e-GGRT Webinar on Subparts L and OO Reporting - RY2015

U.S. Environmental Protection Agency

Greenhouse Gas Reporting Program (GHGRP)

March 1, 2016

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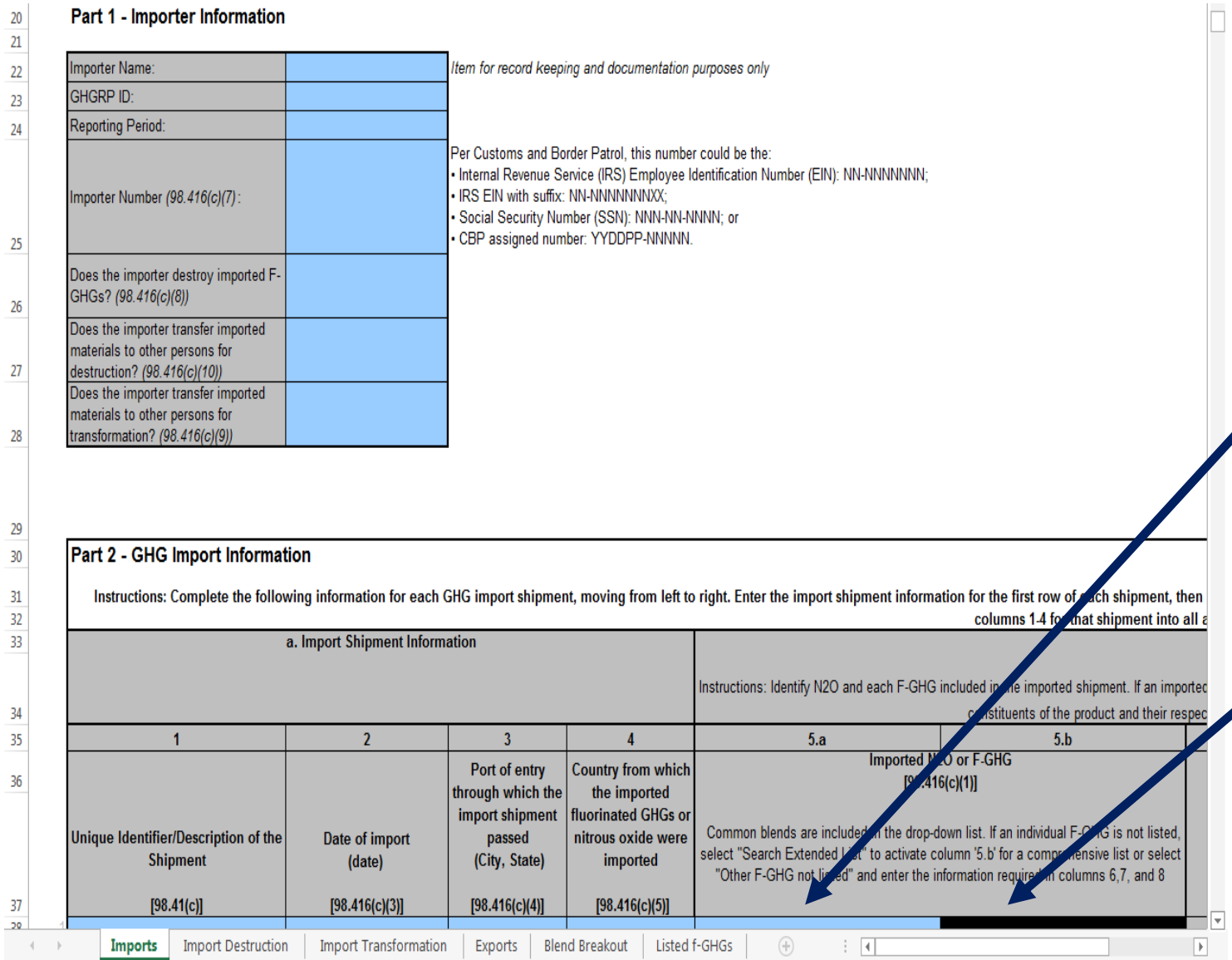
Webinar Outline / Overview

- New Format for Subpart OO Reports
- Subpart L reporting and verification for RY2015 and later years
  - Background
  - Filling out the Inputs Verifier Tool (IVT) Form (Excel spreadsheet)
  - Uploading the IVT Form to e-GGRT and completing reporting in e-GGRT

New Format for Subpart OO Reports

- Importer/Exporter form revised
  - Same information, format and look/feel
- Producer form revised
  - Moved various sections to different tabs
  - Expanded allowable entries to avoid need to submit multiple forms for a single facility
- Summary by compound will be calculated by e-GGRT.
  - No need to enter unless there is an error in our calculations

Import/Export Form: Same Info & Tabs



Part 1 - Importer Information

Importer Name:	
GHGRP ID:	
Reporting Period:	
Importer Number *(98.416(c)(7))*:	
Does the importer destroy imported F-GHGs? *(98.416(c)(8))*	
Does the importer transfer imported materials to other persons for destruction? *(98.416(c)(10))*	
Does the importer transfer imported materials to other persons for transformation? *(98.416(c)(9))*	

Item for record keeping and documentation purposes only

Per Customs and Border Patrol, this number could be the:
- Internal Revenue Service (IRS) Employee Identification Number (EIN): NN-NNNNNNN;
- IRS EIN with suffix: NN-NNNNNNNXX;
- Social Security Number (SSN): NNN-NN-NNNN; or
- CBP assigned number: YYDDPP-NNNNN.

Part 2 - GHG Import Information

Instructions: Complete the following information for each GHG import shipment, moving from left to right. Enter the import shipment information for the first row of each shipment, then columns 1-4 for that shipment into all a

a. Import Shipment Information				Instructions: Identify N2O and each F-GHG included in the imported shipment. If an imported constituents of the product and their respec	
1	2	3	4	5.a	5.b
Unique Identifier/Description of the Shipment [98.41(c)]	Date of import (date) [98.416(c)(3)]	Port of entry through which the import shipment passed (City, State) [98.416(c)(4)]	Country from which the imported fluorinated GHGs or nitrous oxide were imported [98.416(c)(5)]	Imported N2O or F-GHG [98.416(c)(1)] Common blends are included in the drop-down list. If an individual F-GHG is not listed, select "Search Extended List" to activate column '5.b' for a comprehensive list or select "Other F-GHG not listed" and enter the information required in columns 6,7, and 8	

Imports | Import Destruction | Import Transformation | Exports | Blend Breakout | Listed f-GHGs

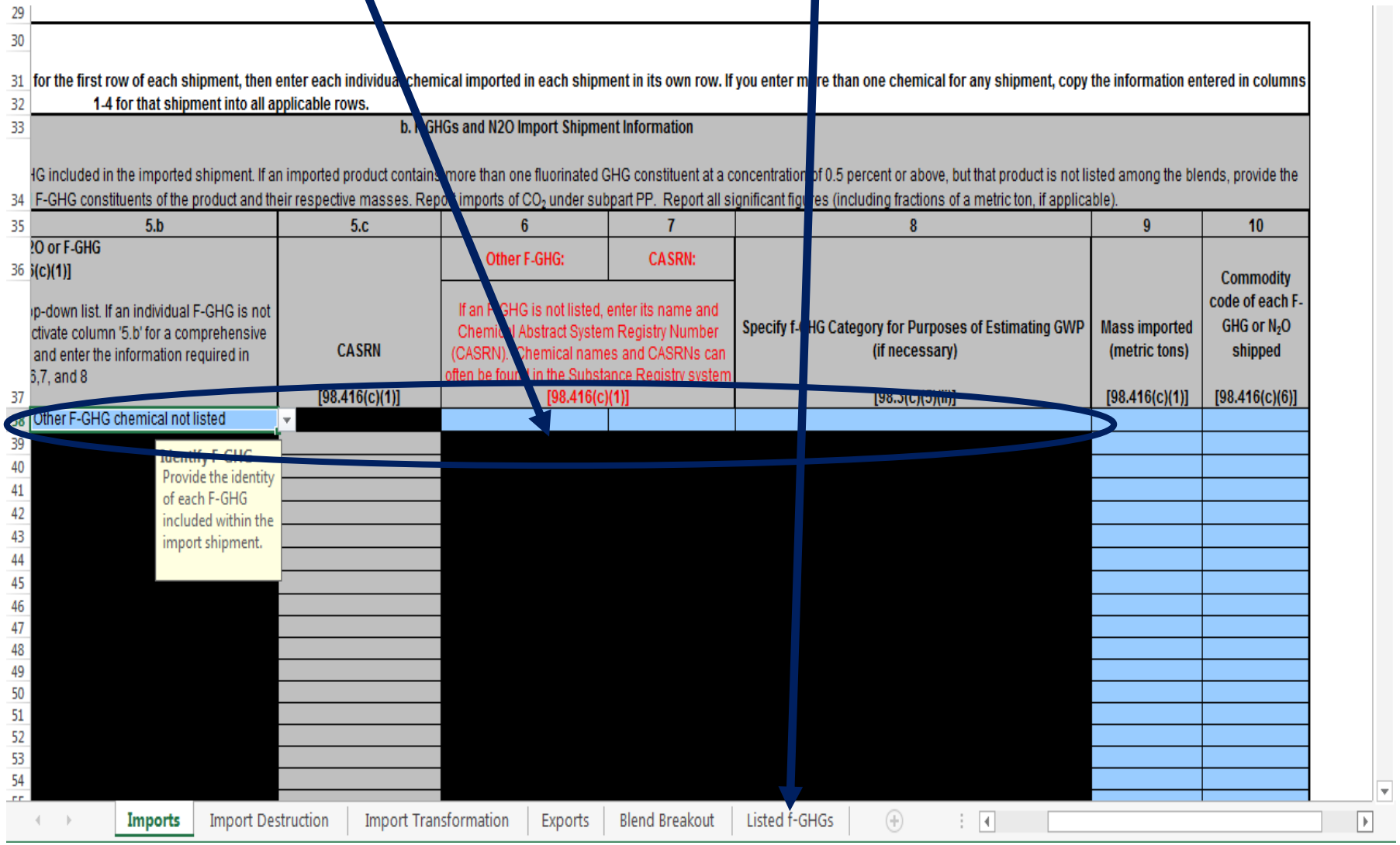
N_2O and common F-GHGs here

Additional F-GHGs here

Import/Exports Form

Or one not included in our list here

Use this tab to find what's on our lists



for the first row of each shipment, then enter each individual chemical imported in each shipment in its own row. If you enter more than one chemical for any shipment, copy the information entered in columns 1-4 for that shipment into all applicable rows.

b. F-GHGs and N2O Import Shipment Information

HG included in the imported shipment. If an imported product contains more than one fluorinated GHG constituent at a concentration of 0.5 percent or above, but that product is not listed among the blends, provide the F-GHG constituents of the product and their respective masses. Report imports of CO_2 under subpart PP. Report all significant figures (including fractions of a metric ton, if applicable).

