



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# **Product Testing Standard Operating Procedure PTP001, Version 2.1**

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## **Product Collection and Sample Processing**

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## Purpose of this document

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The Washington State Department of Ecology develops Standard Operating Procedures (SOPs) to document agency practices related to sampling, field and laboratory analysis, and other aspects of the agency's technical operations.

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SIGNATURES ARE AVAILABLE UPON REQUEST

*The Washington State Department of Ecology's (Ecology's) Standard Operating Procedures (SOPs) are adapted from published methods, or developed by in-house technical and administrative experts. Their primary purpose is for internal Ecology use, although sampling and administrative SOPs may have a wider utility. Our SOPs do not supplant official published methods. Distribution of these SOPs does not constitute an endorsement of a particular procedure or method.*

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*Although Ecology follows the SOP in most instances, there may be instances in which Ecology uses an alternative methodology, procedure, or process.*

## SOP Revision History

Revision Date	Revision History	Summary of changes	Sections	Reviser(s)
9/1/2016	PTP001 1.0	Complete re-edit of text, revised footer format	New	Wiseman, Inch, Sekerak, Van Bergen
11/17/2016	PTP001 1.0	New	All	Iwenofu
7/20/2018	PTP001 2.0	<ol style="list-style-type: none"> <li>1. Removed HWTR Approval page.</li> <li>2. Condensed sections of text and Appendix</li> <li>3. (elements of Chemical Hygiene Plan) by changing format.</li> <li>4. Updated with location changes, online purchasing and site visits.</li> <li>5. Revise to summarize Low-level analysis procedures.</li> <li>6. Made minor edits.</li> </ol>	All	Wiseman, Trumbull, Sekerak, Van Bergen, Gries
12/2020	PTP001 2.1	<ol style="list-style-type: none"> <li>1. Program Change.</li> <li>2. Made minor edits.</li> <li>3. Added a 10% nitric acid rinse to tool clean protocol.</li> </ol>	All	Arati Kaza, Ken Nelson, Kari Trumbull, Prajwol Tuladhar, Chrissy Wiseman
5//2021	PTP001 2.1	Replaced Appendices A-H with new Appendices A-B.		Jim Medlen, Chrissy Wiseman

## **1.0 Purpose and Scope**

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- 1.1 This document is the Environmental Assessment Program (EAP) Product Testing (PT) Standard Operating Procedure (SOP) for Sample Collection and Processing.
- 1.2 The PT Program regularly conducts studies on products to assess compliance with current regulations, investigate priority and emerging chemicals of concern, and provide recommendations in the development of new legislation or rules. This SOP details techniques developed to ensure that the collection and processing of samples from consumer products is consistent, repeatable, and well-documented. The SOP is also intended to be used in conjunction with study-specific Quality Assurance Project Plans (QAPPs).
- 1.3 This SOP includes methods for training, product purchasing, tool cleaning, product deconstruction, sample processing, and safety.

## **2.0 Applicability**

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- 2.1 This SOP standardizes sample collection and sample processing of consumer goods, raw materials, and other types of product samples detailed in specific study QAPPs.
- 2.2 All staff collecting samples and processing samples will follow the requirements of this SOP, except as noted in Section 2.4.
- 2.3 Substantive deviations from this SOP must be incorporated into an updated version of the SOP that is recertified prior to beginning work. Minor deviations from the SOP, if anticipated, must be described in the approved study-specific QAPP. Minor deviations that are unexpected must be detailed in the final project report.

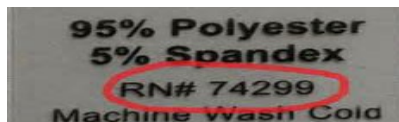
## **3.0 Definitions**

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- 3.1 *Chain of Custody (COC)* the unbroken trail of accountability that ensures the physical security of samples, data, and records. The Chain of Custody Room is a secure access location where Ecology's sample containers are dropped off, samples are refrigerated or frozen in order to maintain holding temperatures, and samples are picked up by the Manchester Environmental Laboratory courier.
- 3.2 *Component* an individual piece or part of a product containing different colors, functions, and/or material (i.e., a sweater may be comprised of several components such as, the woven fabric, trim fabric and buttons).
- 3.3 *Contracts and Purchasing Manager* the person who grants permission for the use of the agencies Emergency credit card. Used in Product testing for online purchases.
- 3.4 *Cryomilling* the process of reducing a sample to very small particle sizes by lowering the product to cryogenic temperatures and mechanically milling it.
- 3.5 *Deconstruction* the physical separation of a product into individual components. For example, a tube of lip-gloss can be separated into the product (lip-gloss), the container used to hold and apply the lip-gloss (the external plastic tube), and any packaging material it was encased in when purchased.
- 3.6 *EAP* the Washington State Department of Ecology's Environmental Assessment Program.

- 3.7 *EAP Purchasing Coordinator (EAP PC)* the Environmental Assessment Program's designated purchasing coordinator places purchase orders for "State contracted" supplies and products. (Currently administered by the EAP receptionist).
- 3.8 *Electronic Product and Sample Inventory/Disposal Log* tracks the location of all Product Testing products and samples from purchase to recycling/donating/disposal.
- 3.9 *Enforcement Sample Inventory Log* (kept on shelf in PT Prep room) inventory list of enforcement products and samples kept in the enforcement cabinet located in the PT cage.
- 3.10 *Enforcement Officer* the person who tracks compliance and enforcement with Ecology's WA state product laws.
- 3.11 *Field Return Checklist* verifies that end of the field day procedures have been completed.
- 3.12 *Financial Services Purchasing Officer (PO)* Washington State Department of Ecology's designated purchasing officer.
- 3.13 *Fourier transform infrared spectroscopy (FTIR)* a technique which is used to obtain an infrared spectrum of absorption or emission of a solid, liquid or gas. An FTIR spectrometer simultaneously collects high spectral resolution data over a wide spectral range.
- 3.14 *Good Laboratory Practice (GLP)* refers to a laboratory system where work performed is to ensure uniformity, consistency, reliability, reproducibility, quality, and integrity.
- 3.15 *HWTR* Ecology's Hazardous Waste and Toxic Reduction Program.
- 3.16 *Low-Level* considered to be <1 part per million (ppm) or otherwise specified in the study-specific Quality Assurance Project Plan.
- 3.17 *Off-site Product Collection* samples collected from a facility or another state donated location.
- 3.18 *Outgoing Sample Checklist* verifies all COC and sample shipment procedures are met before for sending out samples.
- 3.19 *Packaging* refers to a container surrounding a product that provides a means of marketing, protecting, or handling a product. This includes a unit package (packaging around one product), an intermediate package, and a shipping container. It also includes unsealed receptacles such as carrying cases, crates, cups, pails, rigid foil and other trays, wrappers and wrapping films, bags, and tubs.
- 3.20 *Product Preparation Room (PT Prep Room)* (OL-21) designated uses: Secure sample storage, tool cleaning, sample deconstruction, X Ray Fluorescence (XRF) and FTIR sample prescreening, sample preparation and documentation.
- 3.21 *Product Testing Cage* a secured storage site in the Washington State Department of Ecology's Head Quarters building where products and samples remain under Chain of Custody.
- 3.22 *Project Manager (PM)* the subject matter expert for all study-specific activities described in a Quality Assurance Project Plan. The PM is to be point of contact for questions concerning study-specific objectives, specifications, deliverables, timelines, and tasks.

- 3.23 *Quality Assurance Project Plan (QAPP)* a document that describes the objectives of a study and the processes and activities necessary to develop data that will support those objectives.
- 3.24 *RN number* a Registered Identification Number issued by the Federal Trades Commission to U.S. businesses that manufacture, import, distribute, or sell products covered by the Textile, Wool, and Fur Acts. Businesses can use this number on product labels in lieu of the company.



- 3.25 *Room Safety Coordinator* the Product Testing employee responsible for the safety aspects of the room including equipment maintenance and safe equipment processing procedures. The room safety coordinator's role is currently managed by the sample prep lead.
- 3.26 *Sample Prep Lead/s (SPL/s)* consults with the PM's to coordinating schedules and activities conducted in the PT Prep Room.
- 3.27 *Sample Preparation Log* used to record tools used during samples deconstruction and or preparation of Low-level samples.
- 3.28 *Temporary Project Support Staff* includes E techs and other EAP/Ecology staff trained specifically to assist in data entry, purchasing, organizing incoming products, deconstructing products, processing samples, and disposing of obsolete samples under the direction of project manager/preparation lead.
- 3.29 *Toxics Study Unit (TSU)* a unit in the Environmental Assessment Program
- 3.30 *UPC the Universal Product Code*, an 8, 12, 13 or 14 digit code found at the bottom of a scan code on product packaging. The UPC includes all numbers shown with the bar code (including the first and last).



- 3.31 *X-ray fluorescence (XRF)* a non-destructive analytical technique used to determine the elemental composition of materials. XRF analyzers determine the chemistry of a sample by measuring the fluorescent (or secondary) X-ray emitted from a sample when it is excited by a primary X-ray source.

#### **4.0 Personnel Qualifications/Responsibilities**

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- 4.1 *All staff performing any level of PT prep work must:*
- 4.1.1 Complete the PT training/orientation provided by the SPL and/or the PM.
- 4.1.2 Complete the Training Checklist or "Drop-in" Training Checklist version.
- 4.1.3 Read this SOP (PTP001) and have access to all needed references.

- 4.1.4 Read the study specific QAPP prior to starting working on that study.
- 4.1.5 Follow Good Lab Practice (GLP)
- 4.1.6 Wear closed-toed shoes when handling and preparing samples.
- 4.1.7 Wear all appropriate personal protective equipment as appropriate.
- 4.1.8 Read all the pertinent PT room SDS.
- 4.1.9 Store all food and beverages in the designated office space.
- 4.1.10 Store all other personal gear in the designated office area.
- 4.1.11 Observe signs with study-specific room restrictions.
- 4.2 *PM and/or SPL duties are to:*
- 4.2.1 Provide training/orientation for all new PT Prep Staff and collect completed and signed training checklists.
- 4.2.2 Ensure the PM or a lead person is available for assistance throughout the duration of sample collection and processing.
- 4.2.3 Complete a MEL Pre-sample Notification Form upon QAPP approval (see Appendix A).
- 4.2.4 Order the correct type and quantity of sample containers using MEL Sample Container Request Form (Appendix A) unless containers are provided by a contract laboratory.
- 4.2.5 Schedule reservations for the Product Sample Prep Room (OL-21) on the Product Sample Preparation Room calendar accessed through the PT Share Point Site.
- 4.2.6 Assume responsibility of handling and diluting solvents and concentrated acids, as well as properly labeling and storing reagents.
- 4.2.7 Complete the necessary training forms for operating the X-ray fluorescence (XRF) and Fourier transform infrared (FTIR) prescreening instrumentation and will conduct the XRF and FTIR sample prescreening.
- 4.2.8 Put up signs at the entry to the Product Sample Preparation Room for specific studies restrictions during sample preparation as defined in the study QAPP.
- 4.2.9 Create and maintain Chain of Custody (COC) form(s).
- 4.2.10 Prepare, send, and track samples being transported to analytical laboratories, maintained under COC, as necessary.
- 4.3 *Project Manager (PM) responsibilities:*
- 4.3.1 Write the study-specific QAPP as the subject matter expert for all activities conducted under that study plan.
- 4.3.2 Conduct an initial study meeting to: create a sample collection and processing plan, designate specific tasks, and review study specific requirements/restrictions.
- 4.3.3 Conduct study-specific training of PT Prep Staff.
- 4.3.4 Track and report the study's purchase expenditures and laboratory analysis cost.
- 4.3.5 Provide for assistance and answer questions throughout the duration of the study sample collection and processing.
- 4.3.6 Verify that the products and/or components selected for lab analysis have been photographed before processed.
- 4.3.7 Provide the Contracts and Purchasing Manager with purchasing plans prior to purchase event.



