENTIAL	B.6	<10	Y	N	NA	N
C. Air, Fuel, Oil, and Refrigerant Tubing						
CONFIDENTIAL	C.1	0.3	Y	N	NA	N
CONFIDENTIAL	C.2	0.1	Y	N	NA	N
CONFIDENTIAL	C.3	2.0	Y	N	NA	N
D. Snow Flaps						
CONFIDENTIAL	D.1	4.1	Y	N	NA	N
CONFIDENTIAL	D.2	4.1	Y	N	NA	N
E. Automotive Electrical Connectors and Spacers						
CONFIDENTIAL	E.1	0.7	Y	N	NA	N
CONFIDENTIAL	E.2	0.7	Y	N	NA	N
F. Tools						
CONFIDENTIAL	F.1	0.018	Y	N	NA	N
CONFIDENTIAL	F.2	0.7	Y	N	NA	N
CONFIDENTIAL	F.3	1.2	Y	N	NA	N
G. Accessories						
CONFIDENTIAL	G.1	0.8	Y	N	NA	N
CONFIDENTIAL	G.2	0.7	Y	N	NA	N
CONFIDENTIAL	G.3	0.4	Y	N	NA	N
CONFIDENTIAL	G.4	0.6	Y	N	NA	N

COMPANY SANITIZED. DOES NOT CONTAIN TSCA CONFIDENTIAL BUSINESS INFORMATION

Table 2
Results of Exposure Pathway and Route Assessment for Pigments Red 144/214 and the Associated tPCBs Contained in Industrial and Consumer End Use Products

Tier II User	Code	Maximum Concentration in Product (ppm tPCBs)	Criterion I (exposure possible?)	Criterion II		Proceed with Risk Assessment?
				A (10 ppm)	B (1 ppm)	
H. Injection Molded Doghouses						
CONFIDENTIAL	H.1	0.08	Y	N	NA	N
I. Packing Film, Tape, and Food Trays						
CONFIDENTIAL	I.1	1.1	Y	NA	Y	**Y**
CONFIDENTIAL	I.2	0.06	Y	NA	N	N
J. Textiles						
CONFIDENTIAL	J.1	NR	Y	NA	?	?
CONFIDENTIAL	J.2	NR	N[5]	NA	?	N
K. Gaskets						
CONFIDENTIAL	K.1	0.66	Y	N	NA	N
L. Displays						
CONFIDENTIAL	L.1	0.66	Y	N	NA	N
M. Syringe Containers						
CONFIDENTIAL	M.1	0.04	Y	N	NA	N
N. Furniture and Flooring						
CONFIDENTIAL	N.1	NR	Y	NA	?	?
CONFIDENTIAL	N.2	NR	Y	NA	?	?
CONFIDENTIAL	N.3	NR	Y	NA	?	?
O. Countertops						
CONFIDENTIAL	O.1	0.1	Y	N	NA	N
CONFIDENTIAL	O.2	0.1	Y	N	NA	N
CONFIDENTIAL	O.3	0.1	Y	N	NA	N
CONFIDENTIAL	O.4	0.1	Y	N	NA	N
CONFIDENTIAL	O.5	0.1	Y	N	NA	N
CONFIDENTIAL	O.6	0.1	Y	N	NA	N
CONFIDENTIAL	O.7	0.1	Y	N	NA	N
CONFIDENTIAL	O.8	0.1	Y	N	NA	N
CONFIDENTIAL	O.9	0.1	Y	N	NA	N
CONFIDENTIAL	O.10	0.1	Y	N	NA	N
P. Tubs and Spas						
CONFIDENTIAL	P.1	0.1	Y	N	NA	N
CONFIDENTIAL	P.2	0.1	Y	N	NA	N
CONFIDENTIAL	P.3	0.1	Y	N	NA	N
CONFIDENTIAL	P.4	0.1	Y	N	NA	N
CONFIDENTIAL	P.5	0.1	Y	N	NA	N
CONFIDENTIAL	P.6	0.1	Y	N	NA	N
CONFIDENTIAL	P.7	0.1	Y	N	NA	N
CONFIDENTIAL	P.8	0.1	Y	N	NA	N
CONFIDENTIAL	P.9	0.1	Y	N	NA	N
CONFIDENTIAL	P.10	0.1	Y	N	NA	N
CONFIDENTIAL	P.11	0.1	Y	N	NA	N
CONFIDENTIAL	P.12	0.1	Y	N	NA	N
CONFIDENTIAL	P.13	0.1	Y	N	NA	N

Table 2
Results of Exposure Pathway and Route Assessment for Pigments Red 144/214 and the Associated tPCBs Contained in Industrial and Consumer End Use Products

Tier II User	Code	Maximum Concentration in Product (ppm tPCBs)	Criterion I (exposure possible?)	Criterion II		Proceed with Risk Assessment?
				A (10 ppm)	B (1 ppm)	
P. Tubs and Spas (Cont)						
CONFIDENTIAL	P.14	0.1	Y	N	NA	N
CONFIDENTIAL	P.15	0.1	Y	N	NA	N
CONFIDENTIAL	P.16	0.1	Y	N	NA	N
CONFIDENTIAL	P.17	0.1	Y	N	NA	N
CONFIDENTIAL	P.18	0.1	Y	N	NA	N
CONFIDENTIAL	P.19	0.1	Y	N	NA	N
CONFIDENTIAL	P.20	0.1	Y	N	NA	N
CONFIDENTIAL	P.21	0.1	Y	N	NA	N
CONFIDENTIAL	P.22	0.1	Y	N	NA	N
CONFIDENTIAL	P.23	0.1	Y	N	NA	N
CONFIDENTIAL	P.24	0.1	Y	N	NA	N
CONFIDENTIAL	P.25	0.1	Y	N	NA	N
CONFIDENTIAL	P.26	0.1	Y	N	NA	N
CONFIDENTIAL	P.27	0.1	Y	N	NA	N
CONFIDENTIAL	P.28	0.1	Y	N	NA	N
CONFIDENTIAL	P.29	0.1	Y	N	NA	N
CONFIDENTIAL	P.30	0.1	Y	N	NA	N
CONFIDENTIAL	P.31	0.1	Y	N	NA	N
CONFIDENTIAL	P.32	0.1	Y	N	NA	N
CONFIDENTIAL	P.33	0.1	Y	N	NA	N
CONFIDENTIAL	P.34	0.1	Y	N	NA	N
CONFIDENTIAL	P.35	0.1	Y	N	NA	N
CONFIDENTIAL	P.36	0.1	Y	N	NA	N
CONFIDENTIAL	P.37	0.1	Y	N	NA	N
CONFIDENTIAL	P.38	0.1	Y	N	NA	N
CONFIDENTIAL	P.39	0.1	Y	N	NA	N
CONFIDENTIAL	P.40	0.1	Y	N	NA	N
CONFIDENTIAL	P.41	0.1	Y	N	NA	N
CONFIDENTIAL	P.42	0.1	Y	N	NA	N
CONFIDENTIAL	P.43	0.1	Y	N	NA	N
CONFIDENTIAL	P.44	0.1	Y	N	NA	N
CONFIDENTIAL	P.45	0.1	Y	N	NA	N
CONFIDENTIAL	P.46	0.1	Y	N	NA	N
CONFIDENTIAL	P.47	0.1	Y	N	NA	N
CONFIDENTIAL	P.48	0.1	Y	N	NA	N
CONFIDENTIAL	P.49	0.1	Y	N	NA	N
CONFIDENTIAL	P.50	0.1	Y	N	NA	N
CONFIDENTIAL	P.51	0.1	Y	N	NA	N
CONFIDENTIAL	P.52	0.1	Y	N	NA	N
CONFIDENTIAL	P.53	0.1	Y	N	NA	N
CONFIDENTIAL	P.54	0.1	Y	N	NA	N
CONFIDENTIAL	P.55	0.1	Y	N	NA	N
CONFIDENTIAL	P.56	0.1	Y	N	NA	N

Table 2
Results of Exposure Pathway and Route Assessment for Pigments Red 144/214 and the Associated tPCBs Contained in Industrial and Consumer End Use Products

Tier II User	Code	Maximum Concentration in Product (ppm tPCBs)	Criterion I (exposure possible?)	Criterion II		Proceed with Risk Assessment?
				A (10 ppm)	B (1 ppm)	
P. Tubs and Spas (Cont)						
CONFIDENTIAL	P.57	0.1	Y	N	NA	N
Q. Unknown						
CONFIDENTIAL	Q.1	0.66	?	?	?	?
CONFIDENTIAL	Q.2	NR	?	?	?	?
CONFIDENTIAL	Q.3	NR	?	?	?	?
R. Glue						
CONFIDENTIAL	R.1	NR	?	?	?	?

NR-Not reported in database; NA-Not applicable; HHRA-Human health risk assessment, [1]Out of business, [2]Recycling of plastics into unknown products, [3]Client refused to provide information, ?-Assessment not possible due to data gap