5.b	5.c	6	7	8	9	10
O or F-GHG (c)(1)]		Other F-GHG:	CASRN:			
p-down list. If an individual F-GHG is not ctivate column '5.b' for a comprehensive and enter the information required in 6,7, and 8	CASRN	If an F-GHG is not listed, enter its name and Chemical Abstract System Registry Number (CASRN). Chemical names and CASRNs can often be found in the Substance Registry system		Specify f-GHG Category for Purposes of Estimating GWP (if necessary)	Mass imported (metric tons)	Commodity code of each F-GHG or N_2O shipped
	[98.416(c)(1)]	[98.416(c)(1)]		[98.5(c)(5)(iii)]	[98.416(c)(1)]	[98.416(c)(6)]
Other F-GHG chemical not listed						

Identify F-GHG
Provide the identity of each F-GHG included within the import shipment.

Imports | Import Destruction | Import Transformation | Exports | Blend Breakout | Listed f-GHGs

Listed f-GHGs Tab

	A	B	C	D
1	**Listing of f-GHGs for Use in Subpart OO Producers Form**			
2	The following f-GHGs are listed only by name in the f-GHG pick lists on the preceding tabs. The f-GHGs below are presented in the same order as in the pick lists. **Use Ctrl+F to search this list by name or CASRN.** Once you have identified the f-GHG please note the f-GHG name used in this Inputs Form and its location within the pick list so that you can more easily locate it in the pick lists.			
3			Position Indicators	
4	Chemical Name	CASRN	Extended List	Short List
5	Nitrous Oxide	10024-97-2	1 of 198	1 of 35
6	Sulfur hexafluoride	2551-62-4	2 of 198	2 of 35
7	Trifluoromethyl sulphur pentafluoride	373-80-8	3 of 198	
8	Nitrogen trifluoride	7783-54-2	4 of 198	3 of 35
9	PFC-14 (Perfluoromethane)	75-73-0	5 of 198	4 of 35
10	PFC-116 (Perfluoroethane)	76-16-4	6 of 198	5 of 35
11	PFC-218 (Perfluoropropane)	76-19-7	7 of 198	6 of 35
12	Perfluorocyclopropane	931-91-9	8 of 198	
13	PFC-3-1-10 (Perfluorobutane)	355-25-9	9 of 198	
14	Perfluorocyclobutane	115-25-3	10 of 198	7 of 35
15	PFC-4-1-12 (Perfluoropentane)	678-26-2	11 of 198	8 of 35
16	PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	12 of 198	9 of 35
17	PFC-6-1-12	335-57-9	13 of 198	10 of 35
18	PFC-7-1-18	307-34-6	14 of 198	
19	PFC-9-1-18	306-94-5	15 of 198	11 of 35
20	PFPMIE (HT-70)	69991-67-9 (b)	16 of 198	12 of 35
21	Perfluorodecalin (cis)	60433-11-6	17 of 198	
22	Perfluorodecalin (trans)	60433-12-7	18 of 198	
23	Octafluorotetrahydrofuran	773-14-8	19 of 198	
24	FC-3283/FC-8270 (Perfluorotripropylamine)	338-83-0	20 of 198	
25	FC-3284 (Perfluoromethylmorpholine)	382-28-5	21 of 198	
26	FC-40/FC-43 (Perfluorotributylamine (PTBA))	1064698-37-8	22 of 198	
27	FC-770 (Perfluoroisopropylmorpholine)	1093615-61-2	23 of 198	
28	HT-55	69991-67-9 (a)	24 of 198	
29	HT-90	69991-67-9 (c)	25 of 198	
30	HT-110	69991-67-9 (d)	26 of 198	

Search by CAS # or name. Find position on short or long list.

Same feature is also on the Producer Form.

Subpart OO Reporting Page

SUBPART OO SUMMARY INFORMATION FOR THIS FACILITY

Subpart OO: View Validation

1.) DOWNLOAD FORM

Subpart OO GHG Reporting

2.) UPLOAD COMPLETED FORM

Browse... No file selected. UPLOAD

Uploaded File Name	Attached By	Date	Delete
Subpart OO Reporting Form for Producers For RY2015 for snaps.xlsx	M Huppert	February 19, 2016	✖

PRODUCER SUMMARY

F-GHG or N_2O	CASRN	Production (mton/yr)	Onsite Transformation (mton/yr)	Onsite Destruction (mton/yr)	Offsite Destruction (mton/yr)	Net Supply[1] (mton/yr)
Perfluorocyclobutane	115-25-3	10				10
Perfluoropropionyl fluoride	422-61-7	20				20
3-(4-fluorophenyl)--2-Methylpropanoyl chloride	1017183-70-8	30			10	30

[1] Producer Net Supply is based on Production - Onsite Transformation - Onsite Destruction + Offsite Destruction where destroyed f-GHG was "removed as byproduct or other waste and shipped offsite for destruction"

IMPORTER-EXPORTER SUMMARY

F-GHG or N_2O	CASRN	Imports (mton/yr)	Destruction (mton/yr)	Exports (mton/yr)	Net Supply[2] (mton/yr)
No data found.					

[2] Import/Exporter Net Supply is based on Imports - Exports - Destruction where the importer/exporter owns/operates the destruction facility AND the destruction is not reported in another facilitys report

Facility Overview

e-GGRT will extract data from form and calculate summary. No need to enter data separately.

Producer Form: Reorganized

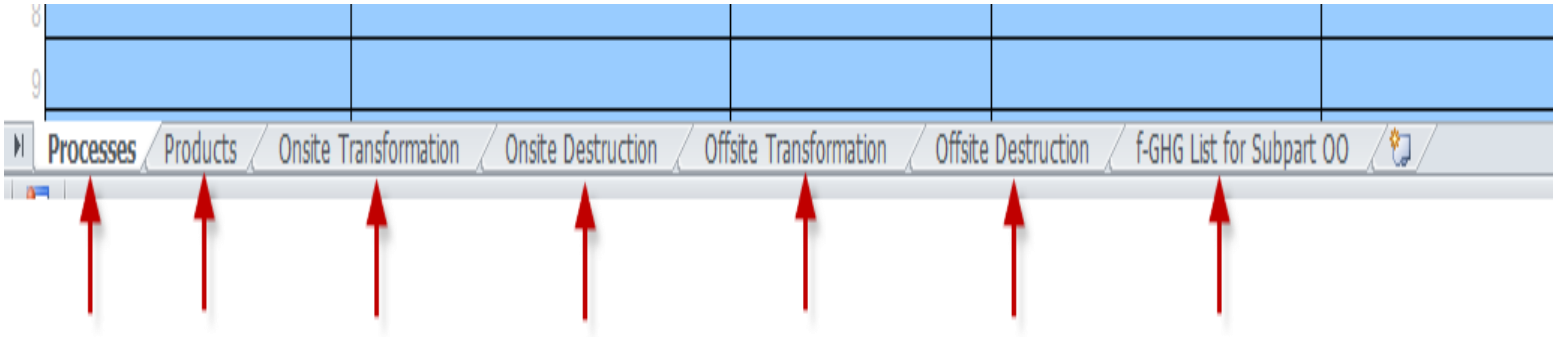
Part 1 - Facility Information

Instructions: Complete the following facility information.

Facility Name:	
GHGRP ID:	
Reporting Period:	

Part 2 - Production/Transformation Process Information

Instructions: Identify and describe each production/transformation process at the production facility. Each identifier entered in Column B must be unique. These identifiers will be referenced again on the Products tab when you enter product information.



Data entry separated by tabs.

Processes Tab

Part 2 - Production/Transformation Process Information

Instructions: Identify and describe each production/transformation process at the production facility. Each identifier entered in Column B must be unique. These identifiers will be referenced again on the Products tab when you enter product information.

	Unique Identifier [98.416(a)]	Is the unique identifier associated with a production process, a transformation process or both?	Description (optional) [98.416(a)]	Does the process produce F-GHGs and/or N_2O? [98.416(a)(1)]	Does the process transform a F-GHG and/or N_2O produced at an off-site location? [98.416(a)(2)]
1	Process Name Here		tional	Yes	Yes
2		Production Process			
3		Transformation Process			
		Both Production and Transforma n Process			

Choice here will populate Products and Onsite Transformation pull-down lists

Products Tab

Part 2a - Production Process Information

Instructions: Identify each F-GHG and N2O produced by the process. Report the production of blend components, but not the production of blend applicable).

	Unique Production Process Identifier [98.416(a)]	F-GHG Produced F-GHG If not listed, select "Search Extended List" to activate column 'D' for a comprehensive list or select "Other F-GHG not listed" and enter the information required in columns 'G' and 'H'. If the process produces two or more F-GHGs simultaneously, and their concentrations in the product exceed 0.1 percent by weight, list the individual F-GHG constituents of the product in order of declining concentrations in the product [98.416(a)(1)]	CASRN:
1	Process Name	Perfluorocyclobutane	115-25-3
2	Process Name	Perfluorocyclobutane PFC-4-1-12 (Perfluoropentane) PFC-5-1-14 (Perfluorohexane, FC 72) PFC-6-1-12 PFC-9-1-18 PFPMIE (HT-70) HFC-23 HFC-32	ner F-GHG chemical not listed
3	Process Name		ner F-GHG chemical not listed
4			

Other information is the same…

Onsite Transformation & Onsite Destruction

Part 2b - Transformation Process Information

Instructions: Identify each F-GHG and N2O transformed by the process. Do not include isolated intermediates that are produced and transformed at the same facility. Report all significant figures (including fractions of a metri

Unique Transformation Process Identifier [98.416(a)]	F-GHG	CASRN:	Other F-GHG:	CASRN:	Spe
	Included F-GHG or N_2O (if not listed, select "Search Extended List" to activate column 'D' for a comprehensive list or select "Other F-GHG not listed" and enter the information required in columns 'G' and 'H') [98.416(a)(2)]		If a F-GHG chemical is not listed, search the Substance Registry system by name and/or Chemical Abstracts Service registry number (CASRN) and enter chemical here. If a F-GHG constituent cannot be found via SRS search, add the F-GHG by entering its name and, if available, CASRN [98.416(a)(1)]		
1					
2					
3					
4					
5					
6					
7					
8					
9					

Processes | Products | Onsite Transformation | Onsite Destruction | Offsite Transformation | Offsite Destruction | f-GHG List for Subpart OO

Similar process for these forms

Part 3 - On-Site Destruction Information

Instructions: Identify each F-GHG that was previously produced (as defined at 98.410(b), at any facility) and that was destroyed at your facility. For example, this may include quantities that are shipped to your facility by another facility for destruction and quantities that are returned to your facility for reclamation but are found to be irretrievably contaminated. Report all significant figures (including fractions of a metric ton, if applicable).