- 4.3.8 The secondary PT Credit Card Holder responsible for the online accounting associated with the Emergency Credit Card/s
- 4.4 *Responsibilities of Sample Preparation Lead/s (SPL/s):*
- 4.4.1 Meet with PM's prior to study to provide research assistance.
- 4.4.2 Order study-specific supplies
- 4.4.3 Conduct general training of all new PT Prep Staff
- 4.4.4 Provide hands-on training with study specific details.
- 4.4.5 Ensure PT Prep Staff are following GLP and are abiding by the study-specific requirements.
- 4.4.6 Ensure the deionized water (DIW) system, hood, computers, cameras, XRF, and FTIR instrumentation are maintained and operating appropriately.
- 4.4.7 Ensure that the general processing supplies are kept in stock.
- 4.4.8 Coordinates activities conducted in the PT Prep Room.
- 4.4.9 Serve as PT Prep Room Coordinator (OL-21).
- 4.4.10 Ensure that all store receipts, Ecology generated purchase order numbers, online purchase orders/receipts, are appropriately acquired and cataloged in the PT database, F: drive, purchasing folders, and/or logbooks.
- 4.4.11 The Primary PT Credit Card Holder responsible for the online accounting associated with the Emergency Credit Card/s.
- 4.4.12 Update Electronic Product/Sample Inventory log.
- 4.5 *Training for New PT Prep Staff includes:*
- 4.5.1 A Product Testing Preparation Staff Training Checklist (Appendix A) will be provided for all new PT Prep Staff, which will be signed upon completion by the trainee, the trainer either the SPL or the PM and the TSU Supervisor. The SPL or PM will distribute completed form to trainee's management and it will be kept in the employee's personnel file. A copy of the completed PT training checklists will be kept in PT Prep Staff Training folder in the PT Prep Room.
- 4.5.2 A modified version of the training form can be utilized for staff that perform limited duties for limited duration of time. It is designed to allow quick on-boarding of any staff member. This "Product Testing Preparation Temporary Project Support Staff Training Checklist" (Appendix A) covers the health and safety aspects of the PT Prep Room as well as assigned study specific tasks. This checklist will be signed upon completion by the trainee, the trainer either the Prep Lead or the PM. The signed checklist will be kept in a folder in the PT Prep Room.
- 4.5.3 Training will be conducted by the SPL and / or PM, and will include the location of the following items within the PT Prep Room:
- DIW System (OL-21)
  - Equipment cabinets.
  - First aid kit and eye wash bottles.
  - Fume Hood (OL-21)
  - Keys for the cabinets in the Product Sample Preparation Room and the Product Testing Cage.
  - Personal Protective Equipment (PPE) and discussion of when to use PPE.

- Tools used for physical product deconstruction and sample processing.
- Training will include familiarization with the location of the following rooms:
- COC Room (OL-15) (Limited access to key personnel)
- Dangerous Waste Storage Room (OL-12) (Limited access to key personnel)
- Evacuation route and emergency meeting location
- Hazardous Material Storage (OL-14) (Limited access to key personnel)
- Product Testing Cage (OS-23) (Limited access to key personnel)
- Laundry Room (2S-15)
- Mail Room (OL-04)
- Product Sample Preparation Room (OL-21) (Limited access to key personnel)
- Shipping and Receiving (OL-05)

4.5.4 The following documents will be reviewed:

- COC forms, explanation and instructions
- Electronic Product and Sample Inventory/Disposal Log ( [PT F drive](#))
- Field Return Checklist (Appendix A)
- Outgoing Sample Checklist (Appendix A)
- Pre-sampling Notification Form (Appendix A)
- Product Documentation Log (Appendix A) (kept on shelf in PT Prep Room)
- PT Enforcement Sample Log (kept on shelf in PT Prep Room)
- Sample Preparation Log (bound notebook kept on shelf in PT Prep Room)
- PT Sample Collection and Processing SOP (PTP001)
- Relevant Sections of the Chemical Hygiene Plan (Appendix A)
- Sample Container Request Form
- Safety Data Sheets (SDSs)
- Study-specific QAPP

## 5.0 **Equipment, Reagents, and Supplies**

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### 5.1 *Equipment*

(Note: tools followed by \* that come in contact with samples should be made of stainless steel, unless an alternative material is specified in the study QAPP.)

- Camera(s) (agency camera only)
- Camera Lights
- Clamps
- Coolers
- DI Water System (PURELAB Option-R 7/15)
- Drill and drill bits\*
- FTIR
- Fume hood (OL-21)
- Hammer
- Needle nose \* and regular pliers\*
- Photo backdrops cloths
- Saw\*
- Scissors (various sizes and types)\*

- Seam rippers\*
- Stainless steel bowls for collecting used solvents
- Vacuum with HEPA filter
- Wash bottles for soap solution
- Wire cutters\*
- XRF and XRF Stand

## 5.2

### *Supplies:*

- Aluminum foil
- Blue Ice –reusable ice packs
- Blue Tape
- Chain of Custody tags
- Dust masks
- Enforcement sample documentation/disposal log
- Glass funnel
- Glass transfer pipettes
- Hanging label/tags
- Lab coat
- Lab spatula\*
- Large and small Kim Wipes
- Markers
- Nitrile gloves
- Cut resistant gloves
- Organizational totes
- Paper clips
- Paper towels
- Pliers\*
- Pre-cleaned sample containers (USEPA specifications)
- Product documentation log
- Razor blades/carpet knives/scalpel\*
- Rubber bands
- Safety glasses/goggles/face shield
- Safety pins
- Sample labels
- Twist ties
- Zip-top plastic bags (various sizes)

## 5.3

### *Reagents:*

- 10% Nitric acid. Dilute trace metals grade nitric acid to 10% with DI water; slowly add one part acid to nine parts DI water.
- Approximately 24% ethanol. Dilute reagent grade ethanol to ~24% with DI water.

- Acceptable reagents are posted on the Chemistry Inventory list outside of the Product Sample Preparation Room (OL-21). The Chemistry Inventory list includes Acetone, Ethyl alcohol, Hexane, Isopropyl alcohol, Methyl alcohol, Nitric Acid. This list will be updated accordingly.
- Acetone, Certified ACS HPLC Grade  $\geq 99.5\%$
- Concentrated nitric acid, trace metals grade.
- Deionized (DI) water using the PURELAB Option-R 7/15 system.
- Ethanol, ACS grade,  $\geq 99.5\%$  (200 proof), food-grade ordered through liquor board or equivalent.
- Hexane, Certified ACS HPLC Grade  $\geq 99.5\%$ .
- Laboratory detergent: Liquinox or equivalent biodegradable, phosphate-free, interfering-residue free, concentrated soap. Dilute to 1% with DI water for working solution.
- Methanol, Certified ACS Reagent Grade  $\geq 99.8\%$ .
- The following reagents are only to be used in the PT Prep Room and Cleaning Room hoods: Concentrated nitric acid, 10% nitric acid, hexane, and methanol.
- Acetone as a general rule should be used in the PT hood. Acetone has an exemption as a small amount may be utilized outside the hood for occasional cleaning. The acetone will be kept in a sealed 2 Oz glass sample jar and used with a pipette. The amount allotted by the agency's Safety officer for acetone use outside the hood, in the PT Prep Room is 500 ml.

#### 5.4

##### *Reagent Handling*

- The original acetone bottle and the 2 Oz sample jar of acetone will be stored in Hazardous Material Storage Room (OL-14).
- PT Reagents are stored in the Hazardous Material Storage Room (OL-14) in the appropriate organic solvent or acid cabinet.
- Each original reagent container must be labeled with a hazard label that includes the PT contact information, and date opened.
- Reagent squirt bottles must be clearly labeled with the chemical name, concentration, hazard label, and program name. Reagent squirt bottles must be kept in secondary containment while in use and when stored.
- Safety Data Sheets for all chemicals listed here are readily available in the PT Prep Room adjacent to the fume hood.

## 6.0

### **Procedures for Sample Collection**

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#### 6.1

##### *Planning for Product and Sample Collection:*

##### 6.1.1

An initial project meeting may be held by the Study PM, SPL's and/or temporary project support staff to cover the scope, type of products, timing, issues critical to the project (product handling, decontamination procedures, sample holding times or temperatures, etc.).

##### 6.1.2

All PT Prep Staff must read the study-specific QAPP. The PM and or the SPL will review the scope and intent of the study, the types of products to be purchased and as well as the analytes of interest with the PT Prep staff.

- 6.1.3 Preliminary product research may need to be conducted to determine product location and availability.
- 6.1.4 As needed the PM and/or SPL may compile a study-specific information collection sheet with the targeted analyte synonyms or precursors found in the ingredients label or other target labels. Include the specific number of products or amount needed (volume or mass of product/sample to meet analytical analysis volume requirements), and the names of specific manufacturers or targeted labels.
- 6.1.5 Sample collection may occur in person at a retail stores, at specific sites or through online purchases.
- Note: to request the use of the agency credit card (in store purchases) notify the Agency's Financial Services Purchasing Officer (PO) or the (emergency card) for online transactions, provide a minimum of two-week prior notification to the Agency's Contracts and Purchasing Manager.
- 6.2 *Vehicle:*
- 6.2.1 Vehicle reservation is made by contacting Building Services (ext. 7-4357 and press "2") or emailing Staff Services ([ecydlhqstaffserviceshelpdesk@ecy.wa.gov](mailto:ecydlhqstaffserviceshelpdesk@ecy.wa.gov)) prior to the purchase/collection event, and providing your:
- Destination
  - Estimated time of pick up and drop off
  - Name
  - Phone number
  - Vehicle type needed
- 6.3 *The Product Documentation Log:*
- 6.3.1 The Product Documentation Log will be used for product collection documentation and will be kept in the Product Testing Sample Preparation Room.
- 6.3.2 Fill out the Product Documentation Log upon arrival and at the end of every store purchase or sampling event site.
- 6.3.3 Record the following information at each site/retail location:
- Study QAPP name
  - PM name
  - Collectors/samplers name
  - Collection date
  - Store/location name and address
  - Brief purpose of product collection effort (optional)
  - Explanation of marketing, shelving, store, or location (photos)
  - Arrival time at the store
  - Number of products purchased or collected (ex. From state agency)
  - Location contact name/number (if any)
  - Miscellaneous/comments
  - Time/date of return to Ecology
- 6.4 *In-Store Purchase Instructions:*

- 6.4.1 Review with PM the type, number and budget for products that need be purchased. Determine and document if there are criteria that can help with sample selection. Follow any study-special handling requirements for these products.
- 6.4.2 Equipment required for in-store purchasing events:
- Agency camera
  - Agency credit card
  - Agency vehicle and Vehicle log (reference section 6.2)
  - Bag labels if necessary
  - Agency Credit Card
  - Bags (for separating products if required by study)
  - Hanging tags
  - Blue tape
  - Pencils
  - Product Documentation Log
  - Pens
  - Study-specific information collection sheet (if available)
  - Safety pins
  - Sample Purchasing Log (reference section 6.3)
  - Sharpie markers
- 6.4.3 Credit card for in-store purchasing events:
- Check out the credit card from the Purchasing Unit in Fiscal Office (after 8 am, return credit card by 3 pm or get permission on alternative times the day before).
  - Fill in the Credit Card Check-Out Log with:
    - Name and phone number of individual that will be using the credit card.
    - Name of at least one store you will be visiting
    - Name of the study.
    - Master Index Code (MIC) (verify with SPL or the PM).
  - When returning the credit card complete the Credit Card Log per transaction.
    - Type of products and analysis (example metals samples) the products are purchased for.
  - The purchasing limit is \$700 per transaction. If there is a possibility that a purchase/s at any individual store might exceed \$700, make arrangements with the Contracts Purchasing Manager in advance.
  - Marketing documentation for in-store purchasing events
  - Photographs of in-store marketing, such as store displays and product location on shelving, may be necessary to build a case for a specific products inclusion in a study (and/or for enforcement).
  - Store/site photographs may also be needed for other reasons on other projects. Details will be provided by the PM and/or will be described in the study QAPP.
  - Place all photos in the PT F: drive. See PT Data Entry and Database SOP PTP002 for photo upload instructions.
  - A study may require the collection of additional documentation such as SDS for products, store advertisements.