Figure 1. Distribution of Pigment 144/214 from Clariant Coventry to Tier I Users

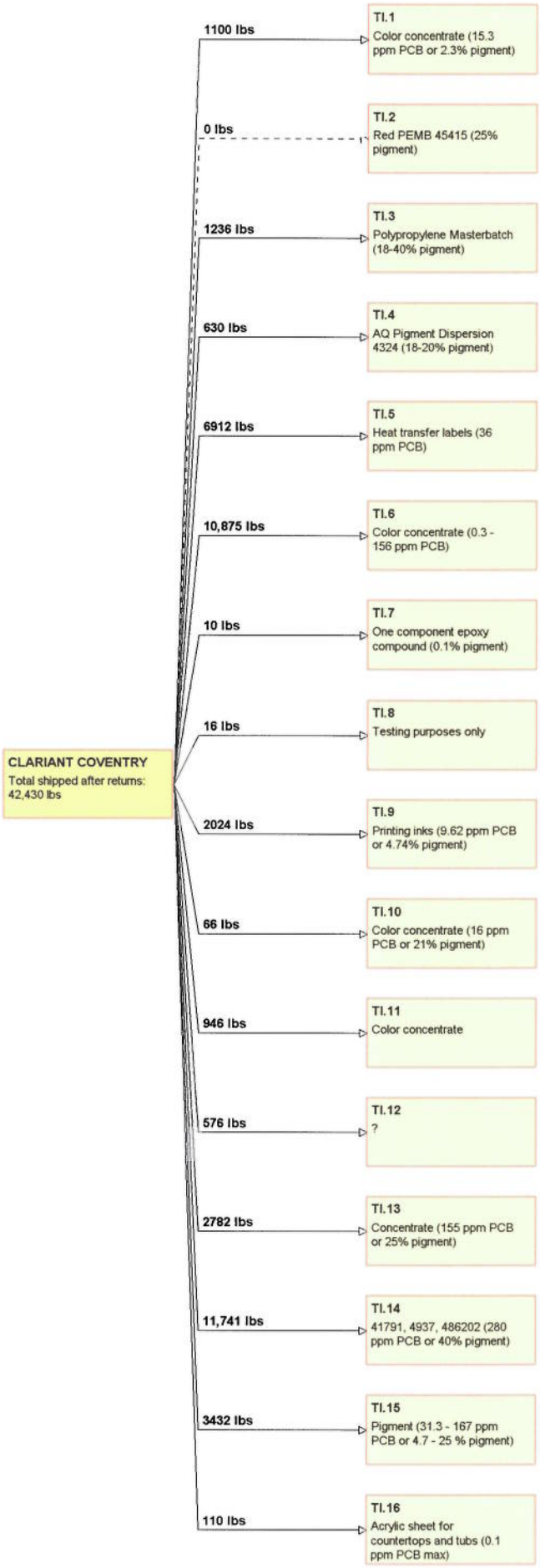
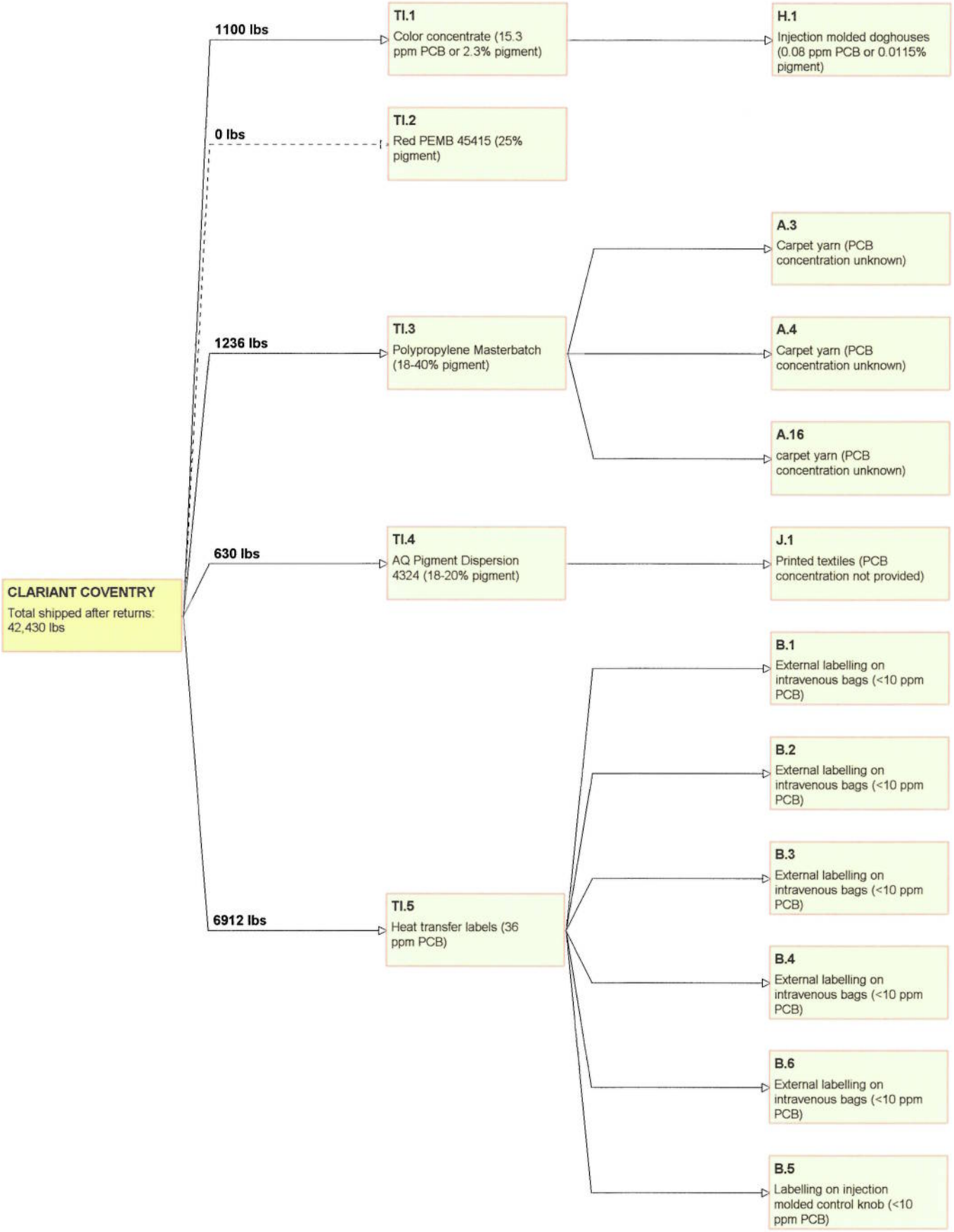
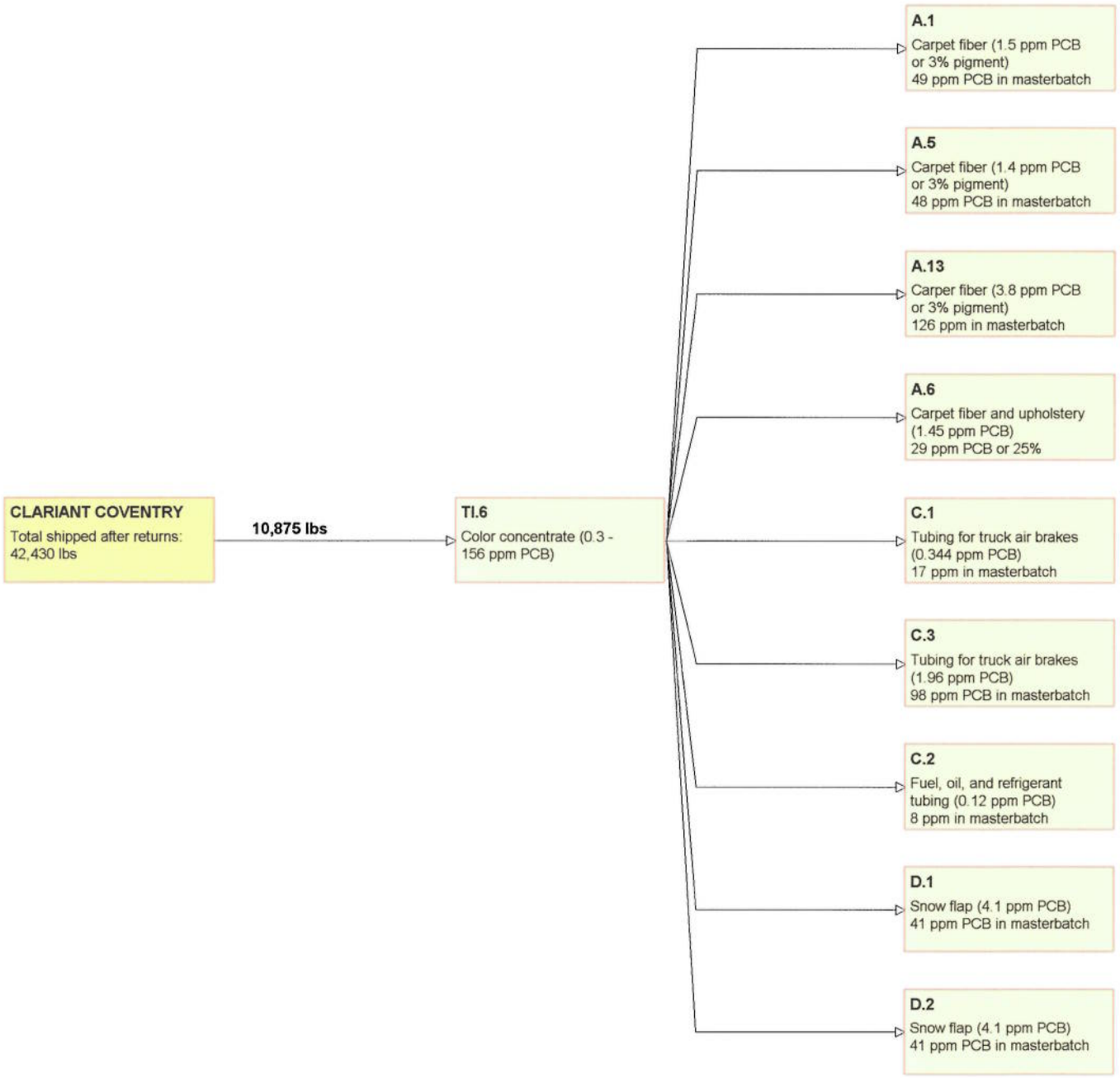
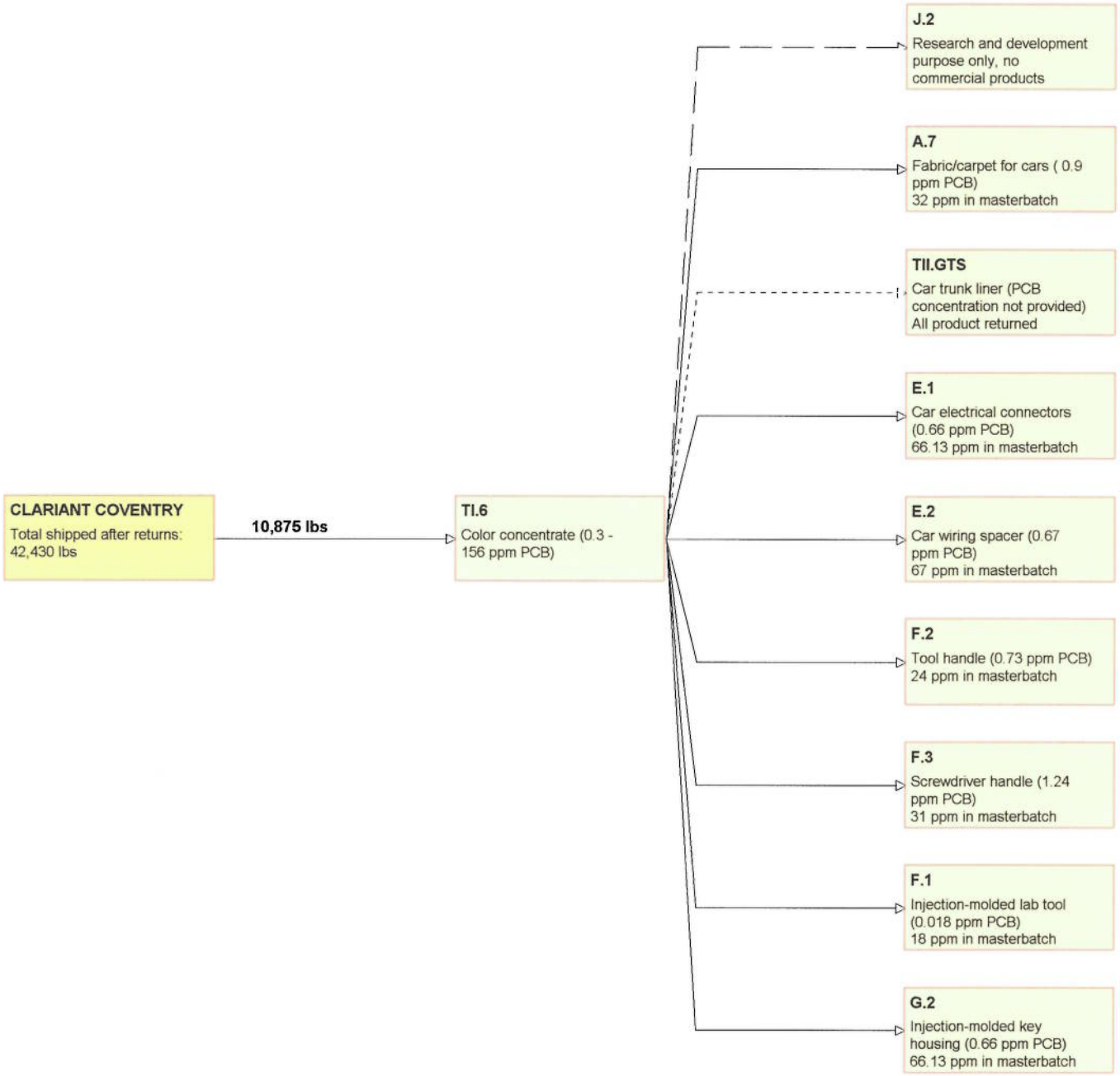
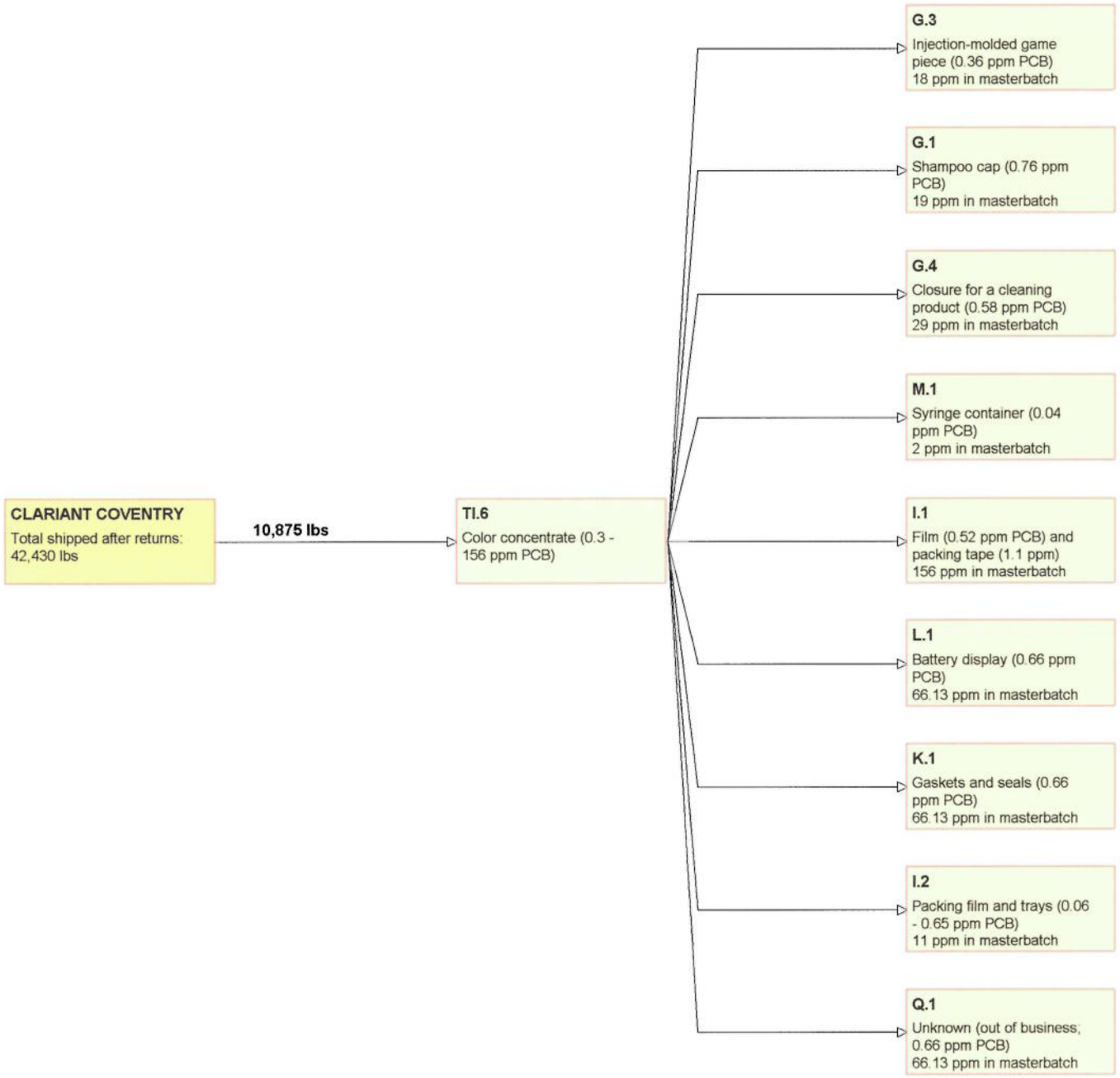