Does your facility destroy F-GHGs? [98.416(a)(3)]	

Use this box to indicate if you destroy on-site. If so, fill out the table below.

F-GHG	CASRN	Other F-GHG:	CASRN:	Sp
Previously produced F-GHG that was destroyed at the facility (if not listed, select "Search Extended List" to activate column 'C' for a comprehensive list or select "Other F-GHG not listed" and enter the information required in columns 'F' and 'G') [98.416(a)(3)]		If a F-GHG chemical is not listed, search the Substance Registry system by name and/or Chemical Abstracts Service registry number (CASRN) and enter chemical here. If a F-GHG constituent cannot be found via SRS search, add the F-GHG by entering its name and, if available, CASRN [98.416(a)(1)]		
1				
2				
3				

Offsite Transformation & Offsite Destruction

Part 5a - Off-Site Destruction Facility Information

Instructions: Provide the following information for each facility to which any F-GHGs were sent for destruction per 98.416(a)(15):

	Facility Name	Is the Facility US based?	US Street Address	US City	US State	US 5-Digit Zip Cod
1						
2						
3						
4						
5						
6						

	non-US Street Address	non-US City	non-US Province	non-US Postal Code	non-US Country

Part 5b - Off-Site Destruction Facility Shipment Information

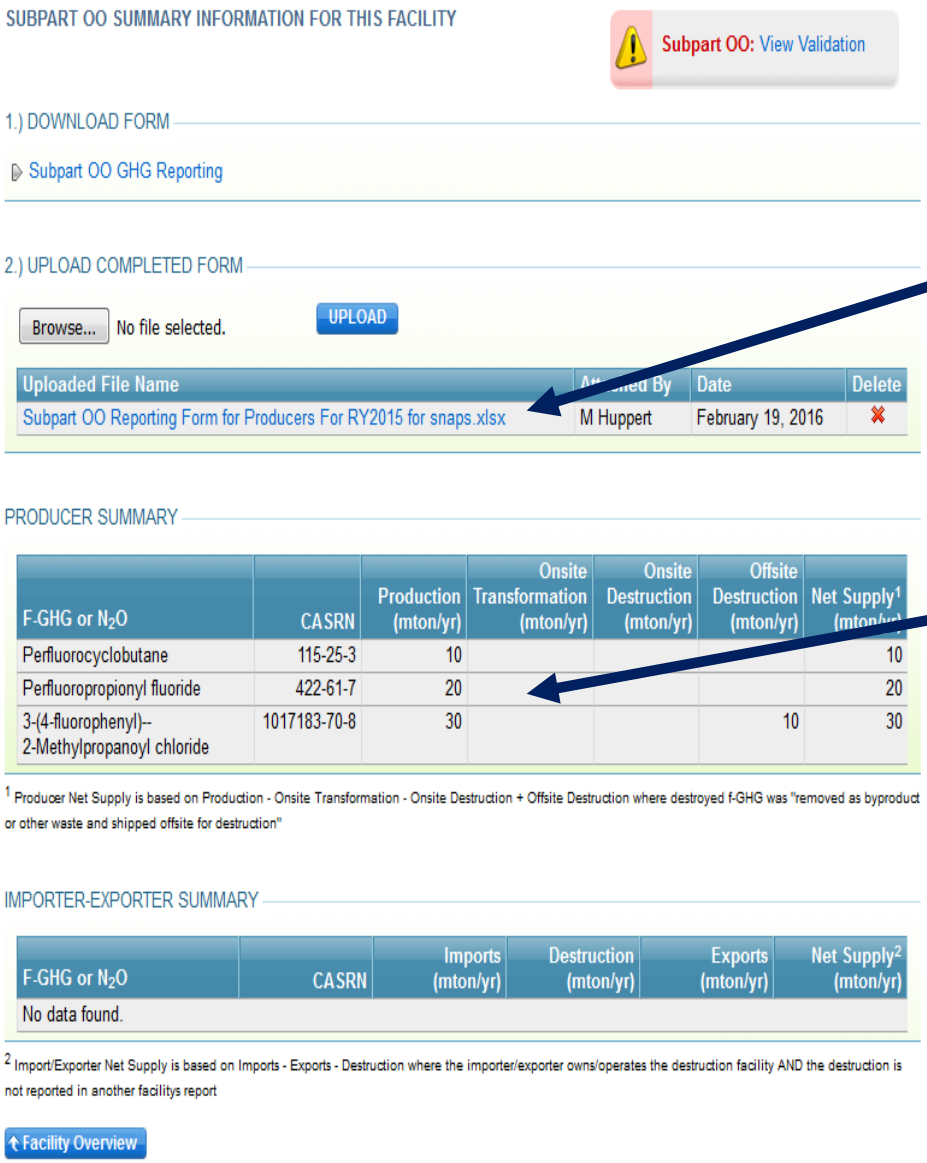
Instructions: Provide the following information for N_2O or each F-GHG produced that was sent to the facility for destruction.
Report all significant figures (including fractions of a metric ton, if applicable).

	Facility Name [98.416(a)(15)]	F-GHG: F-GHG that is sent to another facility for destruction, except those removed as by-products or other waste (if not listed, select "Search Extended List" to activate column 'D' for a comprehensive list or select "Other F-GHG not listed" and enter the information required in columns 'G' and 'H') [98.416(a)(3)]	CASRN	Other F-GHG: If a F-GHG chemical is not listed, search the Substance Registry system by name and/or Chemical Abstracts Service registry number (CASRN) and enter chemical here. If a F-GHG constituent cannot be found via SRS search, add the F-GHG by entering its name and, if available, CASRN [98.416(a)(1)]	CASRN:	Specify f-GHG Category for Purposes of Estimating GWP (if necessary) [98.3(c)(5)(ii)]
1						
2						

Quantity of the F-GHG sent to that facility for destruction, except those removed as by-products or other waste (metric tons) [98.416(a)(15)]	Was this F-GHG removed from a production process as a BYPRODUCT or OTHER WASTE? [98.416(a)(6) and (a)(7)]	Was the mass determined using a missing data procedure? [98.416(a)(16)]	Mass determined using the missing data procedure (metric tons) [98.416(a)(16)]	Number of hours that a missing data procedure was used to measure the mass fed into the destruction device [98.416(a)(16)]	Reason a missing data procedure was used [98.416(a)(16)]	Method used to estimate the missing data [98.416(a)(16)]	Specify the "Other" measurement method used to determine mass (if applicable) [98.416(a)(16)]

Note two tables for each tab (Parts 4a & 4b, Parts 5a & 5b).

Subpart OO Reporting Page



SUBPART OO SUMMARY INFORMATION FOR THIS FACILITY

Subpart OO: View Validation

1.) DOWNLOAD FORM

Subpart OO GHG Reporting

2.) UPLOAD COMPLETED FORM

Browse... No file selected. UPLOAD

Uploaded File Name	Attached By	Date	Delete
Subpart OO Reporting Form for Producers For RY2015 for snaps.xlsx	M Huppert	February 19, 2016	✖

PRODUCER SUMMARY

F-GHG or N_2O	CASRN	Production (mton/yr)	Onsite Transformation (mton/yr)	Onsite Destruction (mton/yr)	Offsite Destruction (mton/yr)	Net Supply[1] (mton/yr)
Perfluorocyclobutane	115-25-3	10				10
Perfluoropropionyl fluoride	422-61-7	20				20
3-(4-fluorophenyl)--2-Methylpropanoyl chloride	1017183-70-8	30			10	30

[1] Producer Net Supply is based on Production - Onsite Transformation - Onsite Destruction + Offsite Destruction where destroyed f-GHG was "removed as byproduct or other waste and shipped offsite for destruction"

IMPORTER-EXPORTER SUMMARY

F-GHG or N_2O	CASRN	Imports (mton/yr)	Destruction (mton/yr)	Exports (mton/yr)	Net Supply[2] (mton/yr)
No data found.					

[2] Import/Exporter Net Supply is based on Imports - Exports - Destruction where the importer/exporter owns/operates the destruction facility AND the destruction is not reported in another facilitys report

Facility Overview

All information should fit on a single form

Reminder: e-GGRT will extract data from form and calculate summary. No need to enter data separately.

Subpart OO Forms: Questions?

- Any questions on the new subpart OO forms?