#### 6.4.4

##### Purchase Documentation For In-Store Purchases:

- Upon return to Ecology, save and log the itemized receipt from the purchase:
- Scan each receipt and email to the Product Prep Lead and the PM.
- Save the receipt scan within the appropriate study folder with the naming convention: “Store Name, Study Name Day Month Year” (e.g., JC Penny Seasonal Study Valentine’s 15Jan2015) for uploading into the purchase record in the PTDB. See PT Data Entry and Database PTP002.
- In accordance with the Agency Credit Card Rules of Use, the original paper receipt will be returned to *Financial Services Purchasing Officer (PO)*. Record the receipt’s tracking number and the amount spent at each store on the Credit Card Check-out Log. Return the card by 3 pm the day of use unless you have agreed on a different time.
- If the receipt is over \$125 per store, send a copy of the receipt to the EAP PC who will process it and email a PR# to the Sample Prep Lead and PM.
- The Sample Prep Lead will upload the PR# into the PTDB under the associated purchase.
- Scan advertising or additional documents associated with the purchase and name the file with the naming convention: “Store Name Study Name Day Month Year item” (e.g., JC Penny Seasonal Study Valentine’s 15Jan2015 Sales Flyer).
- A purchase record for each store or site is created in the PTDB by the PM or the SPL where all product digital records will be stored.

#### 6.5

##### *Off-site Product Collection:*

#### 6.5.1

##### Equipment required for Off-site Product Collection:

- Agency camera
- Agency vehicle and vehicle log
- Boxes or totes labeled with site name/s
- Clean tools in clean tool tote or clean zip top bag.
- Cooler/s with or without ice (study-specific)
- Dirty tool tote or zip top bag/s label dirty tools
- Disposable gloves
- Foil (study-specific)
- Garbage bags
- Hanging tags and safety pins for larger items- add site name and date.
- Kim Wipes large and small (for wiping off sample jars)
- Pens and pencils
- Sample bags
- Sample containers
- Sample labels
- Sample Purchasing Log
- Sharpie markers
- Scissors
- Blue tape

- 6.5.2 Off-site Product Collection Sampling Procedures:
- Site collection requires the PM and/or SPL to schedule collection of products or samples.
  - Organize and pack equipment, tools, and supplies required for product collection and transport.
  - Pick up an appropriate vehicle and Vehicle Log
  - Complete an entry in the Sample Purchase Log for every location where products are acquired. Follow the same procedures mentioned in sections 6.3.
  - Photograph the site or products if necessary – to be determined by the PM.
  - Return vehicle and Vehicle Log
  - Place and lock items in the cabinet with the associated study label.
  - Process returning supplies. (Dispose of sample event rubbish, place used tools in “Dirty Tool Tote” and restock sampling supplies if necessary).
- 6.6 *Return from Field Tasks:*
- 6.6.1 Label all shopping bag(s) with the date of purchase and ensure that the bag(s) are marked with the store name. If store name is missing from bag, label with name and purchase date.
- 6.6.2 Verify that bulky items have hanging tags attached that include the store name and purchase date.
- 6.6.3 Confirm that Product Documentation Log is completely filled in at the end of the day.
- 6.6.4 Return vehicle and vehicle log.
- 6.6.5 Place and lock items in the cabinet with the associated study label.
- 6.6.6 Scan each receipt and email a copy to the SPL and the PM for tracking.
- 6.6.7 Return credit card and original receipts to the Financial Services (PO).
- 6.7 *Optional - Complete the [Field Return Checklist](#) to verify that end of the field day procedures have been completed.*
- 6.8 *Online Purchasing for State Contracts:*
- 6.8.1 Submit all product/supply orders from State Contracts via email to the EAP PC and cc the TSU Unit Supervisor, PM and SPL. The purchase request will include the study QAPP name, product identification number, the number of products requested and cost.
- 6.8.2 For every in store purchase over \$125, the EAP PC completes a Purchase Request (PR) which generates a PR# which is forwarded to the PM and SPL. The PR# is recorded into the PTDB.
- 6.8.3 For projects that include state purchased products the EAP PC will populate the electronic “Purchase Sample Tracking Log.” This log is intended to track received products purchased from state contracts and will be populated with the following information:
- Date the online order was placed
  - Date the order is received by Ecology
  - List of the items purchased for that order
  - Name of the state contact, the product item number and the associated URL
  - PM Name



- Purchase Request numbers (PR#s)
  - Study QAPP
- 6.8.4 The Purchase Sample Tracking Log will be saved on the PT F: drive specific study folder.
- 6.8.5 The EAP PC will print or email a copy of each online order confirmation for the project file, which will be delivered to the PM.
- 6.8.6 The EAP PC will provide the PM and SPL with weekly updates on the status of the ordered products until they have all been received.
- 6.9 *State Contract Product Arrival and Check In At Ecology*
- 6.9.1 State contract products are delivered to Ecology Headquarters Shipping and Receiving department.
- 6.9.2 When products arrive, the Warehouse Operator will make copies of all packing slips and contact one of the following: the name on the package PM or the SPL and cc EAP PC or Lead Secretary. If purchaser of product is unavailable/out of office, the EAP PC/Lead Secretary may contact the TSU Supervisor, who can then contact the most appropriate person to pick-up the package.
- 6.9.3 Products will remain in the Shipping and Receiving Department's locked cage until received by PT staff.
- 6.9.4 All original packing slips must be checked in with the EAP PC who will scan and send digital copies (.pdf) to the PM and SPL, and save them under the TSU PT F :drive the study-specific Packing Slips/Receipts folder.
- 6.9.5 The digital image (.pdf file) of all Packing Slips/Receipts will be uploaded to the PTDB.
- 6.9.6 The EAP PC will send original Packing Slips/Receipts to the Financial Services Purchasing Officer PO.
- 6.9.7 Products delivered and delivery date will be recorded in the Purchase Sample Tracking Log.
- 6.9.8 The EAP PC will cross-reference the delivered products to verify the distribution source of online retailers. If products came from different sources than the original order, it is noted on the Purchase Sample Tracking Log.
- 6.9.9 All incoming products will be kept in locked cabinets in the PT Sample Prep Room or Product Testing Cage to maintain Chain of Custody (COC). Those locations will be labeled with the Study Name, PM and PM phone #. Ensure that any additional study-specific storage requirements are met.
- 6.9.10 If products are not received or on back order, the EAP PC will update PM.
- 6.9.11 Note: Limitations for all online purchases and purchase arrival may include product availability and shipping delays. Some orders may need to be cancelled if products are on back order and may not be received with the scheduled sampling window.
- 6.10 Online Purchasing with the Emergency Credit Card
- 6.10.1 The Emergency Credit Card is used when purchasing any products online that are NOT available on state contracts or found in local stores, subject to Contracts and Purchasing Manager's approval.

- 6.10.2 The Emergency Credit Card is assigned to a Primary User. If the primary user is not available the secondary card user must coordinate with Financial Services PO.
- 6.10.3 Staff intending to make purchases with the Emergency card must review the Purchasing Directive, [Procurement Training – Contracts and Credit Cards section](#), which is located on Ecology’s Financial Services Intranet site.
- 6.10.4 Each Credit card user must read and sign the Credit Cardholder Agreement form, return it as instructed on the form and provide copy to the Contracts and Purchasing Manager. PT Staff intending to make purchases with the Emergency Credit Card need to re-sign the Credit Card Holder Agreement every calendar year in January.
- 6.10.5 A minimum of one week notice is recommended for the Contracts and Purchasing Manager’s approval. Provide a summary of the study, include:
- Title/Name of study
  - Categories of products being purchased (e.g., auto parts)
  - Type of samples that will be analyzed (e.g., car brake pads)
  - Estimated amount allotted for the study-specific online purchases
  - Purchasing Schedule
  - Name of staff conducting the online purchases
  - Type of businesses the purchases will be made from (e.g., major retailers)
- 6.10.6 Email a request to the Contracts and Purchasing Manager a day or two before intended credit card use.
- 6.10.7 The Contracts and Purchasing Manager grants permission via email to the Fiscal Program Support Staff / Main Receptionist. This serves as a study specific reminder to the Contracts and Purchasing Manager and allows the Main reception to officially hand out the card. The Emergency Credit Card must be picked up /returned to the Fiscal Administrative Support staff. If they are away from their desks, return the card to the Payables Unit Manager, Fiscal Manager, Sr. Financial Advisor, or Contracts and Purchasing Manager for safekeeping.
- 6.10.8 No overnight possession is allowed.
- 6.10.9 The purchasing limit is \$700 per transaction. If there is a possibility that a purchase might exceed \$700, make prior arrangements with the Contracts and Purchasing Manager.
- 6.10.10 Order only from online vendors that appear legitimate; if questionable, do not use the vendor. They must provide the following information on their website:
- Billing address
  - Telephone number
  - Email address
  - Product price
  - Tracking numbers
- 6.10.11 Take a screenshot of the information above, print and place in the Active Monthly Credit Card Log
- 6.10.12 Purchasing is prohibited if the associated vendor website does not include the information mentioned above. Capture all required information mentioned above and store in F: drive under the study-specific purchasing folder under online study receipts.