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
1100 lbs
TI.1
Color concentrate (15.3 ppm PCB or 2.3% pigment)
0 lbs
TI.2
Red PEMB 45415 (25% pigment)
1236 lbs
TI.3
Polypropylene Masterbatch (18-40% pigment)
630 lbs
TI.4
AQ Pigment Dispersion 4324 (18-20% pigment)
6912 lbs
TI.5
Heat transfer labels (36 ppm PCB)
10,875 lbs
TI.6
Color concentrate (0.3 - 156 ppm PCB)
10 lbs
TI.7
One component epoxy compound (0.1% pigment)
16 lbs
TI.8
Testing purposes only
2024 lbs
TI.9
Printing inks (9.62 ppm PCB or 4.74% pigment)
66 lbs
TI.10
Color concentrate (16 ppm PCB or 21% pigment)
946 lbs
TI.11
Color concentrate
576 lbs
TI.12
?
2782 lbs
TI.13
Concentrate (155 ppm PCB or 25% pigment)
11,741 lbs
TI.14
41791, 4937, 486202 (280 ppm PCB or 40% pigment)
3432 lbs
TI.15
Pigment (31.3 - 167 ppm PCB or 4.7 - 25 % pigment)
110 lbs
TI.16
Acrylic sheet for countertops and tubs (0.1 ppm PCB max)

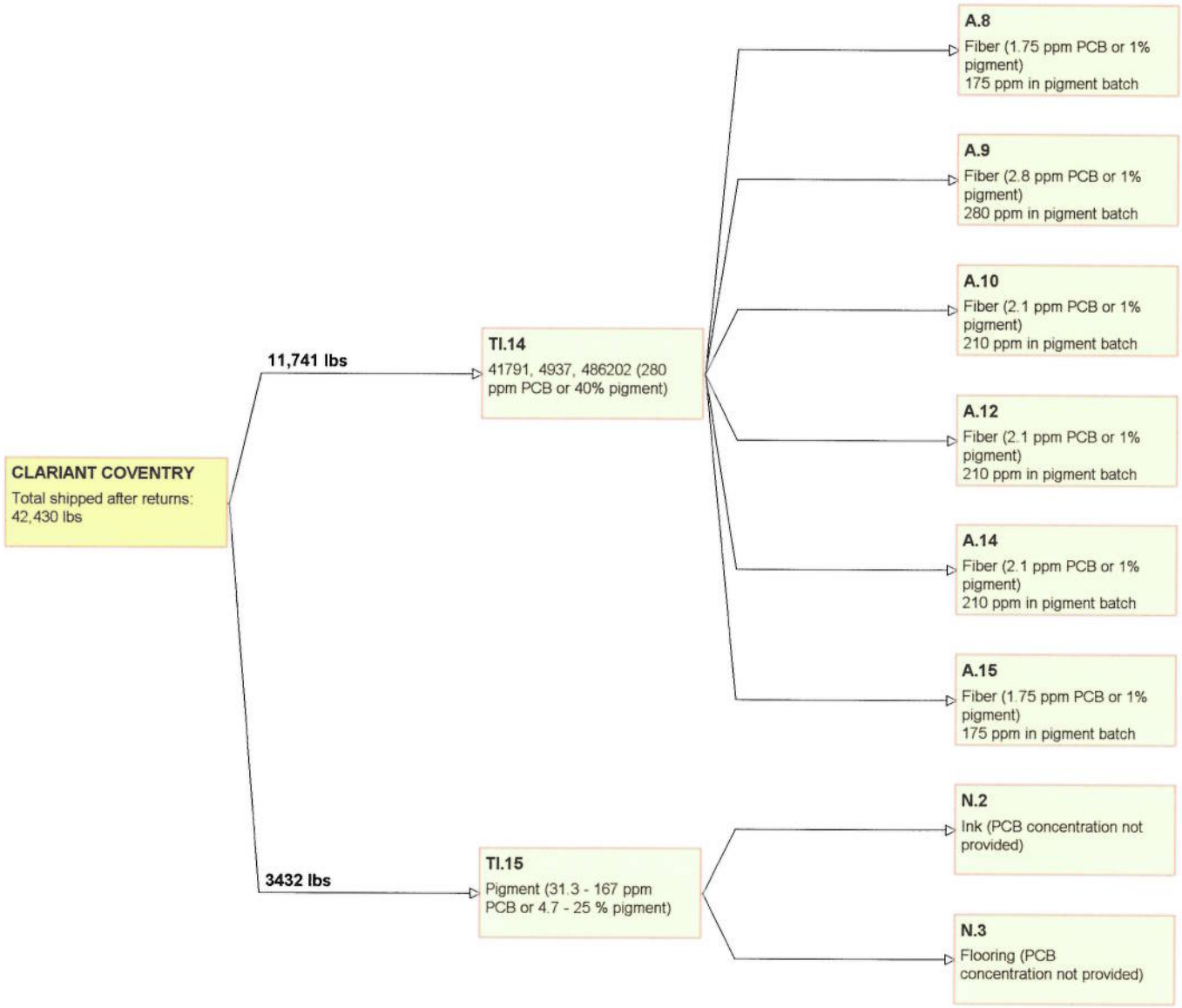
Figure 2. Distribution of Pigment 144/214 from Clariant Coventry to Tier II Users

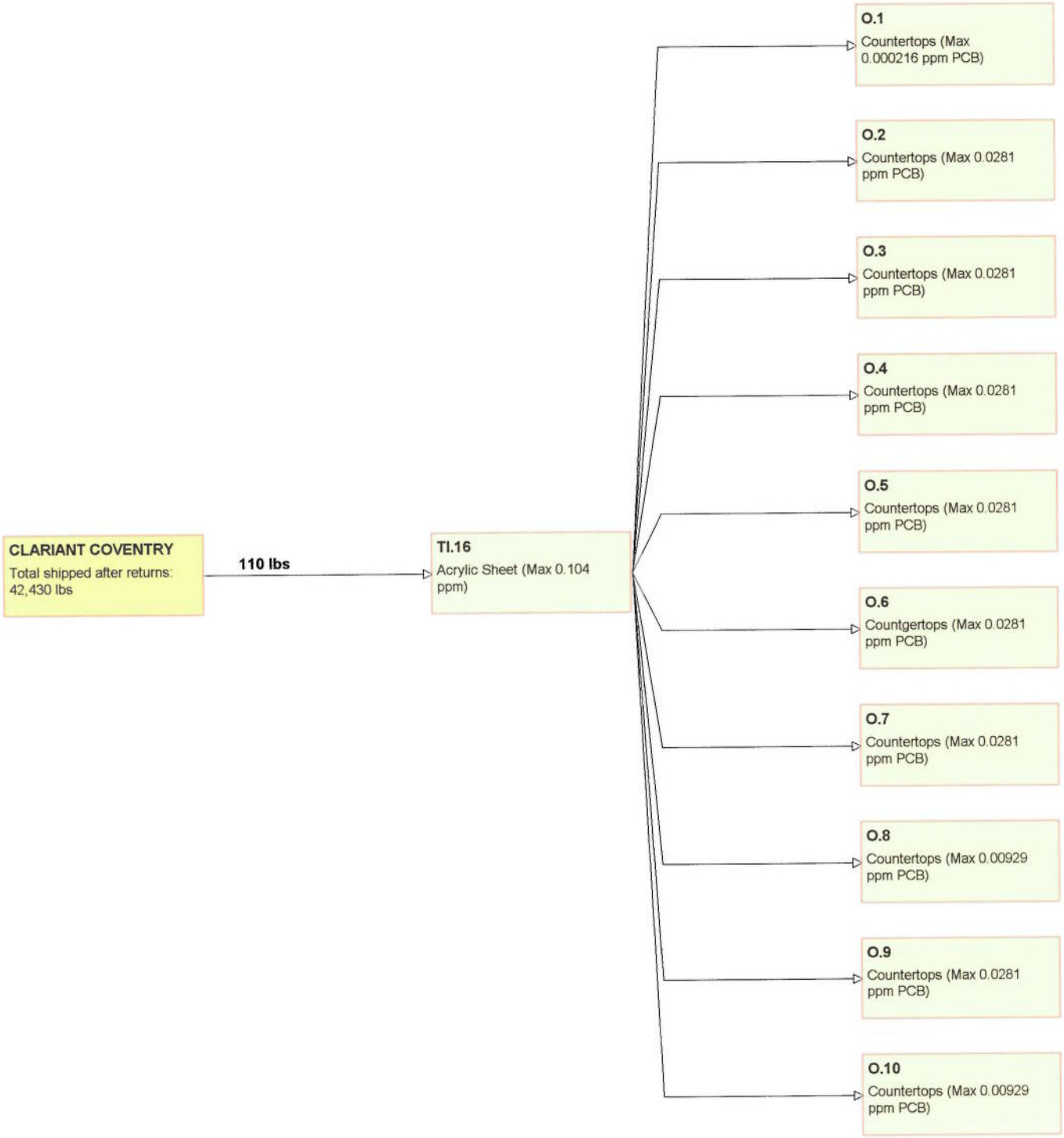

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
1100 lbs
0 lbs
1236 lbs
630 lbs
6912 lbs
TI.1
Color concentrate (15.3 ppm PCB or 2.3% pigment)
TI.2
Red PEMB 45415 (25% pigment)
TI.3
Polypropylene Masterbatch (18-40% pigment)
TI.4
AQ Pigment Dispersion 4324 (18-20% pigment)
TI.5
Heat transfer labels (36 ppm PCB)
H.1
Injection molded doghouses (0.08 ppm PCB or 0.0115% pigment)
A.3
Carpet yarn (PCB concentration unknown)
A.4
Carpet yarn (PCB concentration unknown)
A.16
carpet yarn (PCB concentration unknown)
J.1
Printed textiles (PCB concentration not provided)
B.1
External labelling on intravenous bags (<10 ppm PCB)
B.2
External labelling on intravenous bags (<10 ppm PCB)
B.3
External labelling on intravenous bags (<10 ppm PCB)
B.4
External labelling on intravenous bags (<10 ppm PCB)
B.6
External labelling on intravenous bags (<10 ppm PCB)
B.5
Labelling on injection molded control knob (<10 ppm PCB)