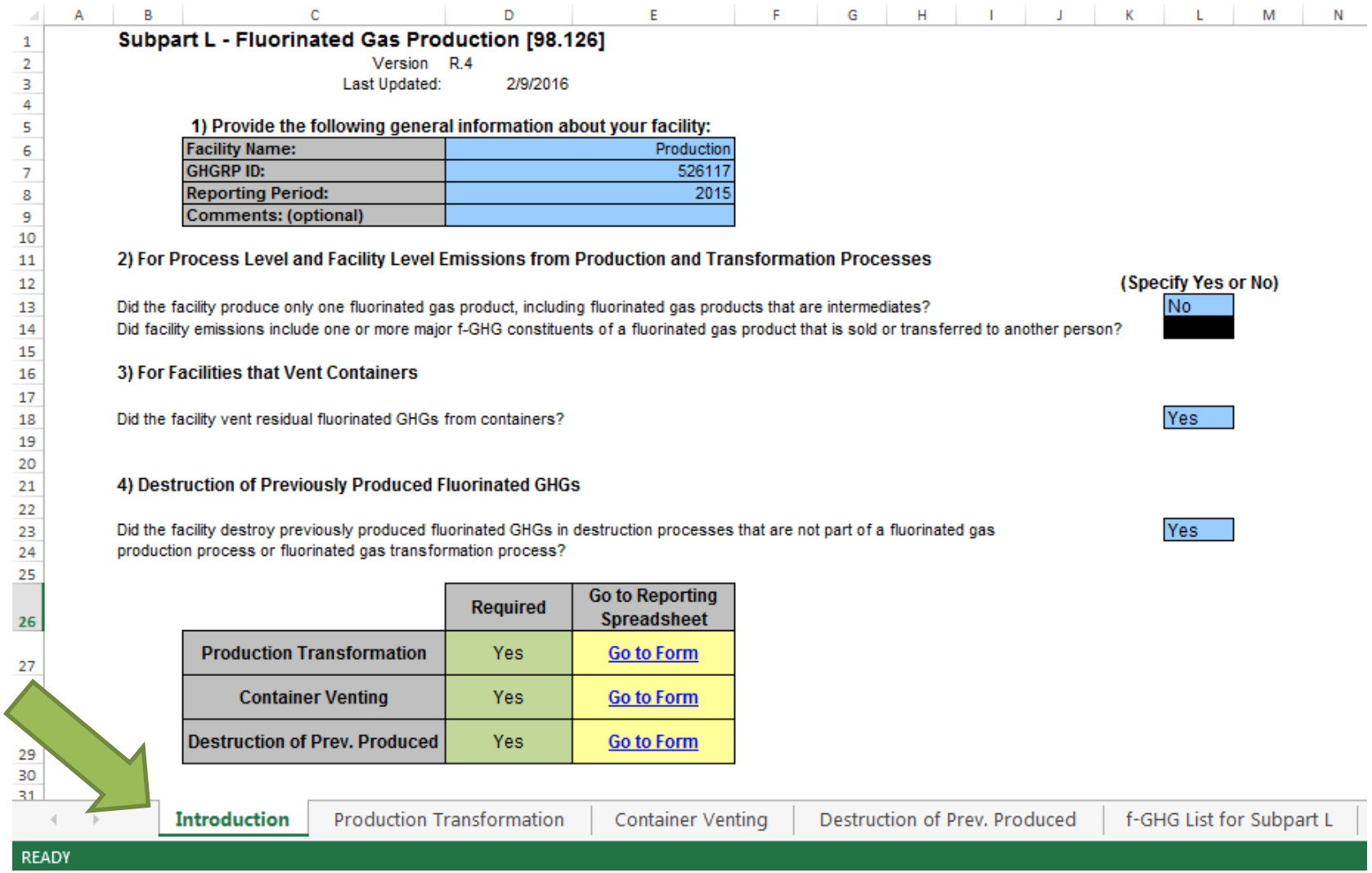
Subpart L: Background

- In December 2014, EPA amended the reporting requirements of subpart L, Fluorinated Gas Production.
  - Included requirement that reporters must use an EPA-provided electronic Inputs Verifier Tool (IVT) to calculate GHGs for RY 2015 and later years.
  - See §98.127(l) – *Verification software records*

Inputs Verifier Tool: General Background

- The Inputs Verifier Tool (IVT) is deployed within e-GGRT and is used as part of the annual reporting process for many subparts.
- Reporters enter the inputs to emission equations into the IVT Form. For subpart L, reporters enter data into an Excel form.
- The subpart L IVT form is temporarily "uploaded." IVT uses the entered data to calculate the equation results and to conduct electronic verification checks on the entered inputs to emission equations. Reportable quantities (elements required in §98.126) are stored.
- IVT generates a verification summary that informs the EPA about the verification results without specifying the entered inputs to emission equations.
- IVT does not retain the entered inputs to emission equations.
- IVT generates a file for the reporter listing the inputs to equations entered into IVT; reporters must maintain as a record for 5 years.
  - Recommend you also keep the Excel file for resubmissions, etc.

Demonstration of IVT Form for Subpart L



Subpart L - Fluorinated Gas Production [98.126]

Version R.4
Last Updated: 2/9/2016

1) Provide the following general information about your facility:

Facility Name:	Production
GHGRP ID:	526117
Reporting Period:	2015
Comments: (optional)	

2) For Process Level and Facility Level Emissions from Production and Transformation Processes

(Specify Yes or No)

Did the facility produce only one fluorinated gas product, including fluorinated gas products that are intermediates? No

Did facility emissions include one or more major f-GHG constituents of a fluorinated gas product that is sold or transferred to another person?

3) For Facilities that Vent Containers

Did the facility vent residual fluorinated GHGs from containers? Yes

4) Destruction of Previously Produced Fluorinated GHGs

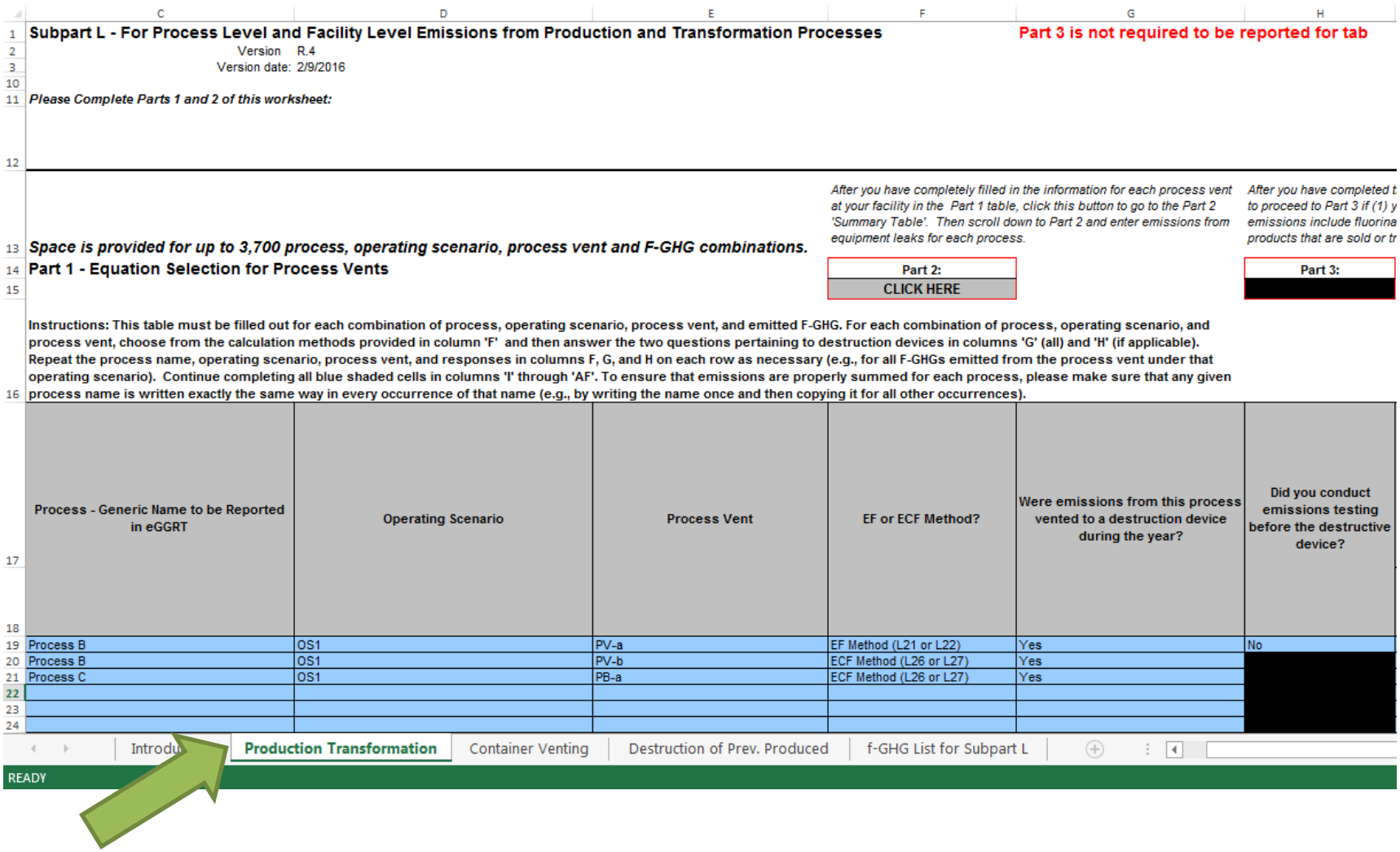
Did the facility destroy previously produced fluorinated GHGs in destruction processes that are not part of a fluorinated gas production process or fluorinated gas transformation process? Yes

	Required	Go to Reporting Spreadsheet
Production Transformation	Yes	Go to Form
Container Venting	Yes	Go to Form
Destruction of Prev. Produced	Yes	Go to Form

Introduction | Production Transformation | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L



Subpart L - For Process Level and Facility Level Emissions from Production and Transformation Processes

Part 3 is not required to be reported for tab

Version R.4
Version date: 2/9/2016

Please Complete Parts 1 and 2 of this worksheet:

After you have completely filled in the information for each process vent at your facility in the Part 1 table, click this button to go to the Part 2 'Summary Table'. Then scroll down to Part 2 and enter emissions from equipment leaks for each process.

Part 2: CLICK HERE

After you have completed t to proceed to Part 3 if (1) y emissions include fluorina products that are sold or tr

Part 3:

Space is provided for up to 3,700 process, operating scenario, process vent and F-GHG combinations.