- 6.10.13 Next, fill in the electronic version of the Credit Card Log; coordinate with the Primary Cardholder for instructions. The following information will be required.
- Credit Card Name (Emergency 1 or 2)
  - Date
  - Time
  - Users Name
  - Item Purchased
  - Justification and PR # (if needed)
  - Vendor name/Invoice #
  - Invoice amount
  - MIC (Master Index Code)
- 6.10.14 A copy of the credit card log is found in Ecology's Intranet under Forms/Purchasing /[Credit Card Log](#):
- 6.10.15 An electronic as well as a physical log must be created for each card used during the month.
- 6.10.16 After the order is placed print three copies of the online receipt/Purchase Request. Place one copy in the Study-specific Purchasing folder, one in the Active Monthly Emergency Credit Card Log, and the other in or on a labeled store / online vendor tote.
- 6.10.17 Verify that the printed invoice/purchase request contains the price and product/s identification information and shipping cost. Do not rely on incoming packing slips as they may have limited information.
- 6.10.18 The Study-specific Purchasing folder should be divided into two sections: complete orders and incomplete orders. Once the order is placed add online receipt/Purchase Request to the incomplete order section.
- 6.10.19 Next, print and fill in the electronic version of the Credit Card Log (found in Ecology's Intranet under Forms/Purchasing /Credit Card Log) with the following: Date, Time, Users Name, Item Purchased, Justification and PR # (if needed), Vendor name/Invoice #, Invoice amount, MIC (Master Index Code).
- 6.10.20 Print and populate the combined Active Monthly Credit Card Log for all PT studies. This physical log is required to be filled out by each credit card user for every purchase.
- Card user must print and sign their name and attach the original invoice and packing slips.
  - Verify that each shipment received has a printed invoice that contains the cost of each product purchased as well as the shipping cost.
  - If a packing slip arrives without the itemized price of the product/s and the shipping cost we are required to go back to the original vendor link and print out the specifics for each portion of the order received.
  - Group orders with multiple products for delivery and tracking ease. If orders for more than one product are placed from an online vendor/website: add order grouping clues to the shipping information. Products may come from multiple suppliers and adding this level of detail to shipping information may help track incoming products. i.e.: Chrissy Wiseman Product Testing (Group A) - Product Testing Program - Loading Dock –ECY HQ addresses. Next order add the (Group B).

- 6.10.21 The Contracts and Purchasing Manager will provide a monthly bank statement for each credit card. Reconcile any differences between the monthly statement and the PT Credit Card logs.
- 6.10.22 Create an electronic Credit Card Log for each study with all study specific purchasing information. Date of Purchase, Card user's name, Vendor Name, Product description and price including shipping costs, and a program billing code.
- 6.10.23 The Study-specific electronic log will be kept in the PT F: drive under the associated study.
- 6.10.24 The Primary Cardholder will populate a combined PT studies electronic version of the Active Monthly Credit Card log and email it to Ecology's designated Financial Service Accounts Payable Analysts monthly by the 27<sup>th</sup>.
- 6.10.25 The PT combined version is stored on the PT F: drive under Active Monthly Credit Card Folder.
- 6.10.26 Both the Study-Specific and Combined Credit Card electronic logs are required to be populated by each credit card user for every purchase.
- 6.10.27 Save the invoices in the receipts folder of the appropriate study. Name receipts with the format (Store name - Study – date – receipt).
- 6.10.28 To let the accounts settle, try to avoid purchasing with the emergency credit card between the 23<sup>rd</sup> to the 27<sup>th</sup> of the month unless absolutely necessary.
- Create totes labeled with the online vendor names and place a copy of the invoice on top of or in the totes. Labeled totes are stored in PT Prep Room cabinets.
  - Emergency Card Online product delivery may be delivered to the PT Prep Room if PT Staff are present. If prearranged, PMs may also request to pick up products directly from the Ecology's Shipping and Receiving departments secure cage.
  - As products arrive, place the original packing slip/s in the Active Monthly Credit Card Log. Again, verify that each shipment received has a printed invoice that contains the itemized cost of each product as well as the shipping cost.
  - Make two copies of the packing slip (if received).
    - Place one copy in the Study-specific Purchasing folder with a received date and the initials of the employee that received it.
    - Keep another copy with the incoming product/s in the store labeled tote. Keep all shipping address information with the incoming product/s.
  - Cross off received item/s on the stores tote/s invoice and in the Study-specific Purchasing folder and the physical copy of Active Monthly Credit Card Folder.
  - When orders have been received completely, move all receipts/packing slips in both the study-specific Purchasing Credit Card Log and the physical copy of Active Monthly Credit Card Log from the incomplete order section to the completely received order section.
    - For all canceled or incomplete orders, attach an in-detail memo to their original invoices. Group all packing slips and invoices together by vendor for every shipment.

- For orders that have not been completely received by the end of the month, attach an in-detail memo to the original invoice and place in the next month's log. Record the payment amount as well as shipping and handling costs for the remaining products in the Active Monthly electronic and physical logs. Note the month of the original order and line number of the Credit log from the order in the Active Monthly Credit Card Log that the order was completely received.
- Also, reference the record of the partial purchase from the previous month's Credit Card Log in the next month's memo attached with the remaining receipts. Update the agency study-specific and Combined Active Monthly Credit Card Logs when the order has been received in total. Only log in products to the PTDB once the whole order has been received. Do not log in incomplete orders unless the sample processing window is closing. Study PM will advise. Refer to Data Entry and Database SOP PTP002 data entry for instructions.
- Obtain signatures on the study-specific and Combined Active Monthly Credit Card Logs from Cardholder and Approving Environmental Assessment Section Manager. Reference the partial purchase order from the previous month's Credit Card Log. Attach the remaining receipts and reference the record # of the partial purchase from the previous month's Credit Card Log in the next month's memo attached with the remaining receipts
- Once signatures have been obtained turn in the combined PT studies Active Credit Card Log on the 27<sup>th</sup> to Ecology's designated Procurement & Supply Specialist. Due within five days after the 25<sup>th</sup> of each month.

6.11 *Product Storage:*

- 6.11.1 Clean cabinets and sample totes between studies with dilute detergent and water, rinse with water, then wipe with 24% ethanol. Dry with Kim Wipes
- 6.11.2 Label all shopping bag(s) with the date of purchase and ensure that the bag(s) are marked with the store name.
- 6.11.3 Verify bulky items that do not fit in totes have hanging tags attached that include the store name and purchase date.
- 6.11.4 The [Electronic Product and Sample Inventory/disposal Log](#) tracks the location of all products and samples by study. This log will be used when products/samples are brought in to the PT Prep Room, and updated when products/samples move between the PT Prep Room, the Product Testing Cage, and eventual disposal. This is done after a majority study's sample processing has been performed and is updated upon sample return and again after product/sample disposal.
- 6.11.5 Verify that products/samples that are disposed are documented in the log at the point of disposal (recycling, reuse, donation, and trash) or when relocated to Ecology's Dangerous Waste Storage Room.
- 6.11.6 If products are donated, archive all donation receipts in the [Electronic Product and Sample Inventory/disposal Log](#)

6.11.7 If samples are donated to other government agencies/research institutions to be used for research purposes a Sample Donation form is required to be completed and signed and stored on PT SharePoint site.

6.12 *Product Documentation and Labeling:*

6.12.1 Consult the study QAPP and the PM for additional photo requirements or if conducting a low-level study (for example if required to change gloves between products, photograph products on a piece of tin foil dull side up, etc.).

6.12.2 Take the following pictures of each product on a neutral background.

Close up images of:

- Brand name, distributor name, logo
- Composition label
- Individual components selected for analysis – prior to size reduction (recommended if they are not clearly visible in the product photo).
- Ingredients list (personal care products)
- Lot and batch numbers
- RN number (found on textile products, including fur, cloth, wool)
- The contents of the product if they are not visible in the packaging.
- The product in the packaging, full front and back images.
- UPC codes
- Warning labels/technical bulletins

6.12.3 All photos should be properly rotated when saving.

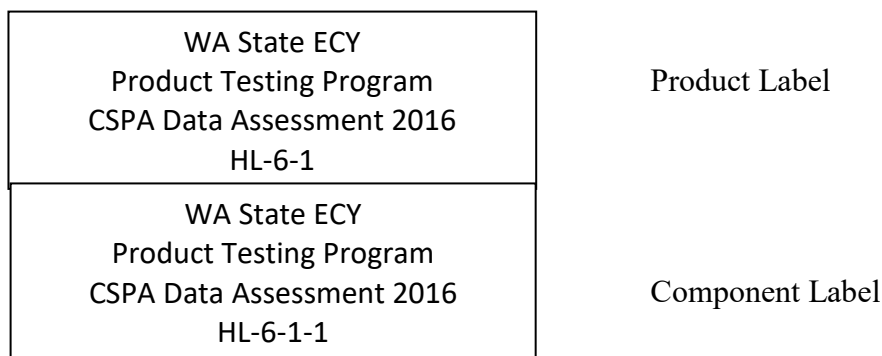
6.12.4 Save photographs under the correlating store folder for that specific study in the PT F: drive.

6.12.5 Enter a product record for each product in the PTDB, detailed in the Data Entry and Database SOP (PTP002). The database will generate a specific Product ID.

6.13 *Create a product label to include:*

- Product ID
- Product Testing Program
- Study Name
- WA State ECY

6.13.1 Label Examples



- 6.13.2 Place the product in a zip-top plastic sample bag and stick the label on the inside of the bag.
- 6.13.3 If more than one of the same product was purchased to obtain sufficient sample size, put all products in one bag. If additional product is purchased at a different time or from a different location, a new purchase is created and the product is logged in and bagged separately.
- 6.13.4 If more than one bag is needed, label all bags with the identical Product ID.
- 6.13.5 If the product is too large to place in a zip-top bag, either:
- Stick the label onto the original packaging of the product.
  - Place the label on a hanging tag and attach it to the product.
  - Place the product in a large plastic kitchen bag (if approved by PM) and place label to the outside of bag.
- 6.13.6 Products are organized by study and store/product location and kept in locked cabinets in the Product Sample Preparation Room or the Product Testing Cage.
- 6.13.7 Update the [Electronic Product and Sample Inventory/disposal Log](#) located on the PT Share Point Site.
- 6.14 Standard Sample Preparations
- 6.14.1 Wash lab coats between studies or whenever soiled. Lab coats must be washed with a laundry soap that carries one of the following certifications (Safer Choice, Ecologo, or Green Seal) and does not contain the chemicals to be assessed. Place the lab coat wash date on Lab Coat sign directly above coats.
- 6.14.2 Prior to use, all tools and materials used in product physical deconstruction and sample preparation are pre-screened with the X-Ray Fluorescence (XRF) (for metal tools) and the FTIR (for tools with soft plastic material) to verify that they do not contain analytes of concern.
- 6.15 Cleaning Equipment and Supplies
- De-ionized water (DI water) (except for PFAS studies, use only tap water for cleaning).
  - Detergent: Alconox or Liquinox
  - Disposable glass Pasteur pipettes (dispose of in broken glass container when all solvent is evaporated)
  - Empty glass bottles for properly disposing of used solvents
  - Face shield
  - Glass funnel
  - Hexane, certified ACS HPLC grade > 99.5% (if specified in QAPP and use only in fume hood, keep in glass bottle)
  - Isopropyl alcohol pads

- Lab coat
- Large and small Kim Wipes
- Latex pipette bulbs
- Methanol, certified ACS reagent > 99.8% (if specified in QAPP and use only in fume hood)
- Nitric acid, 10% solution (if specified in QAPP)
- Nitrile gloves
- Polyethylene rinse bottles for solvents (methanol or ethanol only)
- Safety glasses/goggles
- Scrub brush
- Stainless steel bowls for collecting used solvents
- 24% ethanol, ACS or food grade quality
- Aluminum foil
- Wash bottle for dilute Liquinox

6.15.1 Review Section 9 Safety prior to tool cleaning.

6.16 *Standard Cleaning Equipment and Tools Procedures:*

6.16.1 Wear appropriate PPE (e.g. gloves, eyewear, and clean lab coat) while cleaning tools. Nitrile gloves are recommended for all tool decontamination processes.