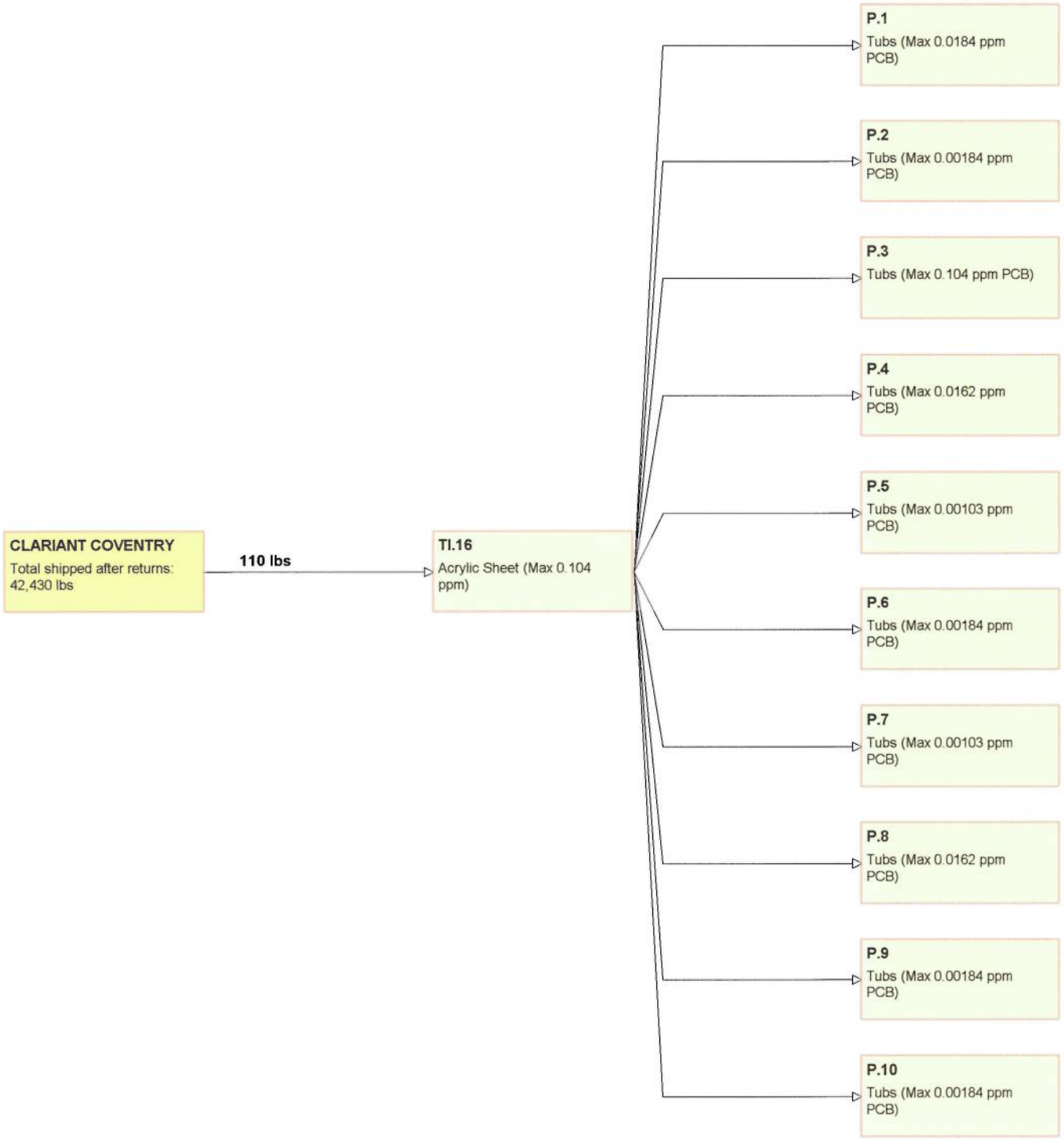

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
10,875 lbs
TI.6
Color concentrate (0.3 - 156 ppm PCB)
A.1
Carpet fiber (1.5 ppm PCB or 3% pigment)
49 ppm PCB in masterbatch
A.5
Carpet fiber (1.4 ppm PCB or 3% pigment)
48 ppm PCB in masterbatch
A.13
Carper fiber (3.8 ppm PCB or 3% pigment)
126 ppm in masterbatch
A.6
Carpet fiber and upholstery (1.45 ppm PCB)
29 ppm PCB or 25%
C.1
Tubing for truck air brakes (0.344 ppm PCB)
17 ppm in masterbatch
C.3
Tubing for truck air brakes (1.96 ppm PCB)
98 ppm PCB in masterbatch
C.2
Fuel, oil, and refrigerant tubing (0.12 ppm PCB)
8 ppm in masterbatch
D.1
Snow flap (4.1 ppm PCB)
41 ppm PCB in masterbatch
D.2
Snow flap (4.1 ppm PCB)
41 ppm PCB in masterbatch

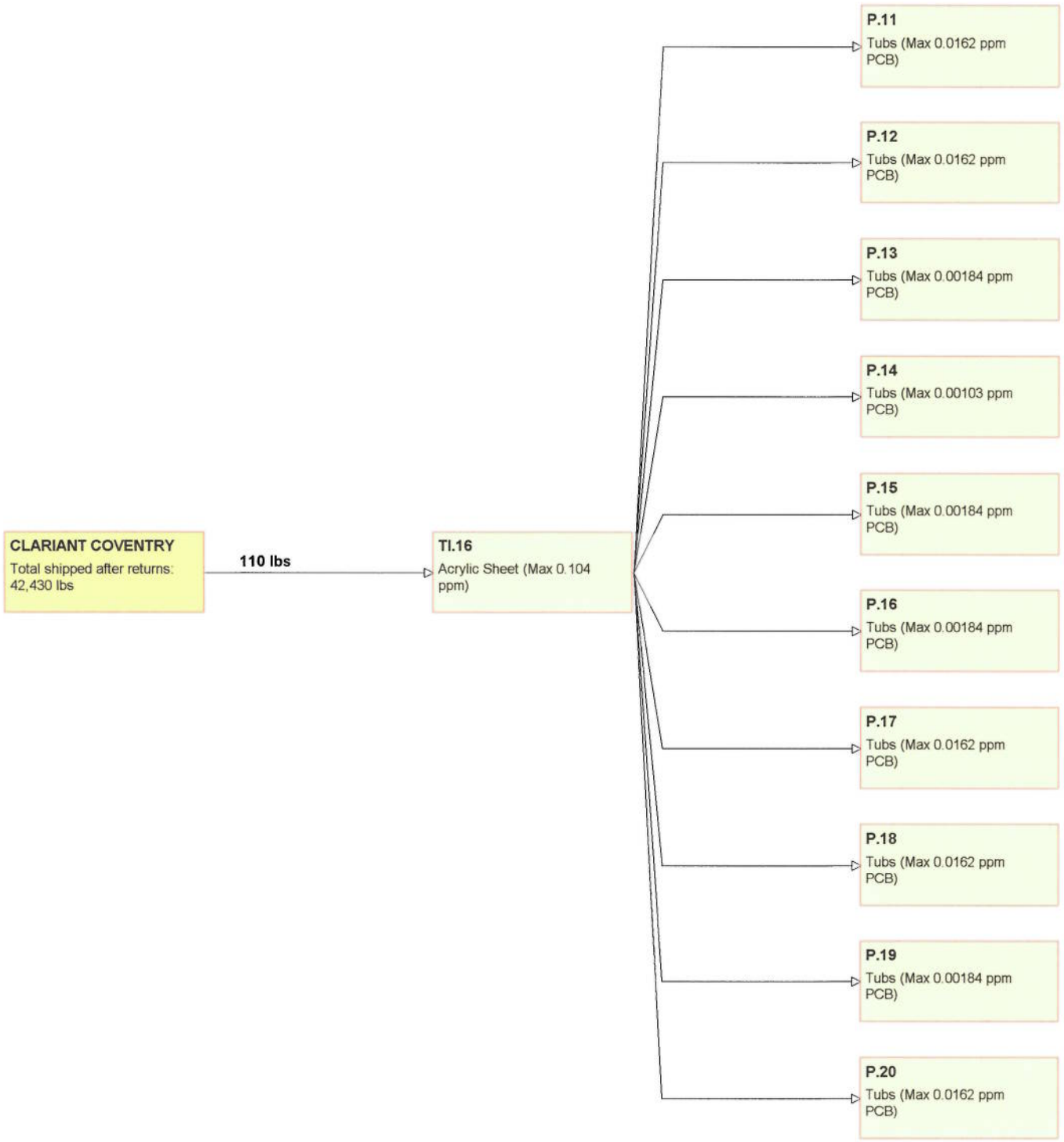

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
10,875 lbs
TI.6
Color concentrate (0.3 - 156 ppm PCB)
J.2
Research and development purpose only, no commercial products
A.7
Fabric/carpet for cars (0.9 ppm PCB)
32 ppm in masterbatch
TII.GTS
Car trunk liner (PCB concentration not provided)
All product returned
E.1
Car electrical connectors (0.66 ppm PCB)
66.13 ppm in masterbatch
E.2
Car wiring spacer (0.67 ppm PCB)
67 ppm in masterbatch
F.2
Tool handle (0.73 ppm PCB)
24 ppm in masterbatch
F.3
Screwdriver handle (1.24 ppm PCB)
31 ppm in masterbatch
F.1
Injection-molded lab tool (0.018 ppm PCB)
18 ppm in masterbatch
G.2
Injection-molded key housing (0.66 ppm PCB)
66.13 ppm in masterbatch