Part 1 - Equation Selection for Process Vents

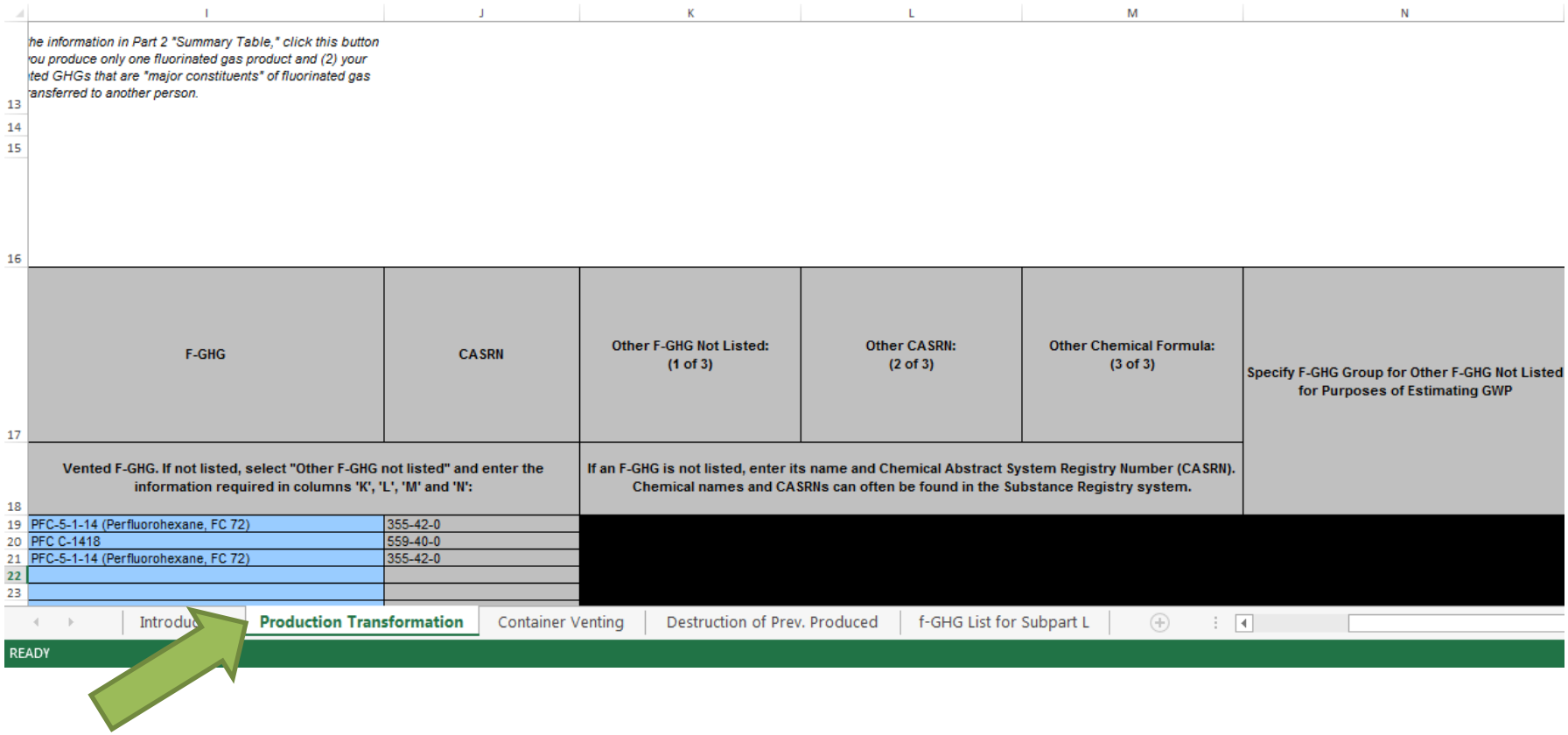
Instructions: This table must be filled out for each combination of process, operating scenario, process vent, and emitted F-GHG. For each combination of process, operating scenario, and process vent, choose from the calculation methods provided in column 'F' and then answer the two questions pertaining to destruction devices in columns 'G' (all) and 'H' (if applicable). Repeat the process name, operating scenario, process vent, and responses in columns F, G, and H on each row as necessary (e.g., for all F-GHGs emitted from the process vent under that operating scenario). Continue completing all blue shaded cells in columns 'I' through 'AF'. To ensure that emissions are properly summed for each process, please make sure that any given process name is written exactly the same way in every occurrence of that name (e.g., by writing the name once and then copying it for all other occurrences).

Process - Generic Name to be Reported in eGGRT	Operating Scenario	Process Vent	EF or ECF Method?	Were emissions from this process vented to a destruction device during the year?	Did you conduct emissions testing before the destructive device?
Process B	OS1	PV-a	EF Method (L21 or L22)	Yes	No
Process B	OS1	PV-b	ECF Method (L26 or L27)	Yes	
Process C	OS1	PB-a	ECF Method (L26 or L27)	Yes	

Introdu | Production Transformation | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L



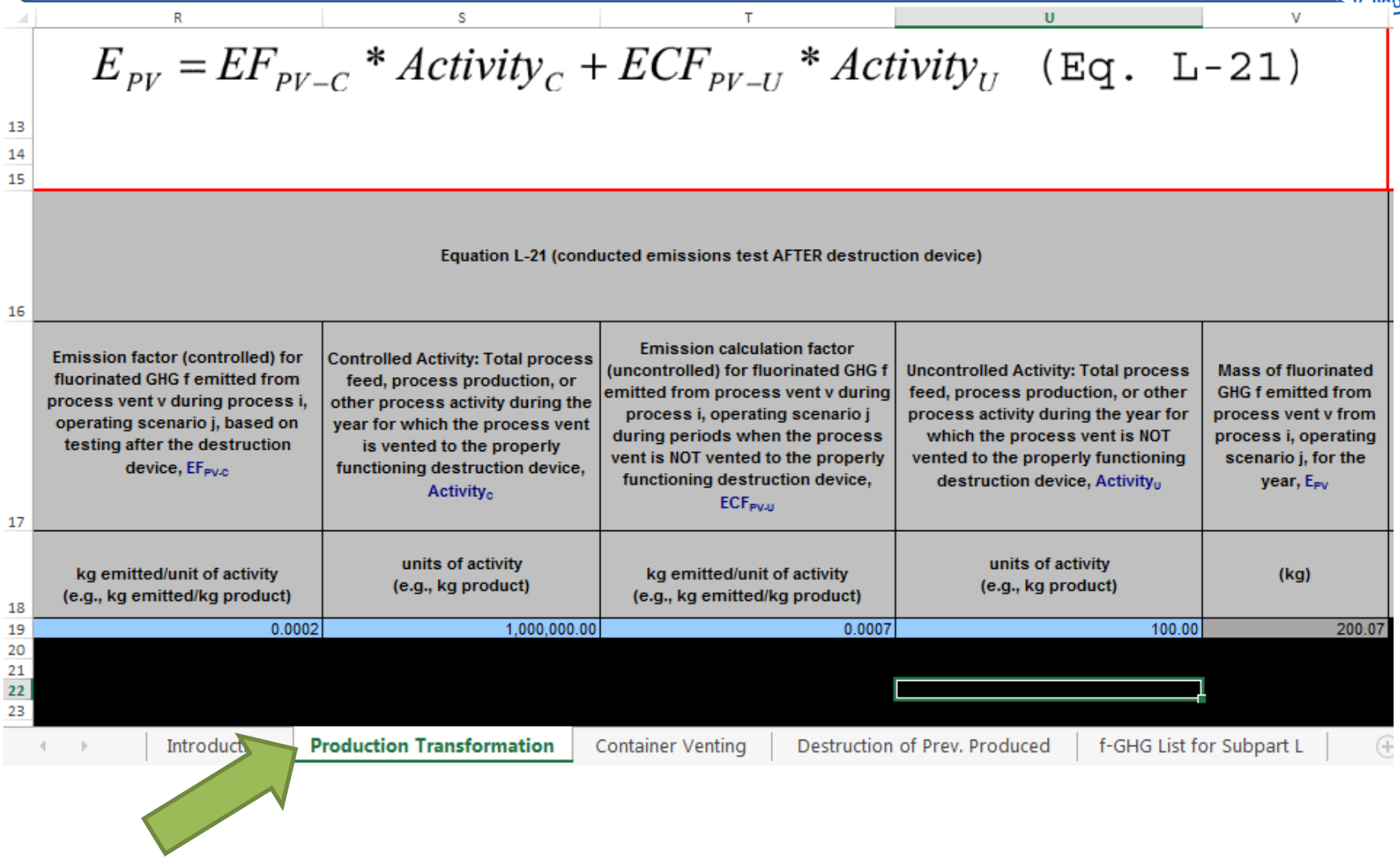
he information in Part 2 "Summary Table," click this button
ou produce only one fluorinated gas product and (2) your
ted GHGs that are "major constituents" of fluorinated gas
ansferred to another person.

F-GHG	CASRN	Other F-GHG Not Listed: (1 of 3)	Other CASRN: (2 of 3)	Other Chemical Formula: (3 of 3)	Specify F-GHG Group for Other F-GHG Not Listed for Purposes of Estimating GWP
Vented F-GHG. If not listed, select "Other F-GHG not listed" and enter the information required in columns 'K', 'L', 'M' and 'N':		If an F-GHG is not listed, enter its name and Chemical Abstract System Registry Number (CASRN). Chemical names and CASRNs can often be found in the Substance Registry system.			
PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0				
PFC C-1418	559-40-0				
PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0				

Introdu | Production Transformation | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L