6.16.2 At a minimum, clean all tools prior to beginning of each new study, and when the tool is needed again. Refer to the study-specific QAPP for additional cleaning protocols as well as the Tool Cleaning Procedure by Chemical for Sample Collection and Processing summary tables found in Appendix B.

6.16.3 Tool cleaning is conducted in the Product Sample Preparation Room (OL-21).

6.16.4 Set up a drying location for clean tools by placing a large piece of aluminum foil (dull side up) and cover with Kim Wipes.

6.16.5 Replace wipes, gloves, and foil as necessary throughout the process to prevent cross contamination

6.16.6 Prepare 1% Liquinox solution with DI water.

6.16.7 Always wash tools and equipment with a 1% Liquinox solution.

6.16.8 Mix 10 ml cleaning agent Liquinox to 1 Liter DI water in pre-labeled PT soap wash bottles.

6.16.9 The remaining cleaning solution will be kept in the Product Sample Preparation Room

6.17 *Wash the "Prep Room Clean Tool Bin" prior to use:*

- Scrub with 1% Liquinox solution
- Rinse with DI water
- Rinse with a 24% Ethanol solution
- Line with aluminum foil and Kim Wipes (Some studies may require the use of tap water, verify with PM or SPL). Use this bin to transport and store clean tools.



- 6.18 Follow steps 1 through 8 to clean one tool at a time:
- Step 1: Squirt a small amount of the diluted 1% Liquinox cleaning solution onto a clean scrub brush and scrub each tool thoroughly. Rinse the scrub brush prior to cleaning the next tool and set in pre-rinsed stainless bowl between uses.
  - Step 2: Rinse the tool, cutting edge up, with cold tap water and follow with a 3 second DI water rinse.
  - Step 3: Spray trace amounts of a 10% Nitric acid solution over the entire tool surface rotating the tool to ensure the acid rinse is thorough, while cold tap water is running diluting residual acid.
  - Step 4: Follow with DI water rinse.
  - Step 5: Follow with a 24% Ethanol solution to expedite tool drying.
  - Step 6: Place tools on aluminum foil covered with Kim Wipes to air dry.
  - Step 7: Dry tools with Kim Wipes or allow tools air dry covered with Kim Wipes. Place dry tools, in the “Prep Room Clean Tool Bin.” Place all tools in the same direction – handles and cutting edges.
  - Step 8: Optional - individual wrapping of each tool. Lay out aluminum foil (dull side up) large enough to encapsulate the tool. (Study-specific QAPPs will indicate if the tools require individual foil wrapping.)
  - Repeat the process above until all tools are clean.
- 6.19 Cleaning tools between samples
- 6.19.1 Procedures that permit cleaning tools between samples are determined by the study and target analytes.
- 6.19.2 Tools should be cleaned between samples by using Kim Wipes moistened with DI water, 24% ethanol, or isopropyl alcohol wipes.
- 6.20 Tool Selection and Recording for Product Deconstruction and Sample Preparation
- 6.20.1 Reduction of product size to a sample size for laboratory analysis or for pre-screening will be conducted first using hand tools made of stainless steel, categorized in group A.
- 6.20.2 If tools in group A are not sufficient for breaking down components, use tools in group B, then to tool group C.

*Table 1. Product Testing Tool Categories Designation by XRF screen*

Group A	Group B	Group C
< Detection Limit of Sb, Cd, Pb, Hg, Co, As	<Detection - 0.5 ppm of Sb, Cd, Pb, Hg, Co, As	<0.5 of Sb, Cd, Pb, Hg, Co, As

- 6.20.3 All new PT tools will be pre-screened
- 6.21 Product Deconstruction (Creating a Sample) for XRF Screening
- 6.21.1 The PM or Sample Lead Prep will reserve time on the Product Sample Preparation Room Calendar to avoid scheduling conflicts.
- 6.21.2 Equipment Needed
- PPE’s: safety glasses/goggles or a face shield, safety goggles, face shield, nitrile gloves, and closed-toed shoes.
  - 24% Ethanol

- Aluminum Foil
- Clean pre-screened scissors and other cutting tool
- Disposable nitrile gloves
- Kim Wipes
- Lab coat (when handling products)
- Liquinox squirt bottle (1% solution)
- Safety glasses/goggles, or a face shield
- Scrub brush
- Sharpies
- Pre-screened sample bags

- 6.22 Procedures for Deconstruction - Creating a Sample for XRF Screening
- 6.22.1 For Hand reduced Samples
- 6.22.2 Clean workspace with Kim Wipes using 1% solution Liquinox, then with DI water, and followed by 24% ethanol.
- 6.22.3 Work on a clean stainless steel surface or aluminum foil (dull side up) lined with Kim Wipes.
- 6.22.4 At the start of the processing day, ensure all needed tools were cleaned. Review the Prescreening table of the Tool Cleaning Procedure by Chemical in the Sample Collection and Processing summary tables in Appendix B.
- 6.22.5 Use tools from Tool Selection section 6.21.2 Table 1, above, for guidance on tool category (Stainless steel tools in Tool Category A are recommended).
- 6.22.6 Locate and take products out of locked cabinets. Remove products one at a time from the bags and place on the clean workspace.
- 6.22.7 In order to determine the target component/s navigate to the associated purchase/product page in the PTDB (refer to PT Database Entry and Database SOP PTP002).
- 6.22.8 Deconstruct the product into the components (including packaging, if required) specified in the PTDB. If additional components of interest are identified, enter them into the PTDB. PM will provide the details study specifics on which components are to be prepared.
- 6.22.9 Once a component has been isolated for screening, place it into an appropriately sized zip-top bag and label the bag with the Component.
- 6.22.10 When all components, or components of interest, have been isolated and labeled in zip-top bags, clip the component bags together in numerical order, and place back into the product bag with the remains of the initial product.
- 6.22.11 Before deconstructing another product, use tool from “Cleaned tool bin” in accordance with appropriate clean tool protocol. Additional cleaning requirements may be specified in the study QAPP.
- 6.22.12 Replace Kim Wipes used at the workspace between samples or clean the stainless steel table with 24% ethanol and Kim Wipes.
- 6.22.13 If it is being used, aluminum foil should be replaced between products.
- 6.22.14 Replace gloves between products.

- 6.23 Procedures for Deconstruction - (Creating a Sample) for Lab Analysis
- 6.23.1 Equipment Needed
- PPE's: safety glasses/goggles or a face shield, safety goggles, face shield, nitrile gloves, and closed-toed shoes.
  - 24% Ethanol
  - Disposable nitrile gloves
  - Aluminum Foil
  - Kim Wipes
  - Lab coat (when handling products)
  - Liquinox squirt bottle (1% solution)
  - Safety glasses/goggles, or a face shield
  - Scrub brush
  - EPA pre-cleaned certified sample jars
  - Sharpies
  - Clean pre-screened scissors and other cutting tools
- 6.24 The basic product testing sample preparation procedure listed here describes protocols staff should use when the project plan requires a laboratory analysis quantitation limit of  $\geq 1$  ppm.
- 6.24.1 The PM or SPL will reserve time in the Product Sample Prep Room on the PT SharePoint Calendar to avoid scheduling conflicts. On the PT SharePoint Calendar Provide details with specific tasks: how to clean and set up preparation space, the need for specific equipment like the hood, XRF and the FTIR.
- 6.24.2 Prepare samples that are under pressure, off-gas (fertilizers and pesticides), squirt/spray in the fume hood.
- 6.24.3 If necessary vacuum with a HEPA filter prior to sample preparation. It may be necessary to vacuum in between sample preparation as well. The Study PM will determine and provide those details to Prep Staff (PT vacuum is stored in the PT cage or the Prep room).
- 6.24.4 Use clean lab coats when preparing samples. Verify the wash date on Lab Coat sign. Lab coats must be washed with a laundry soap that carries one of the following certifications (Safer Choice, Ecologo, or GreenSeal) and does not contain the chemicals to be assessed.
- 6.24.5 Wear nitrile gloves, a lab coat, safety glasses/goggles or a face shield, and closed-toed shoes when handling and preparing samples.
- 6.24.6 Locate and take products out of locked cabinets. Remove products one at a time and place on clean workspace.
- 6.24.7 When component level photos are required, photograph the component or verify that the component has been photographed, before proceeding with sample reduction.
- 6.24.8 Reconfirm with the PM and/or the SPL for required sample volume, mass and size needed.
- 6.24.9 Use a lab scale to determine the sample weight if necessary. Place a clean Kim wipe on the scale between samples unless samples weighed in tared or pre-weighed sample jar.

- 6.24.10 When reducing samples work on a clean stainless steel surface or aluminum foil (dull side up) or with Kim Wipes. Maintain a clean work area throughout the process.
- 6.24.11 Before processing samples, clean the stainless tabletop with a 1% solution of Liquinox.
- 6.24.12 Rinse with DI water and then use 24% ethanol to wipe down the surface.
- 6.24.13 If using Kim Wipes replace between samples.
- 6.24.14 Replace foil (working on dull side of surface) as needed.
- 6.24.15 If working directly on a stainless steel surface, clean between each sample with 24% ethanol.
- 6.24.16 If there is any residual material, use a 1% solution Liquinox.
- 6.24.17 Rinse with DI water.
- 6.24.18 Clean with 24% ethanol.
- 6.24.19 Use properly cleaned tools. Review study-specific instructions located in the Tool Cleaning Procedure by Chemical in the Sample Collection and processing summary tables, Appendix B.
- 6.24.20 If needed, vacuum between samples if remnants from a previous sample compromise the cleanliness of the preparation space.
- 6.24.21 Place prepared samples into pre-cleaned certified sample containers that have been maintained under custody. Verify that the sample containers came with a pre-cleaned certified *Certificate of Compliance*. Insure the Certificate of Compliance meets the needs of the study. Label certificate of compliance sheets from open sample boxes with the study name and date and place them into the QA/QC Folder under the designated study.
- 6.24.22 Optional, refer to study-specific QAPP: When preparing liquid samples, double bag the product after verifying that lids are sealed tight.
- 6.24.23 Label sample containers with the following information:
- Analysis method
  - Component ID
  - Date
  - Lab# provided by the lab
  - Sample preparation time
  - Sampler's initials or name
  - Study name
- 6.25 Place used tools into the "Prep Room Dirty Tool Bin." or directly in the sink if tool needs to be rewashed with protocol in order to be reused immediately.
- 6.26 Store prepared samples for laboratory analysis in locked cabinets in the Product Sample Preparation Room, the COC Room, or the walk-in cooler within the COC Room (when required in study QAPP).
- 6.27 If receiving analytical results while continuing to process current study products, it is important to have a check-in with the PM disclosing those results. This information may warrant additional use of PPE and allow for samples to be handled with more caution.
- 6.28 *Low Level* (<1 ppm) Sample Preparations