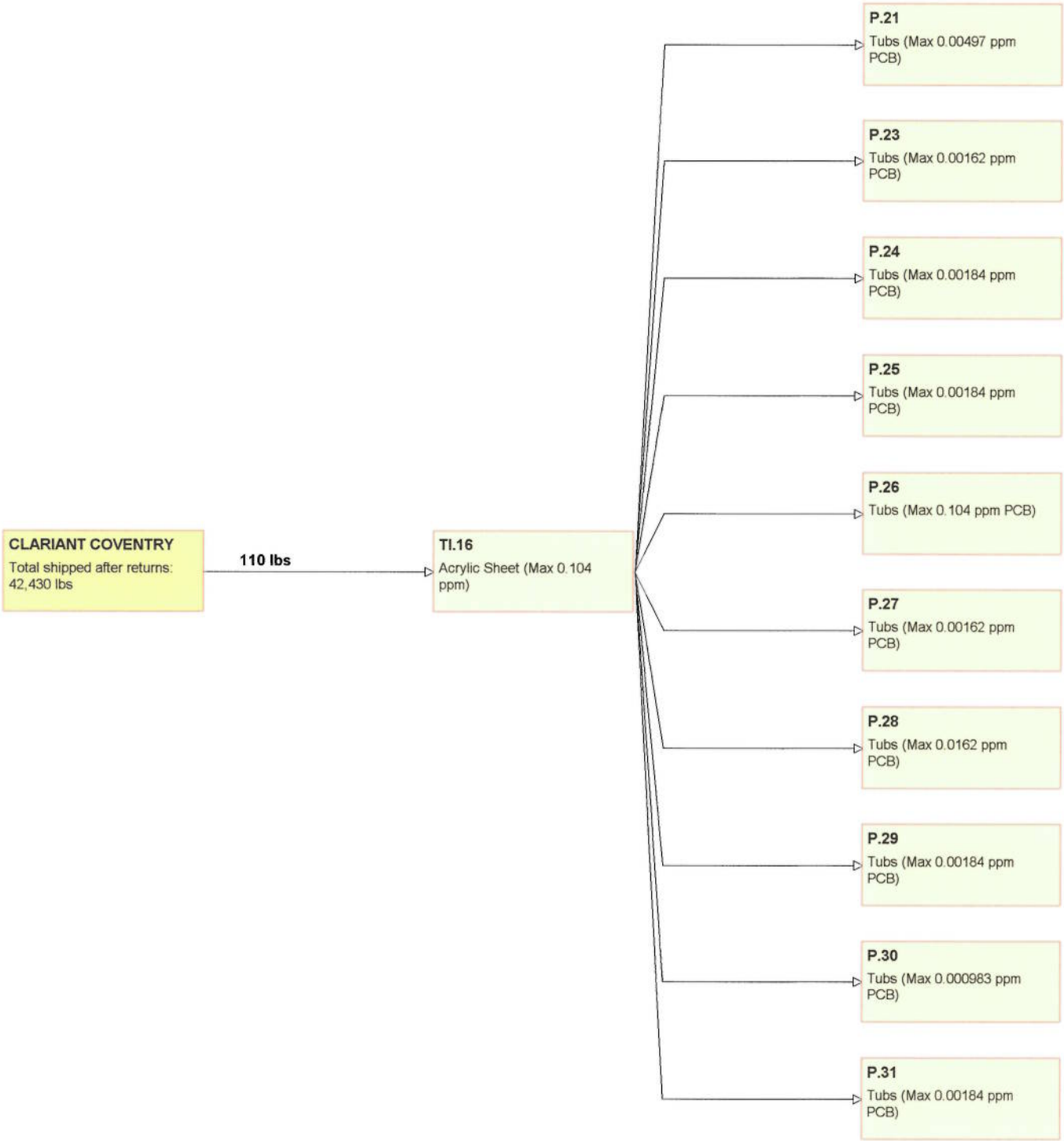

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
10,875 lbs
TI.6
Color concentrate (0.3 - 156 ppm PCB)
G.3
Injection-molded game piece (0.36 ppm PCB)
18 ppm in masterbatch
G.1
Shampoo cap (0.76 ppm PCB)
19 ppm in masterbatch
G.4
Closure for a cleaning product (0.58 ppm PCB)
29 ppm in masterbatch
M.1
Syringe container (0.04 ppm PCB)
2 ppm in masterbatch
I.1
Film (0.52 ppm PCB) and packing tape (1.1 ppm)
156 ppm in masterbatch
L.1
Battery display (0.66 ppm PCB)
66.13 ppm in masterbatch
K.1
Gaskets and seals (0.66 ppm PCB)
66.13 ppm in masterbatch
I.2
Packing film and trays (0.06 - 0.65 ppm PCB)
11 ppm in masterbatch
Q.1
Unknown (out of business, 0.66 ppm PCB)
66.13 ppm in masterbatch

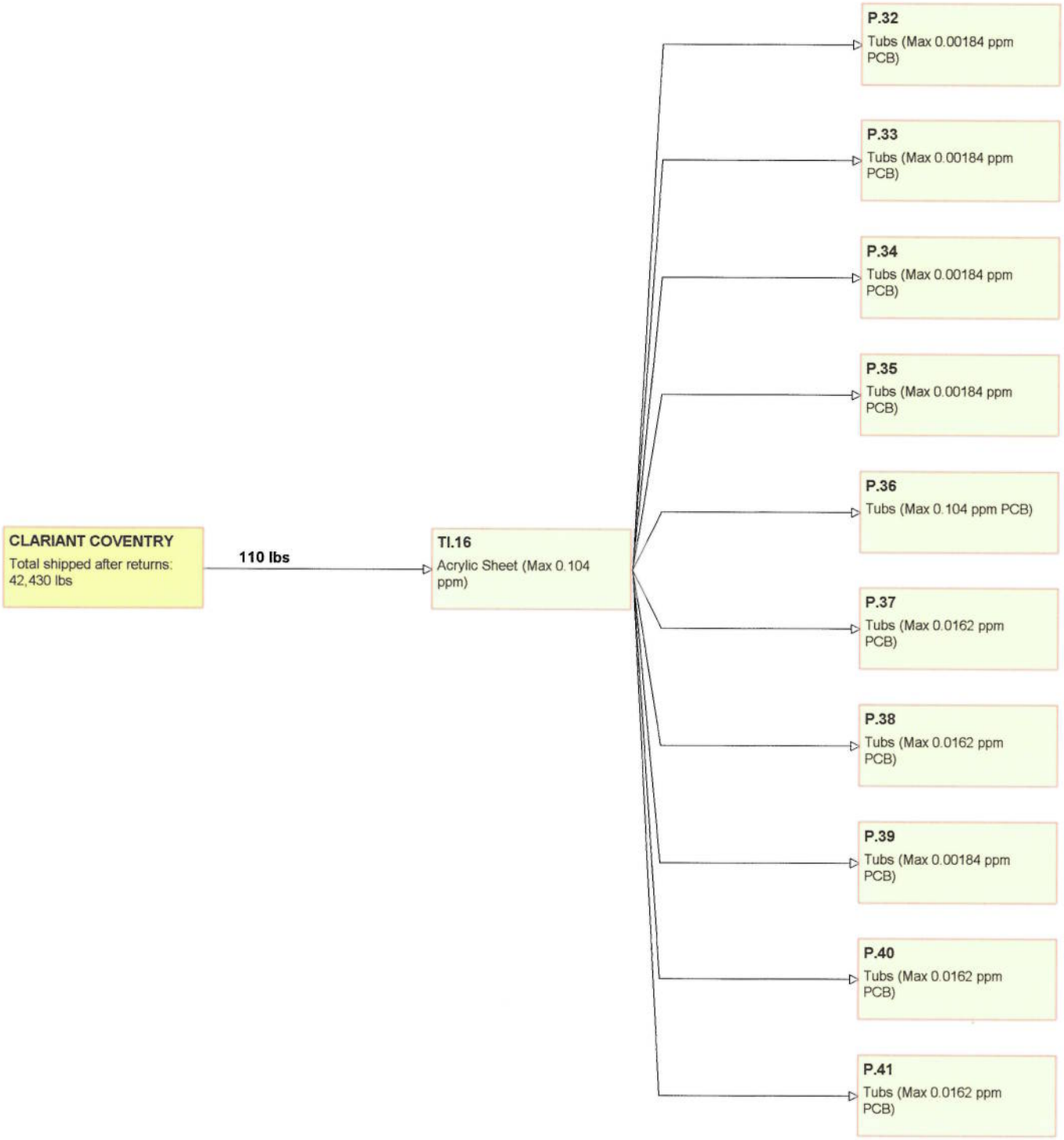

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
11,741 lbs
TI.14
41791, 4937, 486202 (280 ppm PCB or 40% pigment)
A.8
Fiber (1.75 ppm PCB or 1% pigment)
175 ppm in pigment batch
A.9
Fiber (2.8 ppm PCB or 1% pigment)
280 ppm in pigment batch
A.10
Fiber (2.1 ppm PCB or 1% pigment)
210 ppm in pigment batch
A.12
Fiber (2.1 ppm PCB or 1% pigment)
210 ppm in pigment batch
A.14
Fiber (2.1 ppm PCB or 1% pigment)
210 ppm in pigment batch
A.15
Fiber (1.75 ppm PCB or 1% pigment)
175 ppm in pigment batch
3432 lbs
TI.15
Pigment (31.3 - 167 ppm PCB or 4.7 - 25 % pigment)
N.2
Ink (PCB concentration not provided)
N.3
Flooring (PCB concentration not provided)

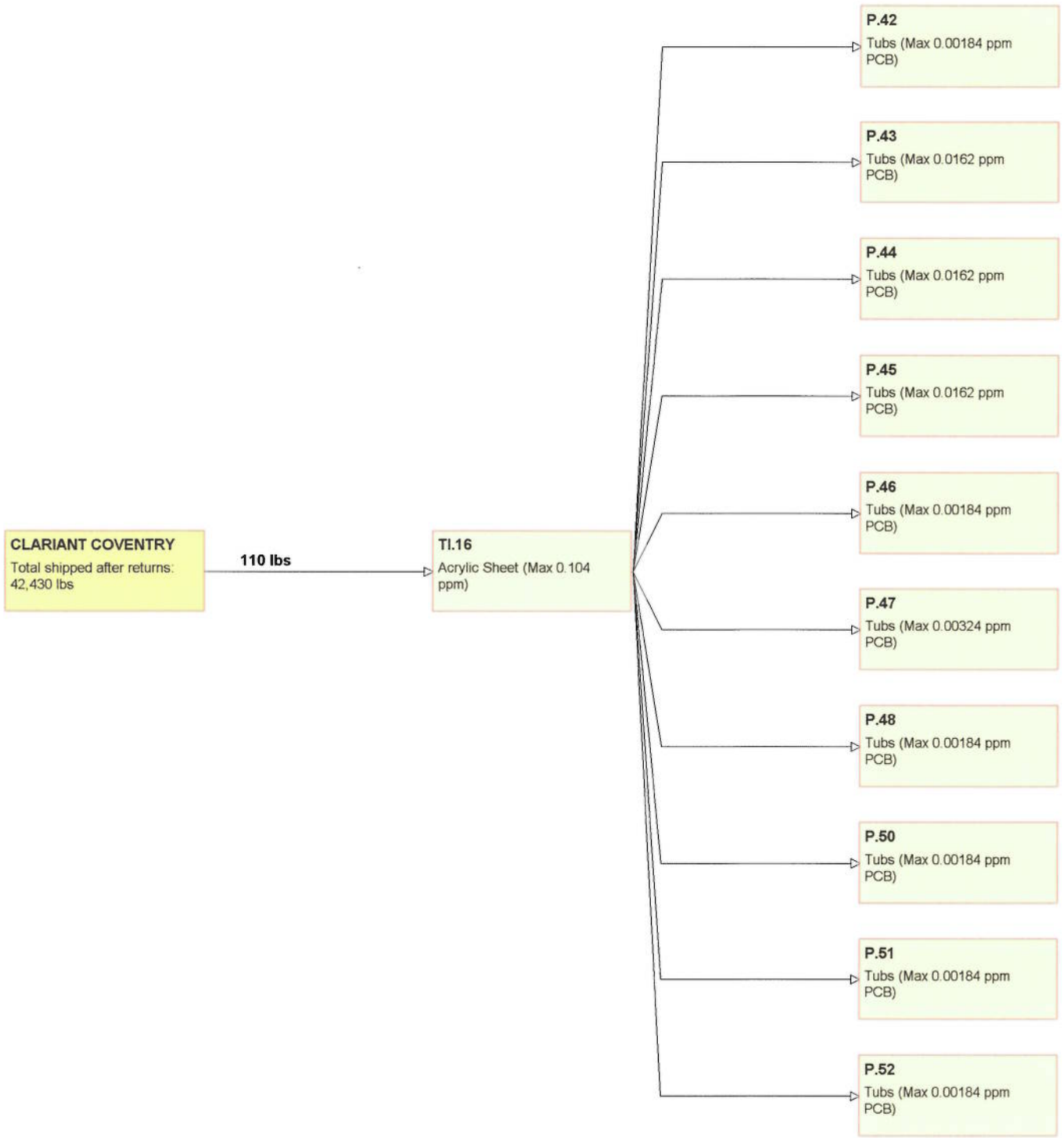

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
O.1
Countertops (Max 0.000216 ppm PCB)
O.2
Countertops (Max 0.0281 ppm PCB)
O.3
Countertops (Max 0.0281 ppm PCB)
O.4
Countertops (Max 0.0281 ppm PCB)
O.5
Countertops (Max 0.0281 ppm PCB)
O.6
Countgertops (Max 0.0281 ppm PCB)
O.7
Countertops (Max 0.0281 ppm PCB)
O.8
Countertops (Max 0.00929 ppm PCB)
O.9
Countertops (Max 0.0281 ppm PCB)
O.10
Countertops (Max 0.00929 ppm PCB)


CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
P.1
Tubs (Max 0.0184 ppm PCB)
P.2
Tubs (Max 0.00184 ppm PCB)
P.3
Tubs (Max 0.104 ppm PCB)
P.4
Tubs (Max 0.0162 ppm PCB)
P.5
Tubs (Max 0.00103 ppm PCB)
P.6
Tubs (Max 0.00184 ppm PCB)
P.7
Tubs (Max 0.00103 ppm PCB)
P.8
Tubs (Max 0.0162 ppm PCB)
P.9
Tubs (Max 0.00184 ppm PCB)
P.10
Tubs (Max 0.00184 ppm PCB)


CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
P.11
Tubs (Max 0.0162 ppm PCB)
P.12
Tubs (Max 0.0162 ppm PCB)
P.13
Tubs (Max 0.00184 ppm PCB)
P.14
Tubs (Max 0.00103 ppm PCB)
P.15
Tubs (Max 0.00184 ppm PCB)
P.16
Tubs (Max 0.00184 ppm PCB)
P.17
Tubs (Max 0.0162 ppm PCB)
P.18
Tubs (Max 0.0162 ppm PCB)
P.19
Tubs (Max 0.00184 ppm PCB)
P.20
Tubs (Max 0.0162 ppm PCB)


CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
P.21
Tubs (Max 0.00497 ppm PCB)
P.23
Tubs (Max 0.00162 ppm PCB)
P.24
Tubs (Max 0.00184 ppm PCB)
P.25
Tubs (Max 0.00184 ppm PCB)
P.26
Tubs (Max 0.104 ppm PCB)
P.27
Tubs (Max 0.00162 ppm PCB)
P.28
Tubs (Max 0.0162 ppm PCB)
P.29
Tubs (Max 0.00184 ppm PCB)
P.30
Tubs (Max 0.000983 ppm PCB)
P.31
Tubs (Max 0.00184 ppm PCB)


CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
P.32
Tubs (Max 0.00184 ppm PCB)
P.33
Tubs (Max 0.00184 ppm PCB)
P.34
Tubs (Max 0.00184 ppm PCB)
P.35
Tubs (Max 0.00184 ppm PCB)
P.36
Tubs (Max 0.104 ppm PCB)
P.37
Tubs (Max 0.0162 ppm PCB)
P.38
Tubs (Max 0.0162 ppm PCB)
P.39
Tubs (Max 0.00184 ppm PCB)
P.40
Tubs (Max 0.0162 ppm PCB)
P.41
Tubs (Max 0.0162 ppm PCB)


CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
P.42
Tubs (Max 0.00184 ppm PCB)
P.43
Tubs (Max 0.0162 ppm PCB)
P.44
Tubs (Max 0.0162 ppm PCB)
P.45
Tubs (Max 0.0162 ppm PCB)
P.46
Tubs (Max 0.00184 ppm PCB)
P.47
Tubs (Max 0.00324 ppm PCB)
P.48
Tubs (Max 0.00184 ppm PCB)
P.50
Tubs (Max 0.00184 ppm PCB)
P.51
Tubs (Max 0.00184 ppm PCB)
P.52
Tubs (Max 0.00184 ppm PCB)

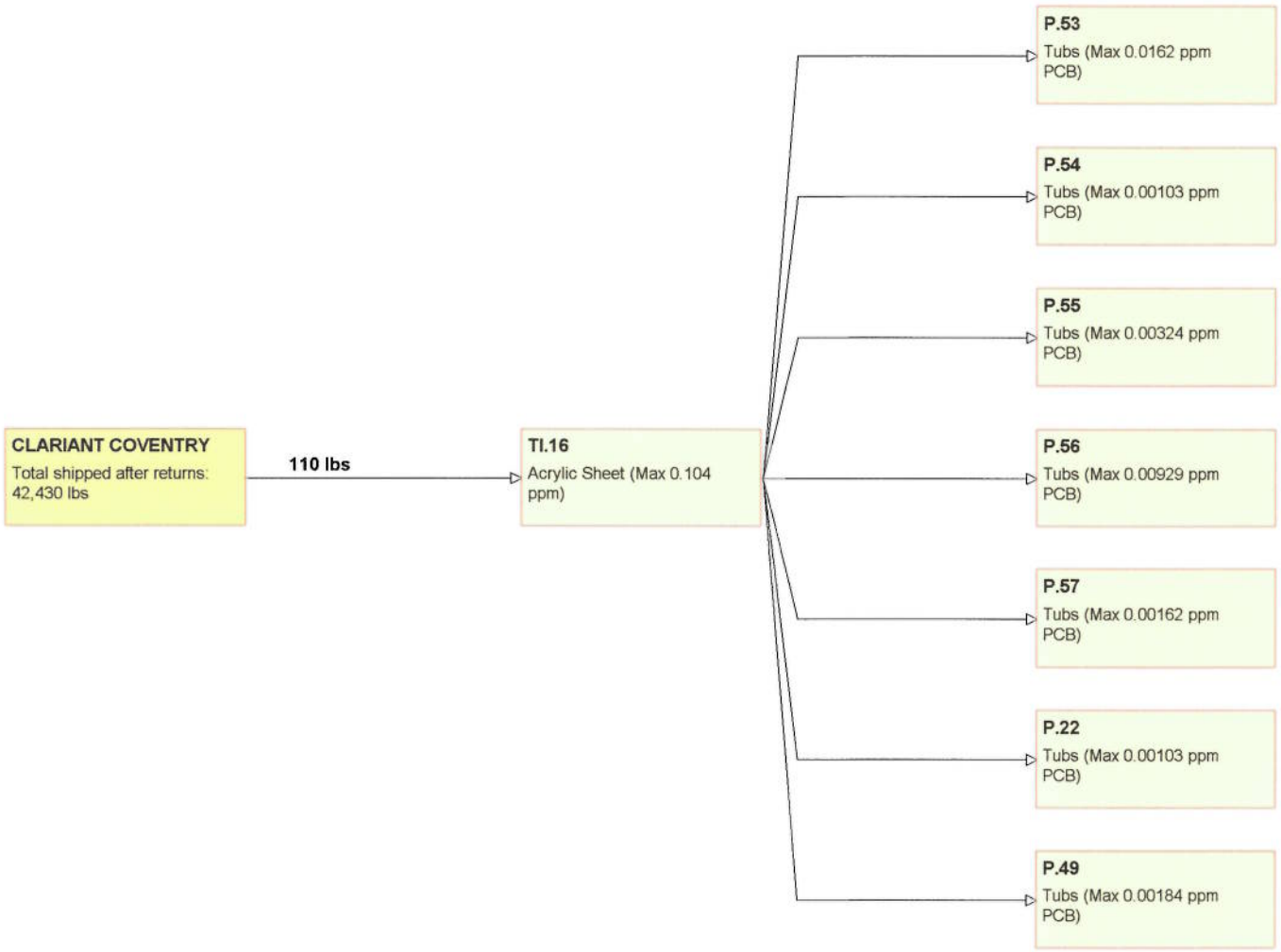
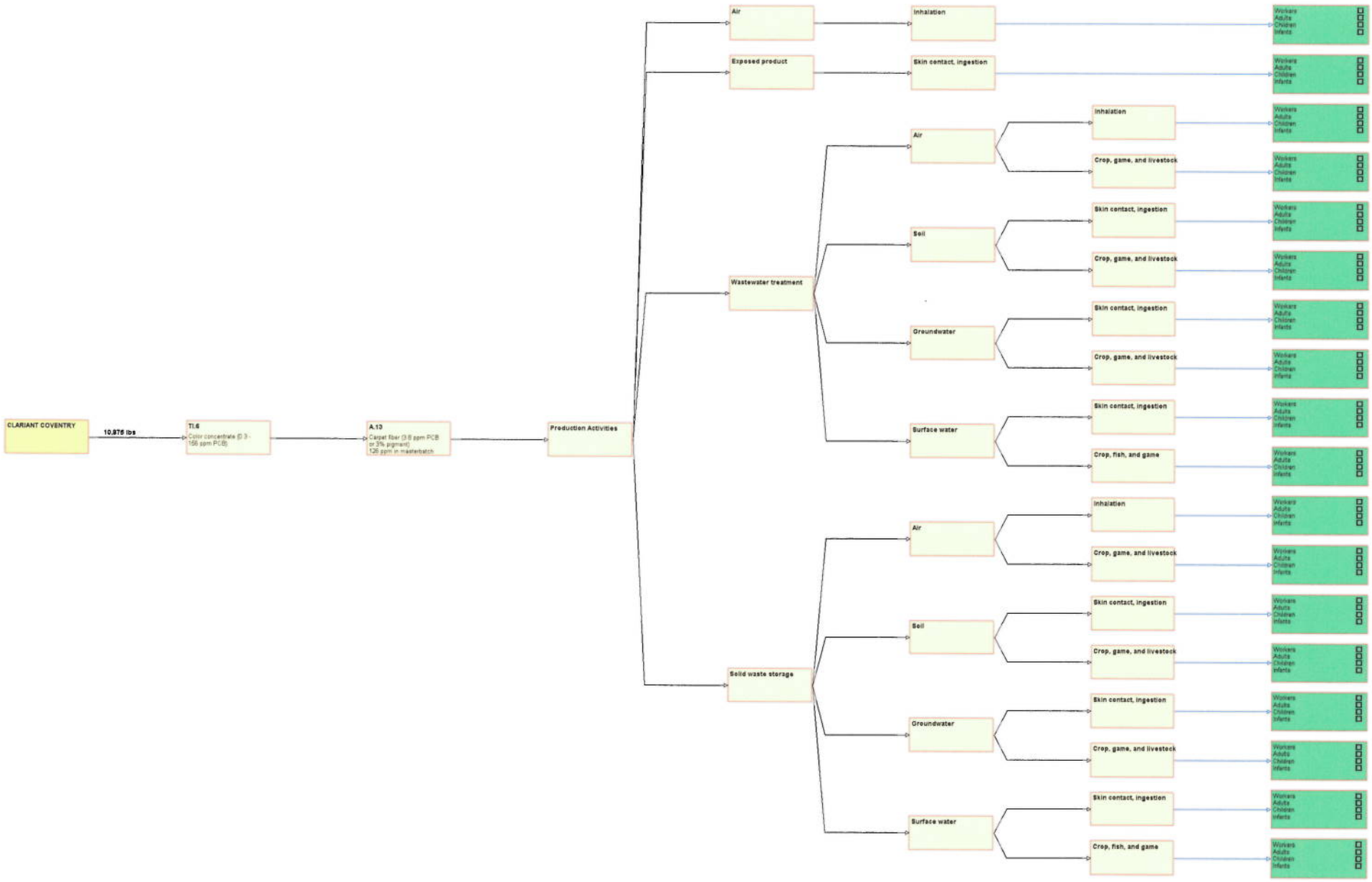
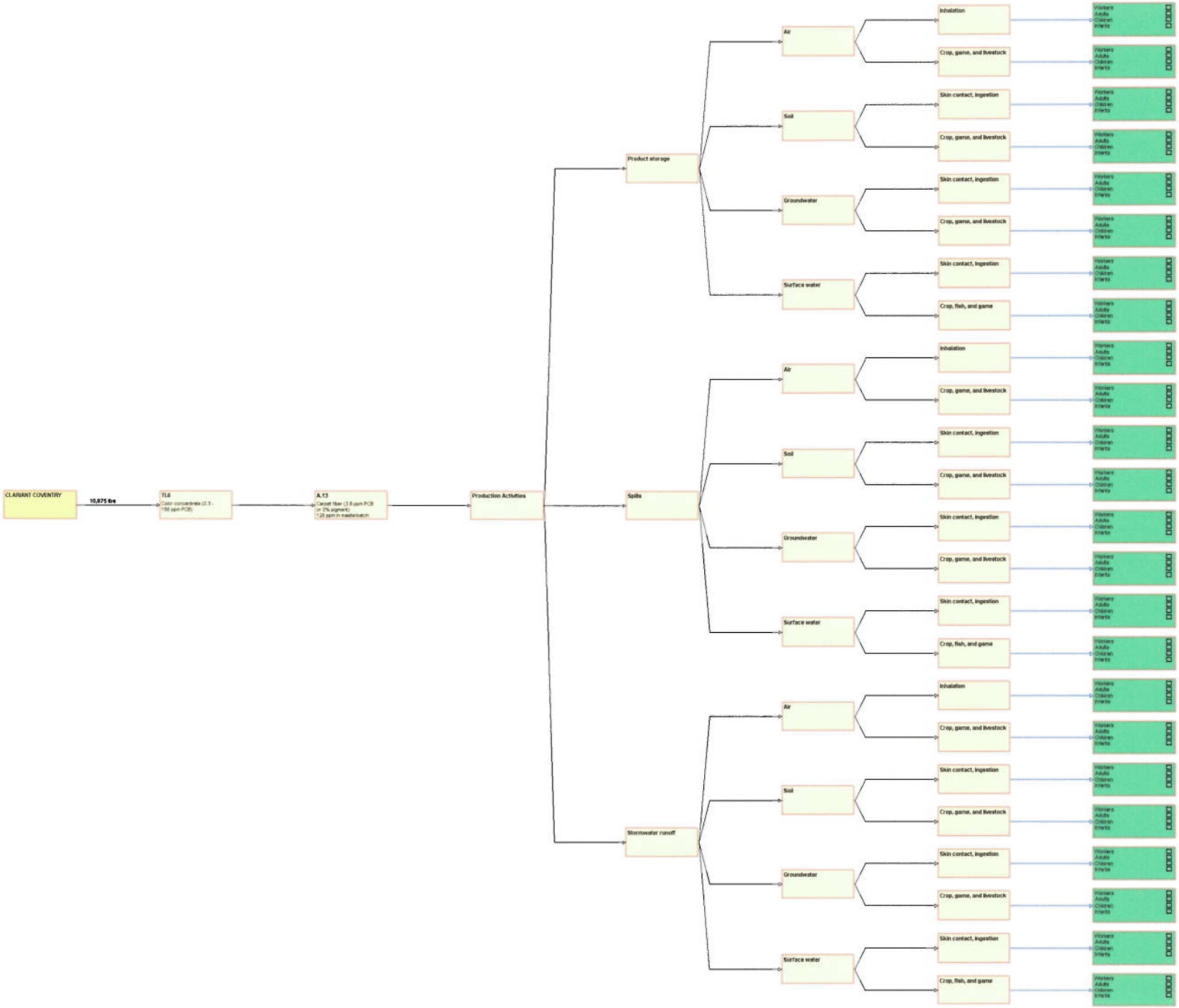