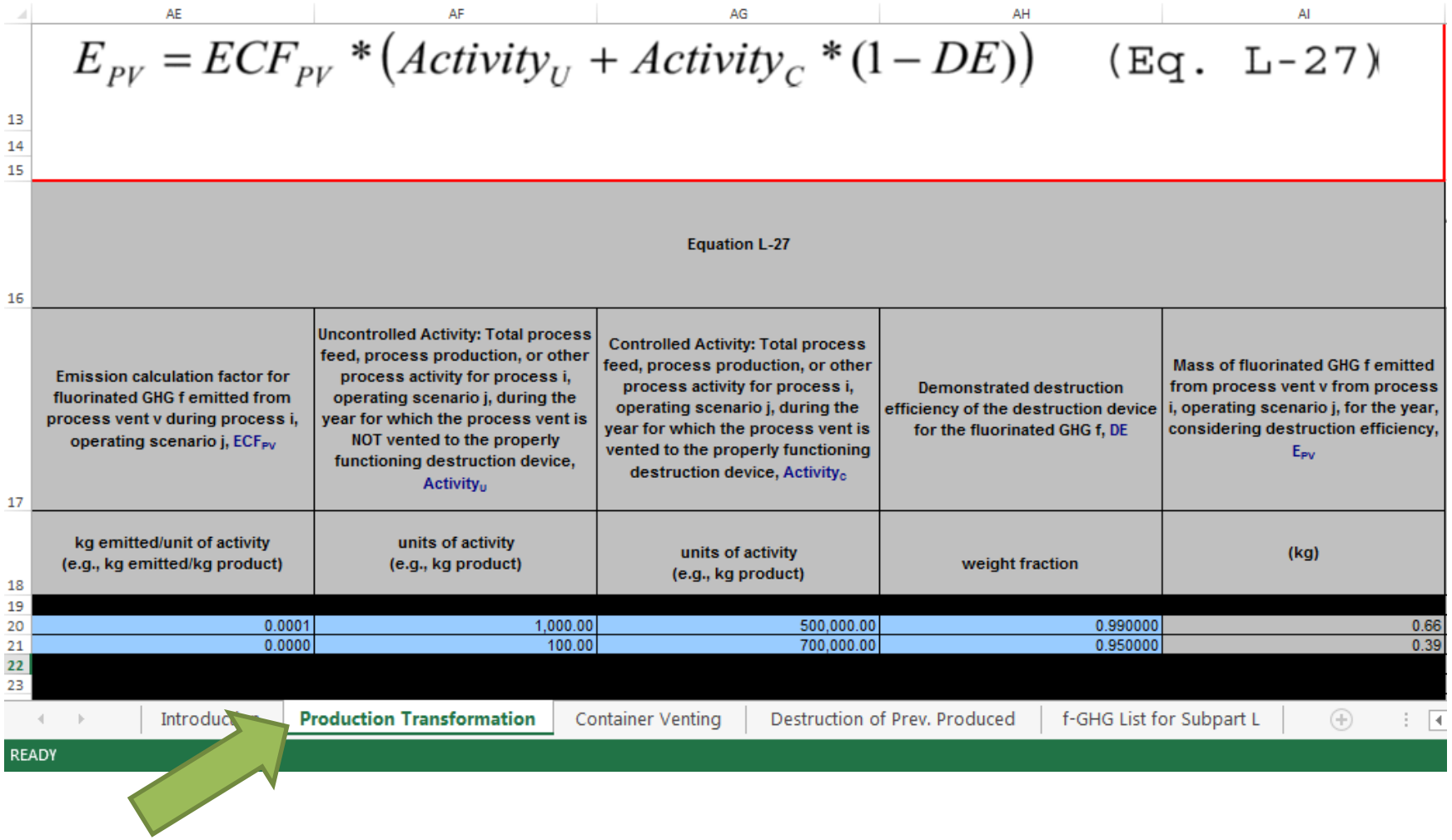


$$E_{PV} = EF_{PV-C} * Activity_C + ECF_{PV-U} * Activity_U \quad (Eq.\ L\text{-}21)$$

Equation L-21 (conducted emissions test AFTER destruction device)				
Emission factor (controlled) for fluorinated GHG f emitted from process vent v during process i, operating scenario j, based on testing after the destruction device, EF_{PV-C}	Controlled Activity: Total process feed, process production, or other process activity during the year for which the process vent is vented to the properly functioning destruction device, $Activity_C$	Emission calculation factor (uncontrolled) for fluorinated GHG f emitted from process vent v during process i, operating scenario j during periods when the process vent is NOT vented to the properly functioning destruction device, ECF_{PV-U}	Uncontrolled Activity: Total process feed, process production, or other process activity during the year for which the process vent is NOT vented to the properly functioning destruction device, $Activity_U$	Mass of fluorinated GHG f emitted from process vent v from process i, operating scenario j, for the year, E_{PV}
kg emitted/unit of activity (e.g., kg emitted/kg product)	units of activity (e.g., kg product)	kg emitted/unit of activity (e.g., kg emitted/kg product)	units of activity (e.g., kg product)	(kg)
0.0002	1,000,000.00	0.0007	100.00	200.07

Introduct | **Production Transformation** | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

Demonstration of IVT Form for Subpart L



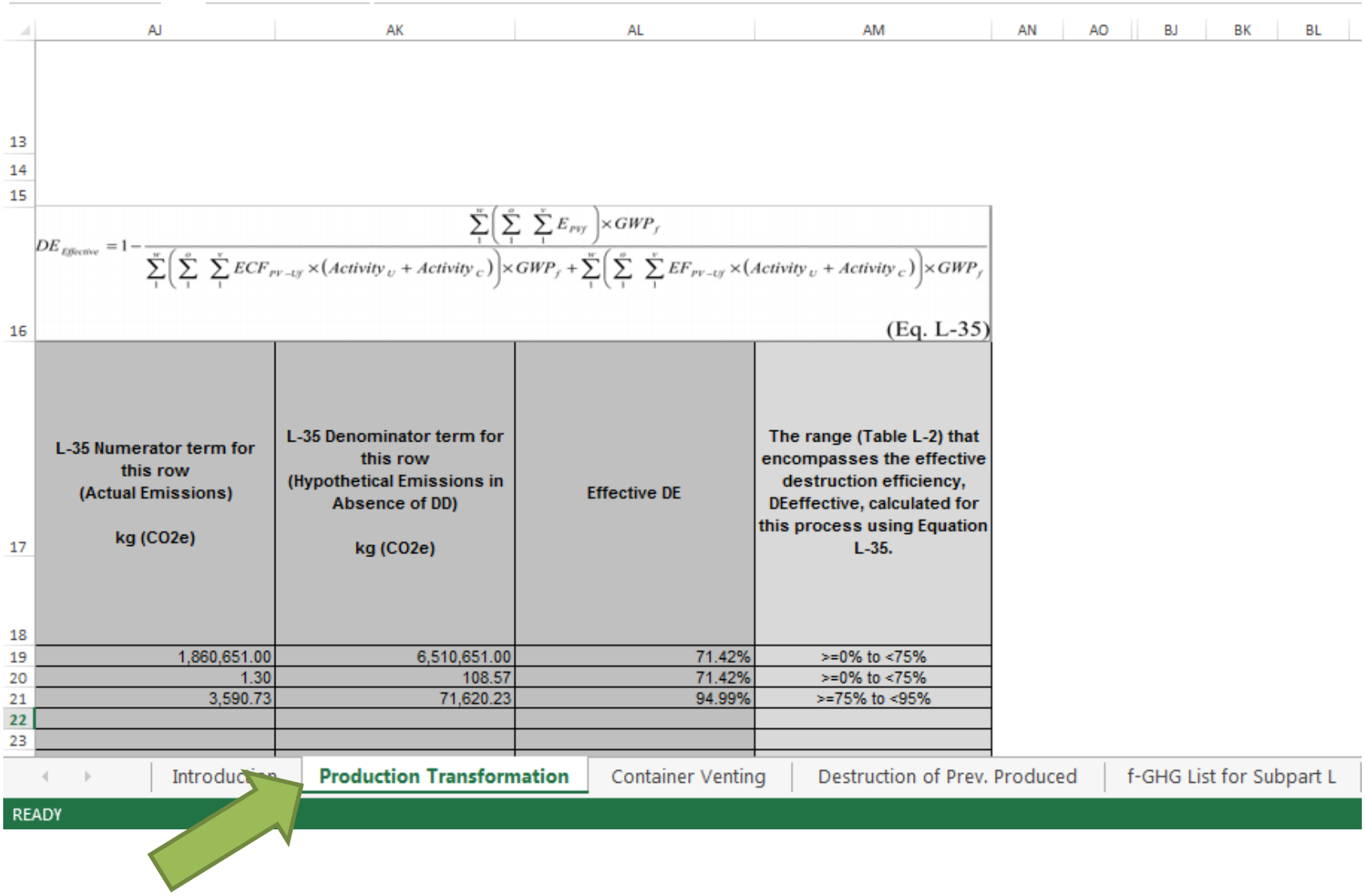
$$E_{PV} = ECF_{PV} * \left(Activity_U + Activity_C * (1 - DE)\right) \quad \text{(Eq. L-27)}$$

Equation L-27				
Emission calculation factor for fluorinated GHG f emitted from process vent v during process i, operating scenario j, ECF_{PV}	Uncontrolled Activity: Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is NOT vented to the properly functioning destruction device, $Activity_U$	Controlled Activity: Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is vented to the properly functioning destruction device, $Activity_C$	Demonstrated destruction efficiency of the destruction device for the fluorinated GHG f, DE	Mass of fluorinated GHG f emitted from process vent v from process i, operating scenario j, for the year, considering destruction efficiency, E_{PV}
kg emitted/unit of activity (e.g., kg emitted/kg product)	units of activity (e.g., kg product)	units of activity (e.g., kg product)	weight fraction	(kg)
0.0001	1,000.00	500,000.00	0.990000	0.66
0.0000	100.00	700,000.00	0.950000	0.39

Introduc… | Production Transformation | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L



$$DE_{Effective} = 1 - \frac{\sum_{1}^{w}\left(\sum_{1}^{a}\sum_{1}^{v} E_{PYf}\right) \times GWP_f}{\sum_{1}^{w}\left(\sum_{1}^{a}\sum_{1}^{v} ECF_{PY-Uf} \times (Activity_U + Activity_C)\right) \times GWP_f + \sum_{1}^{w}\left(\sum_{1}^{a}\sum_{1}^{v} EF_{PY-Uf} \times (Activity_U + Activity_C)\right) \times GWP_f}$$

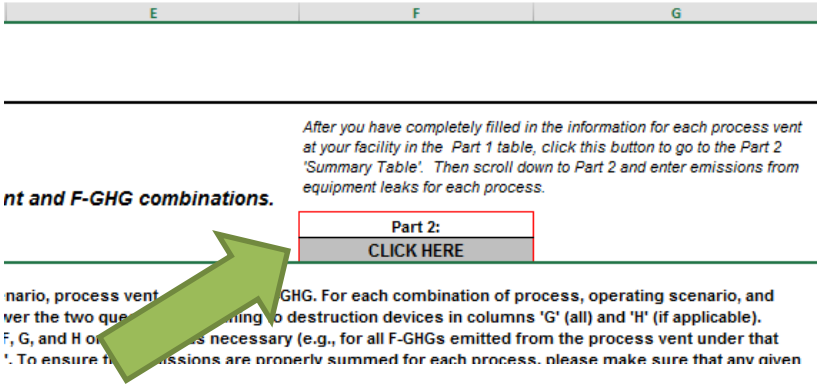
(Eq. L-35)