- 6.28.1 *Low Level* (<1 ppm) - Tool Cleaning Equipment and Supplies
- PPE's: safety glasses/goggles or a face shield, safety goggles, face shield, nitrile gloves, and closed-toed shoes.
  - DI Water system (except for PFAS studies)
  - Disposable nitrile gloves – required for Hexane and Methanol
  - Foil
  - Funnel (as needed) – glass or plastic
  - Hood
  - Kim Wipes
  - Lab coats
  - Labeled rinsate container
  - Liquinox
  - Low-level Clean Tool Tote
  - New scrub brush
  - Nitric acid, 10% solution (if specified in QAPP)
  - Pipettes and bulbs
  - PPE's, face shield, safety goggles, apron
  - Silver shield gloves - required for acetone, optional use for Methanol and Hexane.
  - Solvent
  - Solvent rinse bottle (solvent compatible)
  - Stainless steel bowl
  - Wash bottle for dilute Liquinox
- 6.28.2 Note: Although Silver shield gloves are not required for Methanol and Hexane they provide more effective at wrist and arm coverage and should be considered based on the process/need.
- 6.28.3 Open sash of fume hood to appropriate level and ensure the fume hood ventilation is on and is venting properly (test by placing a Kim Wipe near the open sash verifying that the wipe is pulled into hood gently). Clean surface in fume hood with a Kim Wipe and 24% ethanol or with appropriate solvent that tools will be cleaned with. Line the inside of the fume hood with aluminum foil (dull side up).
- 6.28.4 Solvents and solvent rinse bottles are located in the corrosive and flammable cabinets in the Hazardous Material Storage Room (OL-14) and labeled specifically for the product testing program. Transport solvents or acids from storage using a secondary container and place directly into fume hood.
- 6.28.5 Use the rinse bottles for rinsing tools during the cleaning process. Use a funnel (as needed) to pour the solvent from original container into rinse bottle (glass or plastic depending on solvent compatibility) for ease of rinsing tools and to reduce contamination in original solvent container.
- 6.29 *Low Level* (<1 ppm) - Equipment and Tool Cleaning
- 6.29.1 Follow steps 1 through 7 to clean one tool at a time:

- 6.29.2 Step 1: Squirt a small amount of the diluted cleaning solution prepared using DI water or tap water (determined by the QAPP requirements) onto a clean scrub brush and scrub each tool thoroughly for at least 30 seconds, or longer if there are visible pieces of product on the tool. Thoroughly rinse scrub brush before cleaning the next tool, set in pre-rinsed stainless bowl.
- 6.29.3 Step 2: Rinse the tool thoroughly using designated water (tap water used for PFAS analysis and DI water for all other analyses). Point the cutting edge of the tool upward when rinsing allowing water to run down both sides of cutting surface of the tool away from handle to ensure complete rinse.
- 6.29.4 Step 3: Spray trace amounts of a 10% Nitric acid solution over the entire tool surface rotating the tool to ensure the acid rinse is thorough, while cold tap water is running diluting residual acid.
- 6.29.5 Step 4: Rinse the tool surface directly with designated water. (DI water for all analysis except PFAS analysis which requires tap water).
- 6.29.6 Step 5: Place tools on aluminum foil (dull side up) and covered with Kim Wipes. Gently pat tool dry with a clean Kim Wipe and place on a piece of clean dull side up aluminum foil (no Kim Wipe layer).
- 6.29.7 Step 6: Replace gloves and use longer that cover the forearm (Silver shield or longer nitrile gloves). Only hold tool at the handle to avoid touching cutting surface. In the Fume Hood: Use the solvent rinse bottle or glass bottle with glass pipette equipped with pipette bulb (for hexanes) to rinse both sides of the stainless steel tool surface (avoid handle especially if handle is plastic). Place rinsed tool on the clean aluminum foil lined surface of the hood and allow all solvent to evaporate until tool is dry. Leave tool surfaces open and do not overlay tools.
- 6.29.8 If collecting rinsate blanks, rinse the tool over a collection pre-labeled container (HDPE or glass container) that is set inside a clean stainless steel collection tray or bowl.
- 6.29.9 If not collecting rinsate blank, then rinse tool into the stainless steel collection tray or bowl (collect at the end of cleaning process by pouring waste solvent into a labeled glass solvent container with a funnel used specifically for waste solvents). Place waste solvent in the appropriate cabinet in the Hazardous Material Storage Room (OL-14).
- 6.29.10 Leave all collection containers in the fume hood until all residual solvent has evaporated. Clean the stainless steel collection tray, bowl, and funnel as described above and store in the Low-level cleaning tote.
- 6.29.11 Step 7: For individual wrapping of each tool, lay out a small piece of foil dull side up. Place clean tool surface on the dull side of foil, and gently fold foil around tool. If placing tool directly into clean tool bin it acceptable to avoid wrapping handle of tool. Place all tools in the same direction – handles and cutting edges.
- 6.29.12 Continue with the above process until all tools are clean. Use new gloves when moving from cleaning to rinsing to wrapping tools.
- 6.29.13 Collect used solvent and acids (not rinsate samples) and store properly until disposal as described in section 11.0 of the Chemical Hygiene Plan (Appendix A).

- 6.29.14 Store rinsate samples in a labeled box in the Hazardous Material Storage Room (OL-14) with the following information; program name, study name, rinsate (hexane or methanol), PM information (name & phone number) and date.
- 6.29.15 Tools may not be reused between processing different samples and must be cleaned again following the above process.
- 6.30 *Low Level* (<1 ppm) Product Deconstruction (Creating a Sample) for XRF Screening
- 6.30.1 Equipment Needed:
- Aluminum Foil
  - Di Water system (exception PFAS research)
  - Disposable nitrile gloves – required for Hexane and Methanol
  - Funnel (as needed) – glass or plastic
  - Hood
  - Kim Wipes
  - Lab coats
  - Labeled rinsate container
  - Liquinox
  - Low-level Clean Tool Tote
  - New scrub brush
  - Pipettes and bulbs
  - PPE’s, face shield, safety goggles, apron
  - Sample bags, pre-screened
  - Scissors and other pre-screened cutting tools
  - Sharpies
  - Silver shield gloves - required for acetone, optional use for Methanol and Hexane.
  - Solvent
  - Solvent container
  - Solvent rinse bottle (solvent compatible)
  - Stainless bowl
  - Wash bottle for dilute Liquinox
- 6.30.2 *Note:* Although Silver shield gloves are not required for Methanol and Hexane they provide more effective at wrist and arm coverage and should be considered based on the process/need.
- 6.30.3 Open sash of fume hood to appropriate level and ensure the fume hood ventilation is on and is venting properly (test by placing a Kim Wipe near the open sash verifying that the wipe is pulled into hood gently). Clean surface in fume hood with a Kim Wipe and 24% ethanol or with appropriate solvent that tools will be cleaned with. Line the inside of the fume hood with tin foil (dull side up).
- 6.30.4 Solvents and solvent rinse bottles are located in the corrosive and flammable cabinets in the Hazardous Material Storage Room (OL-14) and labeled specifically for the product testing program. Transport solvents or acids from storage using a secondary container and place directly into fume hood.

- 6.30.5 Use the rinse bottles for rinsing tools during the cleaning process. Use a funnel (as needed) to pour the solvent from original container into rinse bottle (glass or plastic depending on solvent compatibility) for ease of rinsing tools and to reduce contamination in original solvent container
- 6.31 Low Level (<1 ppm) Procedures for Deconstruction (Creating a Sample) for XRF Screening
- 6.31.1 For hand-reduced samples:
- 6.31.2 Clean workspace with Kim Wipes, 1% solution Liquinox, DI water (or tap water as applicable), and 24% ethanol.
- 6.31.3 Line workspace table with foil (dull side up) as applicable.
- 6.32 Between each sample:
- 6.32.1 Replace aluminum foil working on dull side of foil and Kim Wipes as applicable.
- 6.32.2 Change gloves between each sample.
- 6.32.3 Use new pre-cleaned tool wrapped in foil (cleaned by low level cleaning procedure) for every sample that is being deconstructed.
- 6.32.4 Hand-reduce sample, place in pre-screened bag.
- 6.32.5 For aliquot samples:
- 6.32.6 If collecting an aliquot of a sample in the field or from a product too large to ship to lab then open lid of sample container with clean gloves and pour a well-mixed aliquot of the original product into a clean jar. Replace lid without touching inside of jar or lid.
- 6.32.7 Make sure that the aliquot pouring from original container does not run down outside of container but is a clean pour directly from original container into clean sample container. If needed, use a pre-cleaned funnel for collecting sample in container.
- 6.32.8 Obtain a representative sample without contaminating the remaining product for future analysis.
- 6.32.9 If product/sample is volatile, collect aliquot in the fume hood.
- 6.32.10 See Product Testing In-House Product /Sample Processing Procedures summary table (Appendix B) and review study QAPP for specific details.
- 6.33 Low Level (<1 ppm) Product Deconstruction (Creating a Sample) for Lab Analysis
- 6.33.1 Equipment Needed
- Aluminum Foil
  - Di Water system (exception PFAS research)
  - Disposable nitrile gloves – required for Hexane and Methanol
  - Funnel (as needed) – glass or plastic
  - Hood
  - Kim Wipes
  - Lab coats
  - Labeled rinsate container
  - Liquinox
  - Low-level Clean Tool Tote



- New scrub brush
- Pipettes and bulbs
- PPE's, face shield, safety goggles, apron
- Sample containers
- Scissors and other pre-screened cutting tools
- Sharpies
- Silver shield gloves - required for acetone, optional use for Methanol and Hexane.
- Solvent
- Solvent container
- Solvent rinse bottle (solvent compatible)
- Stainless bowl
- Wash bottle for dilute Liquinox
- *Note:* Although Silver shield gloves are not required for Methanol and Hexane they provide more effective at wrist and arm coverage and should be considered based on the process/need.

- 6.33.2 Open sash of fume hood to appropriate level and ensure the fume hood ventilation is on and is venting properly (test by placing a Kim Wipe near the open sash verifying that the wipe is pulled into hood gently). Clean surface in fume hood with a Kim Wipe and 24% ethanol or with appropriate solvent that tools will be cleaned with. Line the inside of the fume hood with aluminum foil (dull side up).
- 6.33.3 Solvents and solvent rinse bottles are located in the corrosive and flammable cabinets in the Hazardous Material Storage Room (OL-14) and labeled specifically for the product testing program. Transport solvents or acids from storage using a secondary container and place directly into fume hood.
- 6.33.4 Use the rinse bottles for rinsing tools during the cleaning process. Use a funnel (as needed) to pour the solvent from original container into rinse bottle (glass or plastic depending on solvent compatibility) for ease of rinsing tools and to reduce contamination in original solvent container.
- 6.33.5 Line workspace table with foil (dull side up) as applicable.
- 6.33.6 Between each sample:
- 6.33.7 Replace aluminum foil working on dull side of foil and Kim Wipes as applicable.
- 6.33.8 Change gloves between each sample.
- 6.33.9 Use new pre-cleaned tool wrapped in foil (cleaned by low level cleaning procedure Section 6.29) for every sample that is being deconstructed.
- 6.33.10 Hand-reduce sample into pre-weighed and pre-labeled clean jar.
- 6.34 Procedures for Deconstruction and Sample Preparation.
- 6.34.1 For low-level (<1 ppm) analyses specific details, refer to the study QAPP and summary tables in Appendix B for specific details.
- 6.34.2 For hand-reduced sample
- Clean workspace with KimWipes, 1% solution Liquinox, DI water (or tap water as applicable), and 24% ethanol.