CLARIANT COVENTRY
Total shipped after returns: 42,430 lbs
110 lbs
TI.16
Acrylic Sheet (Max 0.104 ppm)
P.53
Tubs (Max 0.0162 ppm PCB)
P.54
Tubs (Max 0.00103 ppm PCB)
P.55
Tubs (Max 0.00324 ppm PCB)
P.56
Tubs (Max 0.00929 ppm PCB)
P.57
Tubs (Max 0.00162 ppm PCB)
P.22
Tubs (Max 0.00103 ppm PCB)
P.49
Tubs (Max 0.00184 ppm PCB)

Figure 3. Conceptual Exposure Model for Tier II user A.13 (Category A – Fiber and Carpet Yarn) Exposed to Pigment 144/214


CLARIANT COVENTRY
10,876 lbs
TI.6
Color concentrate (0.3 - 166 ppm PCB)
A.13
Carpet fiber (3.6 ppm PCB or 3% pigment)
126 ppm in masterbatch
Production Activities
Air
Exposed product
Wastewater treatment
Solid waste storage
Inhalation
Skin contact, ingestion
Air
Soil
Groundwater
Surface water
Crop, game, and livestock
Crop, fish, and game
Workers
Adults
Children
Infants


CLARIANT COVENTRY
10,875 lbs
TL6
Color concentrate (2.3 - 150 ppm PCB)
A.13
Carpet fiber (3.8 ppm PCB or 2% pigment)
125 ppm in masterbatch
Production Activities
Product storage
Spills
Stormwater runoff
Air
Soil
Groundwater
Surface water
Inhalation
Crop, game, and livestock
Skin contact, ingestion
Crop, fish, and game
Workers
Adults
Children
Infants

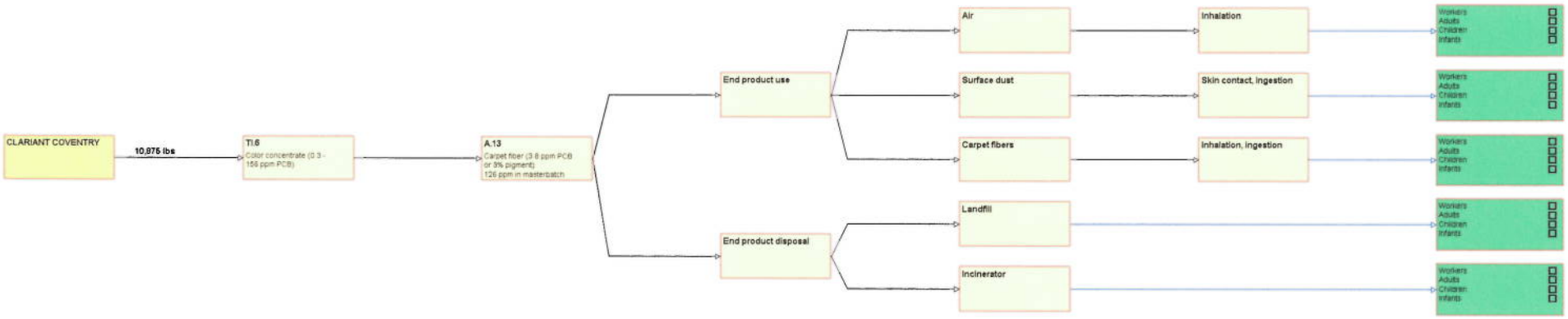
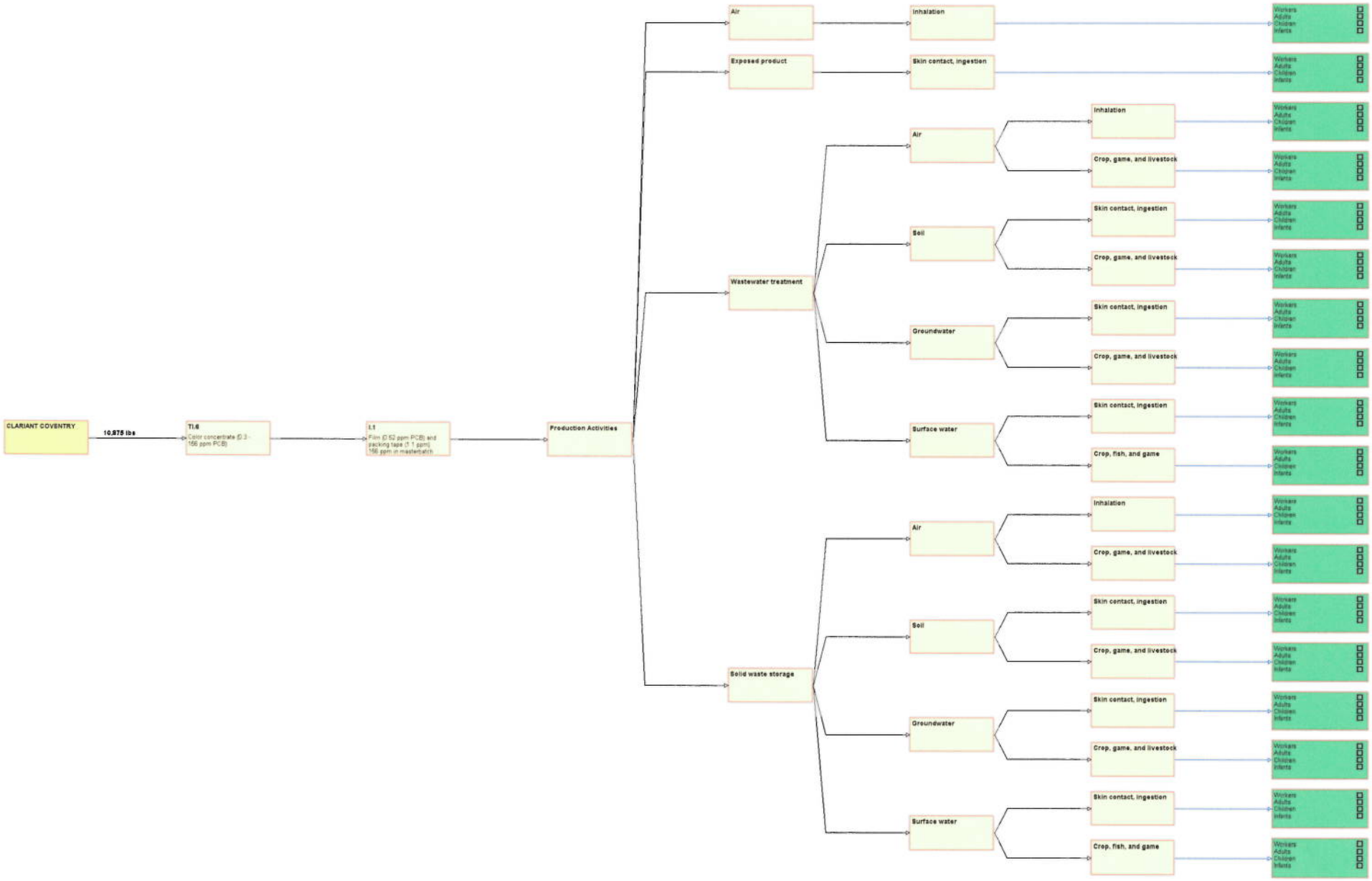
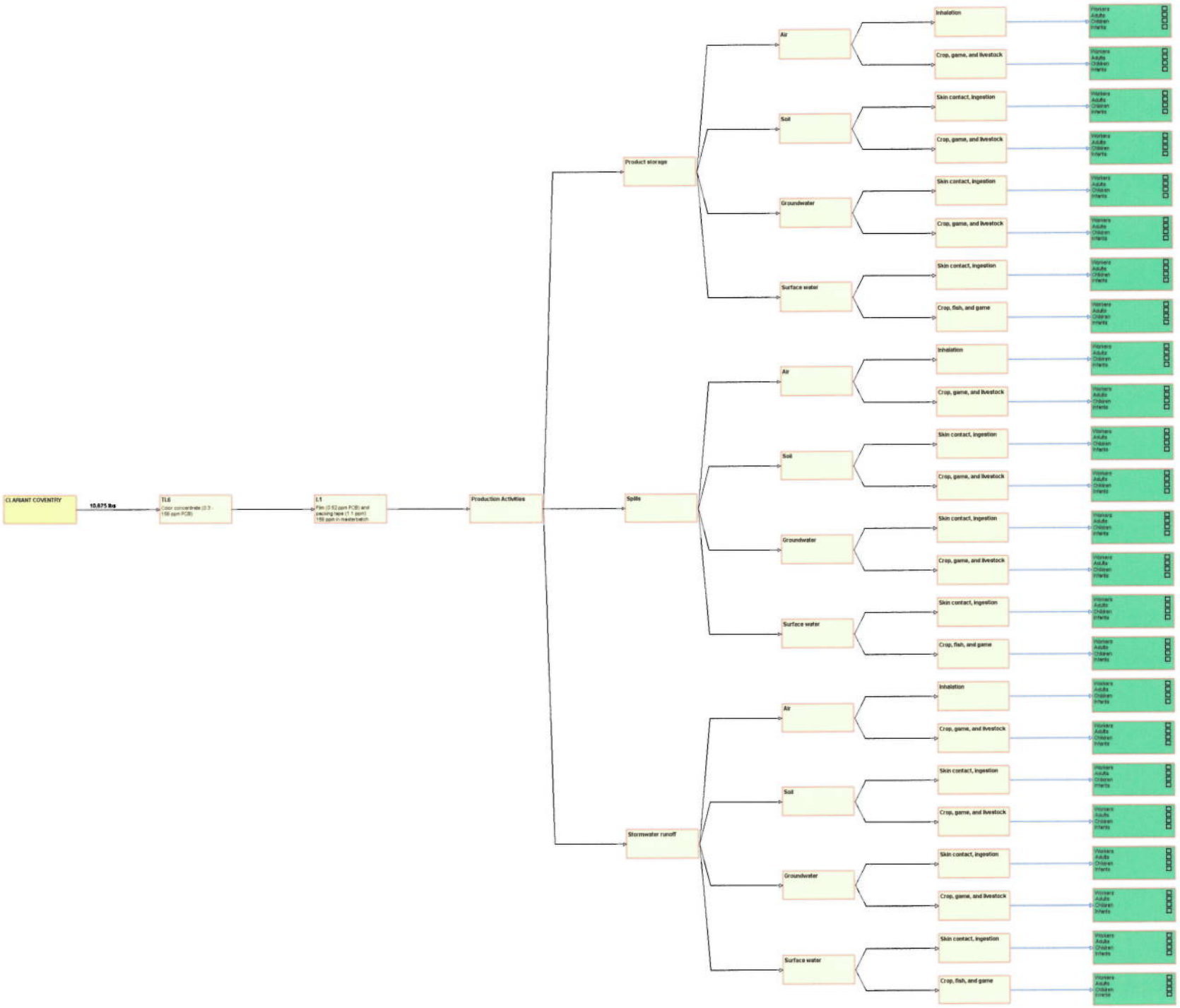
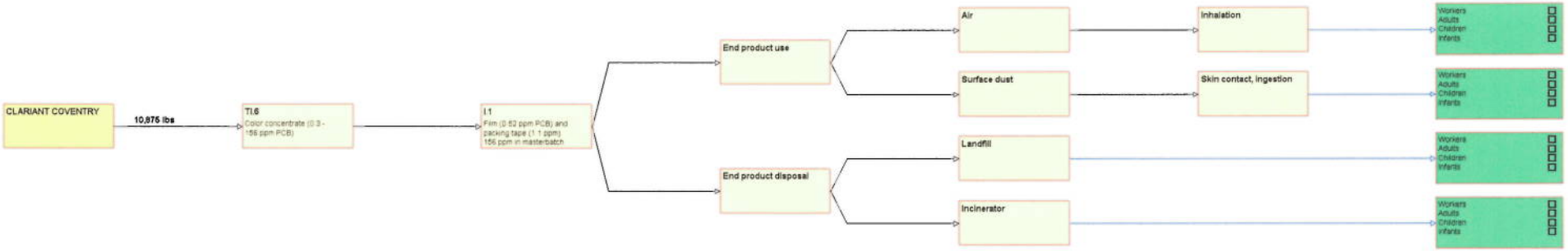