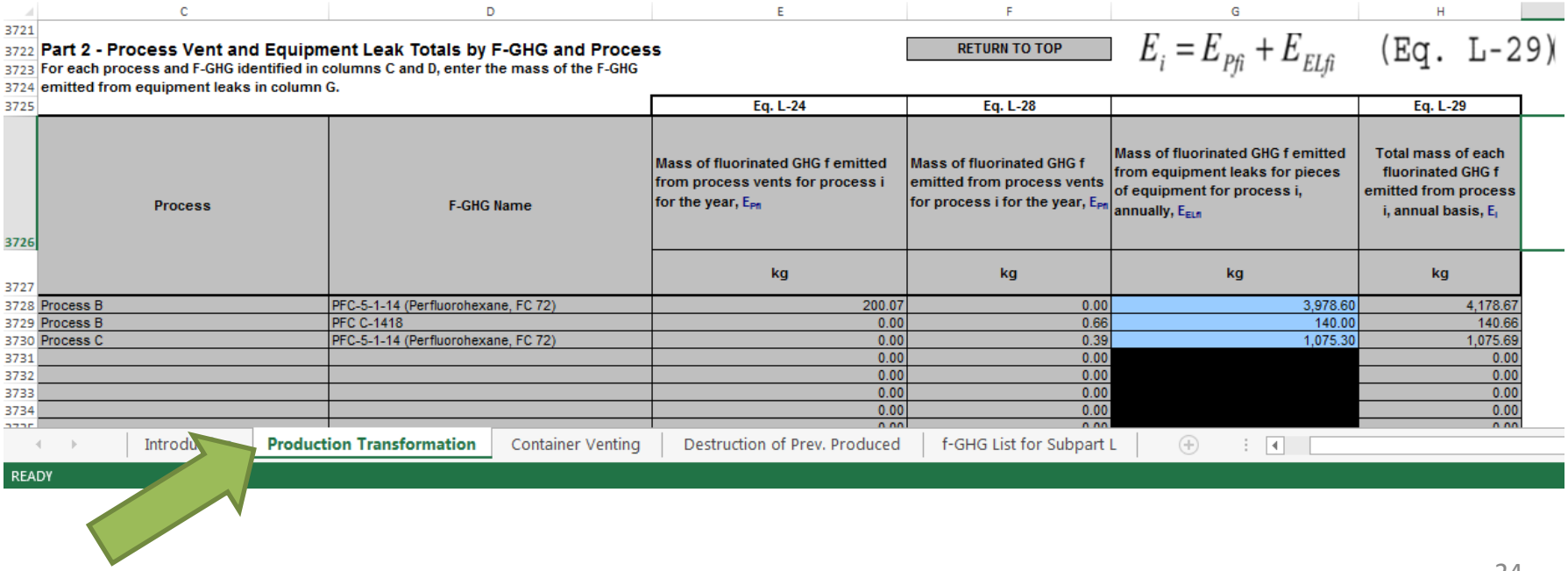
L-35 Numerator term for this row (Actual Emissions) kg (CO2e)	L-35 Denominator term for this row (Hypothetical Emissions in Absence of DD) kg (CO2e)	Effective DE	The range (Table L-2) that encompasses the effective destruction efficiency, DEeffective, calculated for this process using Equation L-35.
1,860,651.00	6,510,651.00	71.42%	>=0% to <75%
1.30	108.57	71.42%	>=0% to <75%
3,590.73	71,620.23	94.99%	>=75% to <95%

Introduction | **Production Transformation** | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

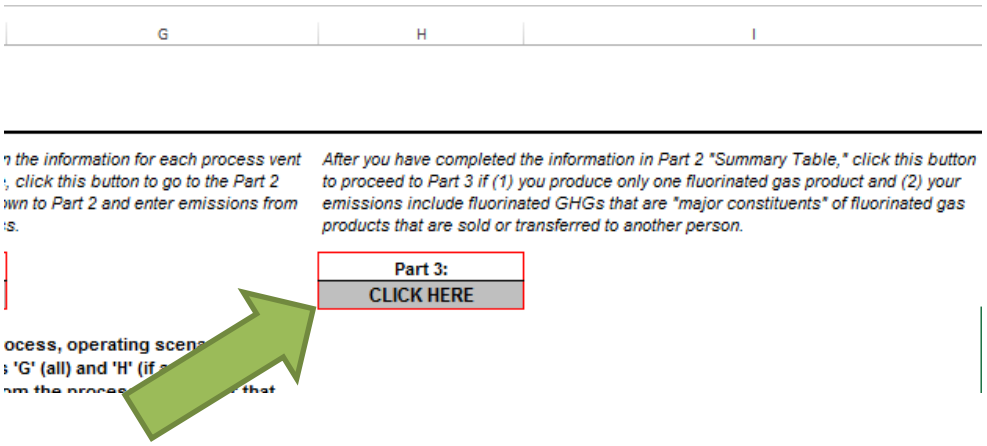
READY

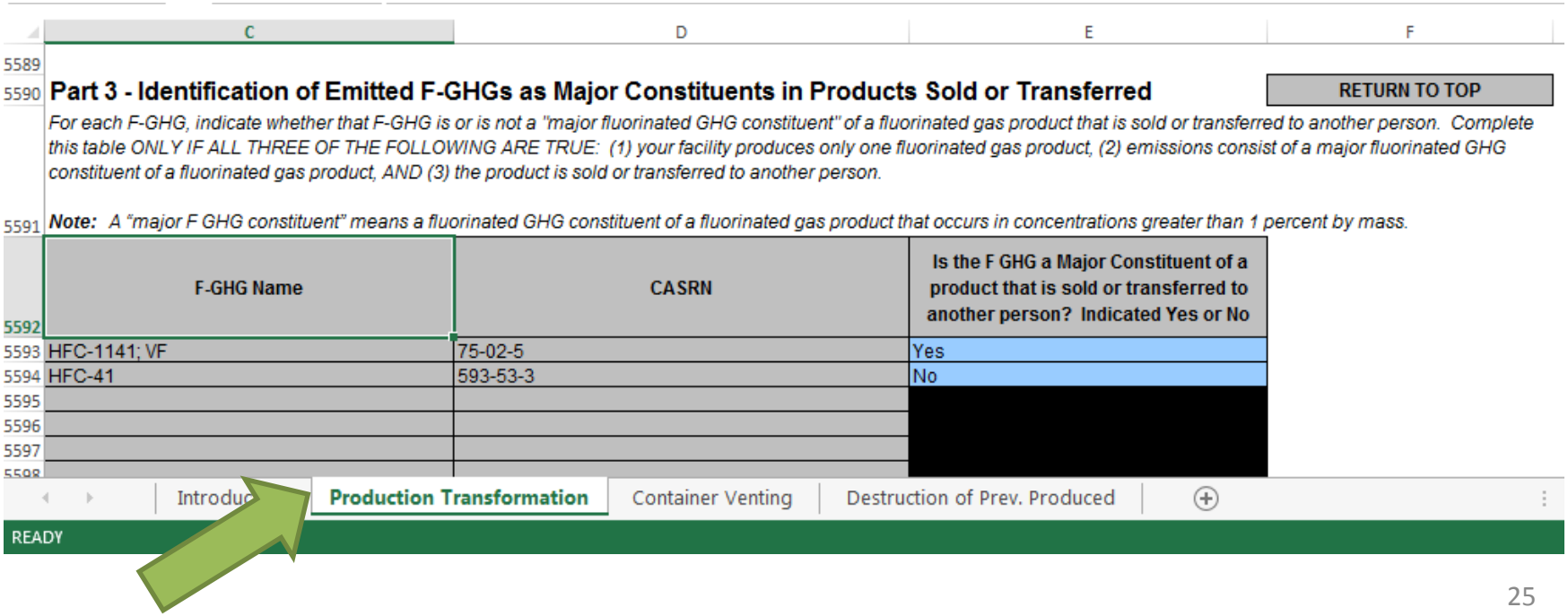
Demonstration of IVT Form for Subpart L



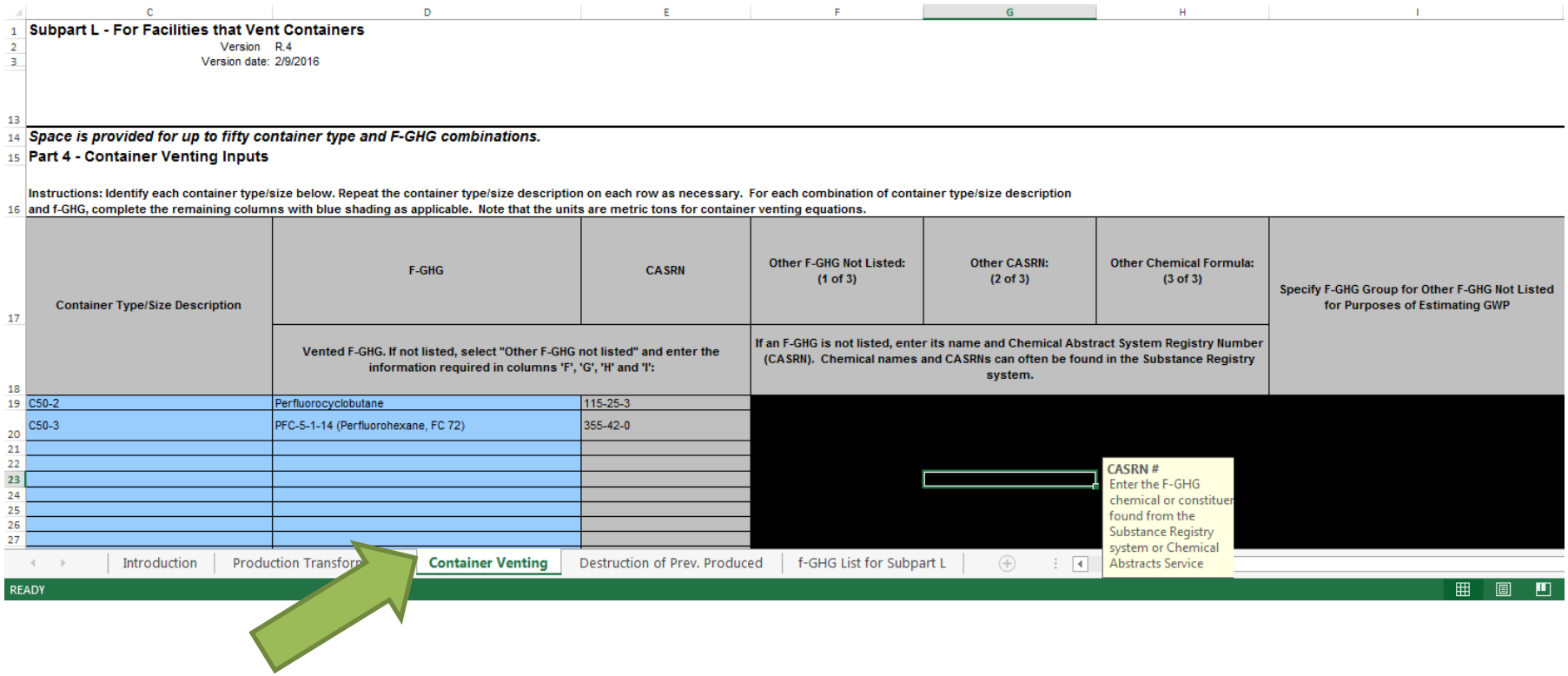


Demonstration of IVT Form for Subpart L





Demonstration of IVT Form for Subpart L



Subpart L - For Facilities that Vent Containers

Version R.4
Version date: 2/9/2016

Space is provided for up to fifty container type and F-GHG combinations.