- 6.34.3 For aliquot sample
- 6.34.4 If collecting an aliquot of a sample in the field or from a product too large to ship to lab then open lid of sample container with clean gloves and pour a well-mixed aliquot of the original product into a clean jar. Replace lid without touching inside of jar or lid.
- Make sure that the aliquot pouring from original container does not run down outside of container but is a clean pour directly from original container into clean sample container. If needed, use a pre-cleaned funnel for collecting sample in container.
  - If possible, collect aliquot in the fume hood.
- 6.34.5 If possible, send sample for homogeneous samples such as creams, gel in original container, unopened
- 6.35 Recordkeeping
- 6.35.1 Sample Preparation Log
- 6.35.2 Low level samples require tool use documentation of both physical destruction for prescreening as well as sample preparation. Record whether there is sample left, if a composite was prepared using multiple components, or indicating what part of the product was used for a sample
- 6.35.3 Record this information on a Sample Preparation Log:
- Pre-screen date/sample date
  - Sample availability
  - Sample time
  - Sample weight
  - Sampler's name
  - Study name
  - Tool designation will be outlined in the summary tables in Appendix B
  - Tool(s) used to reduce the sample
  - Work order number (if available)
- 6.36 Chain of Custody
- MEL's Laboratory Analyses Required (LAR) form, serves as the COC documentation. Record the following information on an appropriate laboratory analysis Chain of Custody form found on the Product Testing Share Point site, when preparing samples for laboratory analysis:
- Analysis method
  - Component ID
  - MEL Work Order number
  - Number of sample containers per sample
  - PM contact information
  - Print, sign, and scan the COC form and save on the PT F: drive under the study folder
  - Sample matrix
  - Sample time and date

- Sampler's name
  - Shipment date and time
- 6.36.1 Source code – Describes the types of matrix
- 6.37 Sample Shipment
- 6.37.1 Supplies required for Sample Shipment:
- Blue ice
  - Boxes for sample containers
  - Chain of custody forms
  - Chain of custody seals
  - Clean coolers
  - Packing materials
  - Samples
  - Shipping Labels if necessary
  - Shipping tape
- 6.37.2 Samples must remain under COC during the entire shipping process. The locked COC Room serves as an approved secured holding area for samples.
- 6.37.3 It is advisable that sample containers be kept in their original shipping boxes and the boxes then placed into coolers. Use packing materials (e.g., bubble wrap, packing peanuts) or ice packs (when required by study) to surround loose samples and fill voids in coolers.
- 6.37.4 Samples may be analyzed by either Ecology's Manchester Environmental Laboratory (MEL) or a contracted laboratory. Follow appropriate procedures when preparing the samples for shipment.
- 6.38 For Manchester Environmental Laboratory (MEL).
- 6.39 The PM or Sample Prep Lead submits a Pre-Sampling Notification form (PSN) and Sample Container Request form to MEL at least three weeks prior to sampling. MEL will provide a work order number.
- 6.40 Fill out the Laboratory Analyses Required (LAR) form, which will serve as the COC documentation located on the PT Share Point site under forms. MEL work order number/sample numbers will need to be added to sample containers and to the LAR/COC forms.
- 6.41 Finalize the LAR form by verifying that it is complete and that all samples are recorded appropriately, then sign and date the form.
- 6.42 Place the sample containers in a cooler. If using more than one cooler, place a copy of the COC in each cooler going to the laboratory.
- 6.43 Seal the clearly labeled cooler with a COC seal and secure it in the COC Room on the table or walk-in cooler (when specified in the QAPP).
- 6.44 Place a completed LAR form in the courier box on the lab bench. The location of the samples must be clearly marked on the LAR form.

- 6.45 Notify MEL's sample receiving staff when the samples are ready for pickup and the storage location. MEL courier staff will pick the samples up and deliver them to the laboratory for analysis.
- 6.46 Complete the Outgoing Sample Checklist to verify all COC and sample shipment procedures are met before for sending out samples.
- 6.47 For Contract Laboratory:
- 6.47.1 The PM or SPL will submit a Pre-Sampling Notification form (PSN) and Sample Container Request form (Appendix A) to MEL at least three weeks prior to sampling. MEL will provide a work order number. MEL work order number/sample numbers will need to be added to sample containers and to the contract laboratory's COC forms.
- 6.47.2 If sending samples directly to a contract laboratory, follow any specific guidelines for that particular laboratory.
- 6.47.3 Use the appropriate COC form for the contract laboratory.
- 6.47.4 Fill out the COC form, carefully verifying that it is complete and that all samples are recorded appropriately.
- 6.47.5 Place the sample containers in a cooler. If using more than one cooler, place a copy of the COC in each cooler going to the laboratory.
- 6.47.6 Place the completed COC form and contact information for the analytical laboratory in a zip-top bag and place the documents in the cooler before sealing.
- 6.47.7 If using more than one cooler, place a copy of the COC in each cooler going to the laboratory.
- 6.47.8 Seal the cooler/coolers with a COC seal.
- 6.47.9 Close the cooler with shipping tape and add the laboratory shipping address to the outside of the cooler.
- 6.47.10 Contact the laboratory before sending samples, to confirm that the contract laboratory is prepared to receive them.
- 6.47.11 Take the samples to the Ecology mailroom. Provide:
- study MIC code
  - your email
  - your name
  - your phone number
- 6.47.12 If the samples are not going to be shipped within two hours and ice packs are required, place the samples back in the sample storage refrigerator until just before shipping.
- 6.47.13 Ship the samples using over-night services to reduce transit time, making sure this coordinates with the corresponding lab's schedule.
- 6.47.14 Provide the tracking information to the contract laboratory. Verify the return of coolers and retention samples from contract laboratories
- Complete the Outgoing Sample Checklist to verify all COC and sample shipment procedures are met before for sending out samples.
- 6.48 Sample Retention:

- 6.48.1 Products/samples from the active PT studies must be placed in secured locations before and after processing to ensure custody protocol. The active PT studies products/samples are kept in locked cabinets in the Product Prep Room (OL-21) and or the HWTR HQ cage (OS-23). Products and samples from previous studies may also be retained in the HWTR HQ cage (OS-23) in order to maintain the Chain of Custody. The previous studies samples/products may provide value for potential future analysis, research and development or educational opportunities.
- 6.48.2 The samples and original products will be maintained under custody until all data is received, reports are written, and all compliance actions have been settled.
- 6.49 Disposal Protocol for Products/Samples
- 6.49.1 For each study, the Enforcement Officer and PM will verify which products/samples need to be retained.
- 6.49.2 Send this information to the Sample Prep Lead, print, and place into the “Enforcement Sample Documentation/Disposal,” log located in the Product Sample Preparation Room.
- 6.49.3 The enforcement products/samples will be boxed and labeled “Enforcement Samples” with the corresponding study name, a copy of the “Enforcement Sample Documentation/ Disposal,” log and placed in the Enforcement cabinets (#17, 18) in the PT cage. The enforcement samples will be retained in the PT cage until the enforceable case has been settled.
- 6.49.4 This update the [Electronic Product And Sample Inventory/disposal Log](#)
- 6.50 Disposal/Donation:
- 6.50.1 Place WA State and Federal Designated waste codes on lab samples and products required to be processed as hazardous waste.
- 6.50.2 Donate, recycle, and designate/dispose of remaining products and samples from specified study, using appropriate PPE (gloves, eyewear, face shield, and lab coats) when needed.
- 6.50.3 The samples that are designated as hazardous waste are moved to the HQ Dangerous Waste Storage Room.
- 6.50.4 Disposal boxes are labeled with the proper hazardous waste designation labels and waste codes.
- 6.50.5 The label will include the following information:
- Correct state and federal disposal codes
  - Current date
  - Item number
- 6.50.6 Weigh all boxes.
- 6.50.7 Record the following information on Ecology HQ’s Building Disposal Log:
- Box weight
  - Current date
  - Disposal codes
  - Examples of the items being disposed (i.e. paint, fertilizer, pesticides, aerosol cans with residual solvents).

- Item number
- Study name

6.50.8 If disposal questions arise, contact staff from the HWTR Regulatory Assistance Unit.

6.50.9 The remaining products from the specific study will be separated into bags/boxes labeled “Donation,” “Disposal.” and “Recycle,”

6.50.10 Items that were collected for donation are delivered to the donation site(s).

- Collect donation receipts and record which studies the donated items came from.
- Keep donation receipts in the “Enforcement Sample Documentation/Disposal” log.

6.50.11 Dispose of non-designated laboratory samples into the garbage that contain large pieces of the sampled product and recycle the glass sample jar. If the sample is a powder or liquid, it is to remain in the glass sample jar and be disposed of into the garbage to avoid exposure

## **7.0 Records Management**

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7.1 Sample Preparation Log

7.1.1 Use the Sample Preparation Log to document individual sample preparation information, such as the tool used, whether there is sample left, if a composite was prepared using multiple components, or indicating what part of the product was used for a sample. Sample Preparation Log use to be determined by PM on a study specific basis.

7.2 Completed Chain of Custody forms are kept with the associated study documents on the agency’s F: drive.

## **8.0 Quality Control and Quality Assurance Section**

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8.1.1 Quality Assurance checks for study-specific data entered into the PTDB are described in the current version of the Product Testing Data Entry and Database SOP.

8.1.2 The following two logs are reviewed for completion by the PM:

- Product Documentation Log
- Sample Preparation Log (for low level studies)

8.1.3 All Chain of Custody forms will be reviewed for completion by the PM, SPL, and/or PT Prep Room Staff other than the person who initially filled it out to ensure no lapse in custody and accuracy.

8.1.4 QC samples for both screening and lab analyses will be specified in the study-specific QAPP. These will typically include various blanks, LCS, replicates, and/or standards for recovery. Screening and analytical results for these QC samples will be compared to any quality objectives and used to evaluate uncertainty and usability of the final project results.

## **9.0 Safety**

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9.1.1 Some consumer products may contain chemical(s) of concern and should be handled with caution. Chemicals found in consumer products may include carcinogens, pesticides, flame retardants, corrosives, and metals. Staff handling and processing consumer products and samples derived from them should review:

- Policy 14-20 (Appendix A) Vehicle
- The Relevant Sections of the Agencies Chemical Hygiene Plan (Appendix A).
- The Product Testing In House Product /Sample Processing Procedures for appropriate glove protection (Appendix A).

9.1.2 Staff cleaning equipment and tools prior to product sampling or processing must be familiar with the hazards, as described in SDSs that may be associated with any of the chemicals they handle. Safety Data Sheets for all chemical materials handled during consumer product sample processing will be maintained in the Product Testing Sample Preparation Room.

## 10.0 References

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- 10.1.3 Friese, M. 2014. Standard Operating Procedures for Decontaminating Field Equipment for Sampling Toxics in the Environment. Version 1.0.
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<http://onlinelibrary.wiley.com/doi/10.1111/j.1745-6592.2000.tb00252.x/abstract>
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<http://app.leg.wa.gov/RCW/default.aspx?cite=70.95G.010>  
 Washington Department of Ecology, 2010. Credit Card Log, Ecy 010-142.  
<http://awwecology/sites/asi/forms/Shared%20Documents/010-142.docx>
- 10.1.9 Wiseman, C. July 2018. Standard Operating Procedures for Consumer Product Sample Collection and Processing. Version 2.0

# Appendix A. List of Procedural Forms and Checklists – Product Testing SOP # 1 -

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Below is a list of all of the Product Testing procedural forms and checklists associated with Product Testing SOP # 1. These documents are located on the WA state Dept. of Ecology's internal SharePoint site.

A copy of these forms may be requested from any of the following Product Testing Team Members.