CLARIANT COVENTRY
10,875 lbs
TI.6
Color concentrate (0.3 - 156 ppm PCB)
A.13
Carpet fiber (3.8 ppm PCB or 3% pigment)
126 ppm in masterbatch
End product use
End product disposal
Air
Surface dust
Carpet fibers
Landfill
Incinerator
Inhalation
Skin contact, ingestion
Inhalation, ingestion
Workers
Adults
Children
Infants

Figure 4. Conceptual Exposure Model for Tier II user I.1 (Category I – Packing Film, Tape, and Food Trays) Exposed to Pigment 144/214


CLARIANT COVENTRY
10,875 lbs
TI.6
Color concentrate (D 3 - 156 ppm PCB)
I.1
Film (D 52 ppm PCB) and packing tape (T 1 ppm) 156 ppm in masterbatch
Production Activities
Air
Exposed product
Wastewater treatment
Solid waste storage
Inhalation
Skin contact, ingestion
Air
Soil
Groundwater
Surface water
Crop, game, and livestock
Crop, fish, and game
Workers
Adults
Children
Infants


CLARIANT COVENTRY
10,875 lbs
TL6
Color concentrate (0.3 - 158 ppm PCB)
L1
Film (0.52 ppm PCB) and packing tape (1.1 ppm) 158 ppm in masterbatch
Production Activities
Product storage
Spills
Stormwater runoff
Air
Soil
Groundwater
Surface water
Inhalation
Crop, game, and livestock
Skin contact, ingestion
Crop, fish, and game
Workers
Adults
Children
Infants


CLARIANT COVENTRY
10,875 lbs
TI.6
Color concentrate (0.3 - 156 ppm PCB)
I.1
Film (0.52 ppm PCB) and packing tape (1.1 ppm) 156 ppm in masterbatch
End product use
End product disposal
Air
Surface dust
Landfill
Incinerator
Inhalation
Skin contact, ingestion
Workers
Adults
Children
Infants
Workers
Adults
Children
Infants
Workers
Adults
Children
Infants
Workers
Adults
Children
Infants

Clariant

Clariant Corporation

4000 Monroe Road
Charlotte, NC 28205
704.331.7000

Erin Russell
Writer's Direct Dial No.: 704/331-7059
Fax No.: 704/331-7131
E-Mail: erin.russell@clariant.com

September 2, 2004

VIA FEDERAL EXPRESS
Ms. Rose Toscano
Document Control Officer
EPA New England, Region 1
1 Congress Street, Suite 1100
Boston MA 02114-2023

Re: Clariant Corporation Supplemental Information for Ms. Kimberly Tisa

Dear Ms. Toscano:

Please find one confidential copy and one company sanitized copy of the following document:

1. Report authored by BBL prepared for Clariant Corporation.

The enclosed document has two volumes. Only Volume One contains Confidential Business Information; and therefore only Volume One has both a sanitized and confidential copy. Volume Two (named Appendix I) does not contain CBI, and therefore no sanitized copy is necessary.

Please feel free to contact me if any further information is needed regarding this submittal.

Per Erin Russell via phone the conceptual Exposure Model is CBI.
The exposure routes appendix 1 Volume 1 & Volume are NOT CBI.
[signature] 9/24/04

Sincerely,

Erin Russell

Erin Russell

c: Mike Teague
John Paul
Kimberly Tisa
Thomas Olivier

Clariant Corporation

4000 Monroe Road
Charlotte, NC 28205
704.331.7000

Via FedEx

September 2, 2004

Kimberly Tisa, PCB Coordinator (CPT)
USEPA
1 Congress Street, Suite 1100
Boston, MA 02114-2023

RE: Red Pigment Project
Conceptual Exposure Model

Dear Ms. Tisa:

Please find attached for your review and comment the document entitled "Conceptual Exposure Model and Preliminary Assessment for End Users of Pigment Red 144 and 214". The document comprises two volumes, the larger of which is an appendix containing graphical representations, or dendograms, of the exposure pathways.

Clariant will await EPA's approval of this document before taking the next step of performing a detailed assessment of the exposure pathways identified as significant. In the meantime, Clariant will continue gathering relevant data concerning the most likely exposure pathways to be evaluated.

If you have any questions or need additional information, please feel free to contact me at 704-331-7104.

Sincerely,

CLARIANT CORPORATION

MA Teague

Michael A. Teague, Ph.D.
Vice President / ESHA

Enclosure

cc: Erin Russell, Esq.
John Schell, Ph.D.
John Paul
Robert Freet, Ph.D.

Mike.Teague@clariant.com
09/30/2004 11:16 AM

To Kimberly Tisa/R1/USEPA/US@EPA
cc Erin.Russell@clariant.com
bcc
Subject Re: Questions re: CEM

Kim:

Two additional points from our contractor this morning:

1. The first page in each tab of the two-volume set is a complete dendogram for a given customer. Because the print on this first page was so small, BBL took each dendogram and split it into two or more "panels" or pages and included them after the first page. This means that all the pages following the first page in each tab are actually an enlarged view of the first page spread over multiple pages. BBL would have printed out the dendograms on larger format paper, but the EPA software only allows for standard size output.

2. There may be a CBI issue with the electronic files. The files would need to be renamed and coded because some of the file names clearly resemble customer names. Furthermore, BBL tells me there are 540 separate files that would need to be viewed, which will possibly hinder rather than assist your review of the information. Given the first point above, Versar may feel that the existing printed volumes are the best format for review.

Again, I would echo Erin's comment that the main thrust of this submittal is to request your comments, and hopefully your concurrence with, the concepts in the text CEM document. The dendogram figures will be more important as we further define which end uses require that level of evaluation.

Thanks.

Mike

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Erin Russell
09/30/2004 10:31 AM

To: tisa.kimberly@epamail.epa.gov
cc: Mike Teague/CLARIANT@CLARIANT
Subject: Questions re: CEM

Kim - I've looked into the question you posed about the difference between what I described in the cover letter transmitting the CEM to you and what you received. I found out that after I wrote the cover letter, describing the CEM as Volume I and all the attachment dendograms as Volume II, the staff at BBL found that they needed 2 notebooks to contain what I referred to as Volume II. They consequently renamed Volume II in as Volumes I and II, which did not match my letter. Therefore what you have received is complete

1. the CEM - which has both a CBI and Sanitized version.
2. two notebooks named Volume I and II, which have no sanitized versions as there is no CBI in these

Also, I understand that the dendograms use a very small font. These were generated using EPA software which creates the dendograms in this manner. We could provide an electronic version of these if you think it would be helpful in working with these documents.

One idea to think about is that at this point we believe the main focus is on EPA's acceptance of the Conceptual Exposure Model and the next steps outlined by BBL. I think that the actual use and evaluation of the dendograms would become more involved during the next phase of the risk assessment. As currently used, the denogram boxes follow a pattern which is consistent by color. It will probably be helpful for Versar to know that the green boxes will contain the same text. Therefore, the legible boxes will read in the same manner as those with the minute font. However, we are able to provide the electronic dendograms to aid in your current evaluation. It appear these will need to be sent in CD format.

Based on our conversation yesterday, I'll wait to hear from you on the name, address and phone number for delivery for sending this to Versar. In the meanwhile we'll ask BBL to start preparation of Versar's copy.

Erin Russell

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