- Ken Nelson - knel461@ECY.WA.GOV
- Kari Trumbull - katr461@ECY.WA.GOV
- Prajwol Tuladhar - ptul461@ECY.WA.GOV
- Chrissy Wiseman - chrw461@ECY.WA.GOV

## **MEL Pre-sample Notification Form**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=rx%2bQE RT4FAabgC%2boNS4IRPUqhzHu4SD1O4rz8kaX9Cs%3d&docid=2\\_125b90f190455489aa5278960cfa3b26f&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=rx%2bQE RT4FAabgC%2boNS4IRPUqhzHu4SD1O4rz8kaX9Cs%3d&docid=2_125b90f190455489aa5278960cfa3b26f&rev=1)

## **Sample Container Request Form**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=%2bEmdz2IntoG2ccWW4dfJzbUmAq%2fMQiyWHN3n6pl%2brF8%3d&docid=2\\_19600f38650b546d0bd203c1ed712fcb4&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=%2bEmdz2IntoG2ccWW4dfJzbUmAq%2fMQiyWHN3n6pl%2brF8%3d&docid=2_19600f38650b546d0bd203c1ed712fcb4&rev=1)

## **Manchester Environmental Laboratory Chain of Custody (COC) form**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=gxMYHUji12WV9D8o73K1RHoAvnjbzuKV%2fQ8teCtJOgg%3d&docid=2\\_141ed302ed8e94c089eb9696b28929493&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=gxMYHUji12WV9D8o73K1RHoAvnjbzuKV%2fQ8teCtJOgg%3d&docid=2_141ed302ed8e94c089eb9696b28929493&rev=1)

## **Product Documentation Log**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=EVsa1Us45bG9CCllbkTWkMEUvVmEXm5wmI5GFd9yTy8%3d&docid=2\\_103ae1b8c83c342529ebf6ccc0a0efa0e&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=EVsa1Us45bG9CCllbkTWkMEUvVmEXm5wmI5GFd9yTy8%3d&docid=2_103ae1b8c83c342529ebf6ccc0a0efa0e&rev=1)

## **Product Testing Preparation Staff - Training Checklist**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=fKgy1n5kPEBMikLFd6KjY7cP2ti462%2b2wi04IZmcbvA%3d&docid=2\\_1b9d5135b75924e18b7a96e49645b8102&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=fKgy1n5kPEBMikLFd6KjY7cP2ti462%2b2wi04IZmcbvA%3d&docid=2_1b9d5135b75924e18b7a96e49645b8102&rev=1)

## **Field Return Checklist**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=bzAb0ozmyQZxYI6IBBp3aBI%2fnklkqH9NNxe4LNGTL8U%3d&docid=2\\_1335804d9f59d4e67883f95ed85e1c285&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=bzAb0ozmyQZxYI6IBBp3aBI%2fnklkqH9NNxe4LNGTL8U%3d&docid=2_1335804d9f59d4e67883f95ed85e1c285&rev=1)



### **Outgoing Sample Checklist**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=p1y52qSrVEi7InZvBYXoFdPWAm14keHShxCXiDjeAOM%3d&docid=2\\_1d780eab9e78845e991104cbf97dab281&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=p1y52qSrVEi7InZvBYXoFdPWAm14keHShxCXiDjeAOM%3d&docid=2_1d780eab9e78845e991104cbf97dab281&rev=1)

### **Temporary Project Support Staff Training Checklist**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=acmOcSTRydo%2f17i2p7QbajlXgg9UTyw9z0H6NhdVF2c%3d&docid=2\\_1fc1a2583c5454d45a155bd1cef5b1096&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=acmOcSTRydo%2f17i2p7QbajlXgg9UTyw9z0H6NhdVF2c%3d&docid=2_1fc1a2583c5454d45a155bd1cef5b1096&rev=1)

### **Exert from Ecology's Chemical Hygiene Plan Product Testing Preparation Staff Training Checklist**

[http://teams/sites/EAP/ToxicsStudiesUnit/\\_layouts/15/guestaccess.aspx?guestaccesstoken=7TJMY%2fHh13GJUxzJki4p9S5pMr6zQE%2foGhKemJd0SVo%3d&docid=2\\_19624bc5630f04605b15b234200a6ca36&rev=1](http://teams/sites/EAP/ToxicsStudiesUnit/_layouts/15/guestaccess.aspx?guestaccesstoken=7TJMY%2fHh13GJUxzJki4p9S5pMr6zQE%2foGhKemJd0SVo%3d&docid=2_19624bc5630f04605b15b234200a6ca36&rev=1)

## Appendix B. Product Testing Sample Processing Procedures and Tool Decontamination Procedures

Product Testing In House Product/Sample Processing Procedures							
Note: these are the minimum requirements, refer to Study QAPP							
Pre-screening							
Chemical or Chemical Group Name	Type of Pre-screening conducted	Glove change: Between product/component or when compromised	Type of Tool Cleaning for Screening: Standard ppm level or low level	Solvent type if additional rinse is required	Frequency of tool change: Use pre-cleaned tool between every product/component or May clean tool between samples w/ 24% ethanol or DI water.	Additional Requirements per QAPP (signage?) - DELETE from here - add to training	Comments
CSPA Metals, Parabens, Flame Retardants, Formaldehyde, D4, MEK, Styrene	XRF	When compromised	Standard ppm	---	May clean tool between samples w/ 24% ethanol or DI water.	---	---
Phthalates	XRF/FTIR	When compromised	Standard ppm	---	May clean tool between samples w/ 24% ethanol or DI water.	Acetone occasionally used during FTIR prescreening.	---
PCB - Low Level	XRF (optional)	Between product	Low level	Hexanes	Use pre-cleaned tool between every product/component	Pre-screened sample collected carefully to preserve untouched portion of the product for analytical analysis	---
Hg -Low level	XRF	Between product	Low level	10% Nitric Acid	May clean tool between samples with 24% ethanol or DI water. If limited sample amount use pre-cleaned tool between every product/component	Pre-screened sample collected carefully to preserve untouched portion of the product for analytical analysis	---
PFAS	N/A	N/A	N/A	N/A	N/A	---	---
Brake Pads	N/A	N/A	N/A	N/A	N/A	---	---

## Product Testing In House Product/Sample Processing Procedures

Note: these are the minimum requirements, refer to Study QAPP

### Sample Preparation

Chemical or Chemical Group Name	Glove change between: product/component or when compromised	Type of Tool Cleaning for Screening: Standard ppm level or low level	Solvent type if additional rinse is required	Frequency of tool change: Use pre-cleaned tool between every sample or May clean tool between samples w/ 24% ethanol or DI water.	Additional Requirements	Comments	Holding Temp.	Hold. Time
CSPA Metals, Parabens, Flame Retardants, D4, MEK, Styrene	Glove change between component	Standard ppm	None	May clean tool between samples w/ 24% ethanol or DI water.	No: smoking or hair/personal care products with target compounds. Some samples may require cryomilling.	All tools used are washed w/ Liquinox and rinsed with DI water at the beginning of the day	---	---
Formaldehyde	Glove change between component	Standard ppm	Ethanol	May clean tool between samples w/ 24% ethanol or DI water.	Do not size reduce samples that have the potential to volatilize. Place large chunk of sample in container and refrigerate. Analytical labs will process.	All tools used are washed w/ Liquinox and rinsed with DI water at the beginning of the day	N/A	N/A
Brake Pads	When compromised	Standard ppm	N/A	N/A	---	Wear gloves for PPE, not to avoid sample contamination. Handle brake pads as little as possible.	N/A	N/A

## Product Testing In House Product/Sample Processing Procedures

Note: these are the minimum requirements, refer to Study QAPP

### Sample Preparation

Chemical or Chemical Group Name	Glove change between: product/component or when compromised	Type of Tool Cleaning for Screening: Standard ppm level or low level	Solvent type if additional rinse is required	Frequency of tool change: Use pre-cleaned tool between every sample or May clean tool between samples w/ 24% ethanol or DI water.	Additional Requirements	Comments	Holding Temp.	Hold. Time
PCB - Low Level	Glove change between component	Low level	Hexanes	Use pre-cleaned tool between every sample	Send liquid samples in original unopened container, if possible, to lab for analysis.  Keep samples shielded from prolonged exposure to light.  Optional: keep processed samples at reduced temperature.	All tools used are washed with Liquinox and rinsed with DI water followed by a hexane rinse at beginning of day, keep covered until use. Use an untouched sample for lab analysis if undergoing optional screening.		---
PFAS – Low Level	Glove change between component	Low level	Methanol	Use pre-cleaned tool between every sample	Send liquid samples in original unopened container, if possible, to lab for analysis.	Wash all used tools with Liquinox. Rinse with tap water. At beginning of day, rinse with methanol. Cover until used.	Keep samples at room temp., shielded from light.	---

## Product Testing In House Product/Sample Processing Procedures

Note: these are the minimum requirements, refer to Study QAPP

### Sample Preparation

Chemical or Chemical Group Name	Glove change between: product/component or when compromised	Type of Tool Cleaning for Screening: Standard ppm level or low level	Solvent type if additional rinse is required	Frequency of tool change: Use pre-cleaned tool between every sample or May clean tool between samples w/ 24% ethanol or DI water.	Additional Requirements	Comments	Holding Temp.	Hold. Time
Hg -Low level	Glove change between component	Low level	10% Nitric Acid	Clean tool, change between every component	Do not size reduce samples that have the potential to volatilize. Place large chunk of sample in container and refrigerate. Analytical labs will process.	Do not use pre-screened sample to create laboratory sample. Use an untouched portion of the product.	---	---

#### Silver Shield Gloves Manufacture's Specification

Silver Shield Gloves provide excellent permeation protection against 280 hazardous chemicals and mixtures including acetone, benzene, epoxy, methanol, MEK, sodium hydroxide, sulfuric acid (93%), toluene, and trichloroethylene. Gloves feature a five-layer fabric compacted to a thickness of 2.7 mil. Laminating a high-energy polymer (EVOH) with a low-energy polymer (PE) creates a fabric impervious to at least 90% of all organic chemicals for four hours at 35° C. Each layer acts as a barrier against various epoxies and industrial chemicals

#### Nitrile Gloves Specification (8<sup>th</sup> edition Ansell Chemical Resistance Guide Permeation & Degradation Data)

Nitrile Gloves are good for methanol, hexane, and methyl alcohol (ethanol).

## Product Testing Tool Decontamination Procedures

Note: these are the minimum requirements, refer to Study QAPP

Chemical or Chemical Group Name	Type of Tool Cleaning for Screening: Standard ppm level or Low level	Solvent type if additional rinse is required	Hood use required	Required PPE's	Additional Requirements	Comments
CSPA Metals, Parabens, Flame Retardants, Formaldehyde, D4, MEK, Styrene	Standard ppm	NA	No	Safety glasses, gloves, and lab coat	No: smoking or hair/personal care products with target compounds	All tool used were decontaminated (wash w/ Liquinox, rinse with DI water) at the beginning of the day
PCB	Low level	Hexanes	Yes	Face shield, gloves, lab coat, and plastic apron	---	Decontaminate (Liquinox/DI water rinse/hexanes rinse) all tools at beginning of day, keep individually wrapped tools covered until use
Hg	Low level	10% Nitric Acid	No	Face shield, gloves, lab coat, and plastic apron	---	Do not use pre-screened sample to create laboratory sample. Use an untouched portion of the product.
PFAS	Low level	Methanol	Yes	Face shield, gloves, lab coat, and plastic apron	Use tap water for washing and making Liquinox diluted solution (No DI Water)	Decontaminate (Liquinox/tap water rinse/methanol rinse) all tools at beginning of day, keep individually wrapped tools covered until use