Part 4 - Container Venting Inputs

Instructions: Identify each container type/size below. Repeat the container type/size description on each row as necessary. For each combination of container type/size description and f-GHG, complete the remaining columns with blue shading as applicable. Note that the units are metric tons for container venting equations.

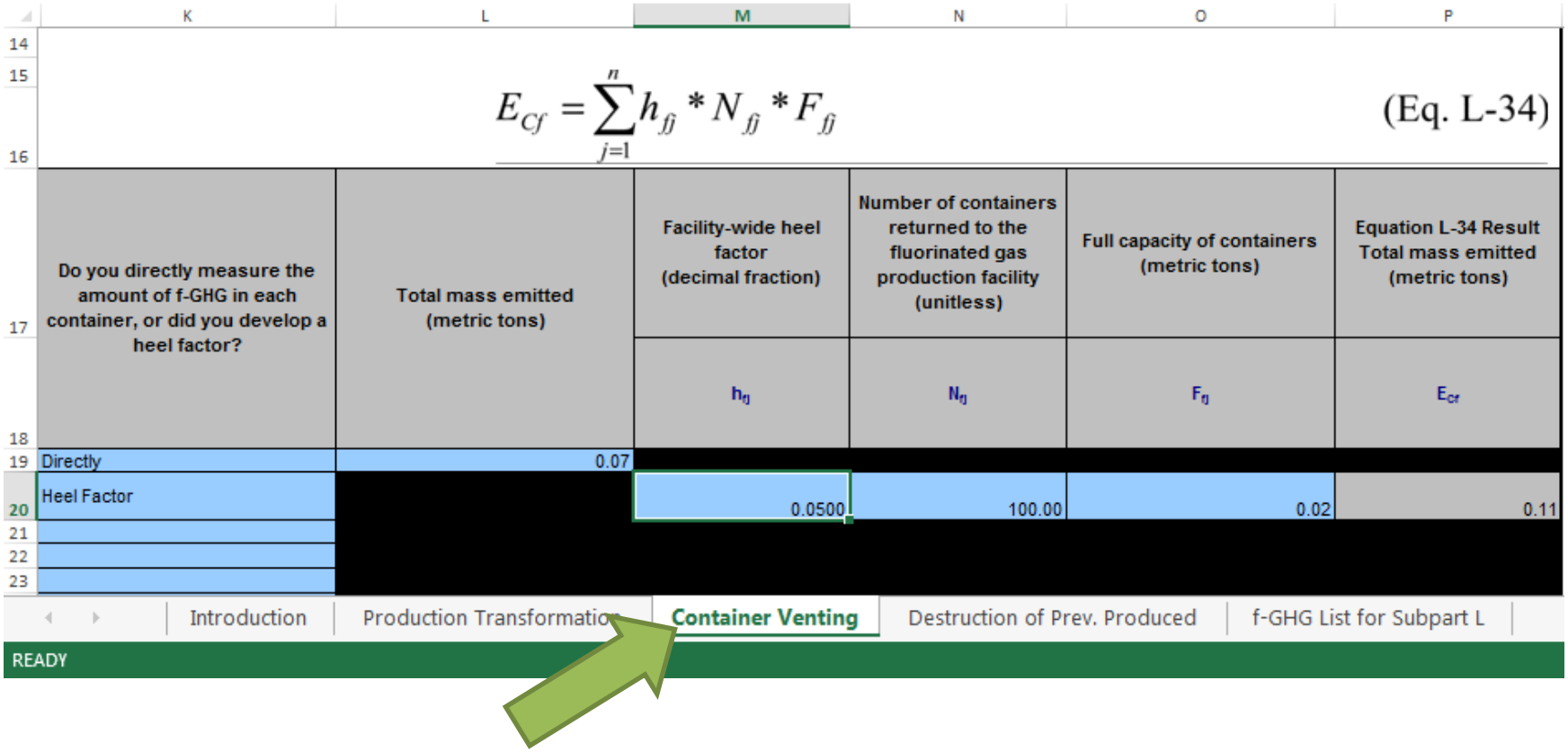
Container Type/Size Description	F-GHG	CASRN	Other F-GHG Not Listed: (1 of 3)	Other CASRN: (2 of 3)	Other Chemical Formula: (3 of 3)	Specify F-GHG Group for Other F-GHG Not Listed for Purposes of Estimating GWP
	Vented F-GHG. If not listed, select "Other F-GHG not listed" and enter the information required in columns 'F', 'G', 'H' and 'I':		If an F-GHG is not listed, enter its name and Chemical Abstract System Registry Number (CASRN). Chemical names and CASRNs can often be found in the Substance Registry system.			
C50-2	Perfluorocyclobutane	115-25-3				
C50-3	PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0				

CASRN #
Enter the F-GHG chemical or constituent found from the Substance Registry system or Chemical Abstracts Service

Introduction | Production Transform | Container Venting | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L



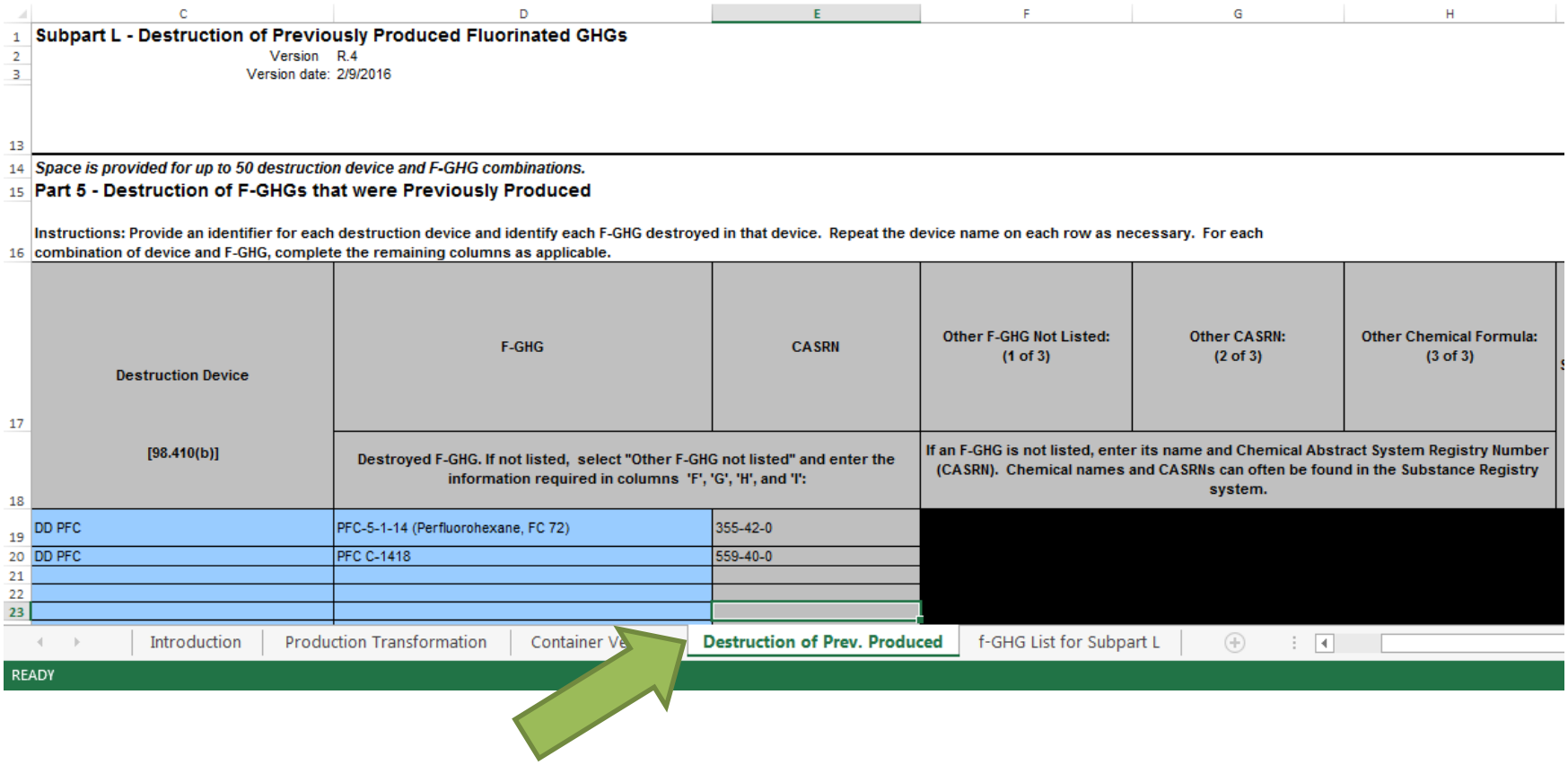
$$E_{Cf} = \sum_{j=1}^{n} h_{fj} * N_{fj} * F_{fj} \qquad \text{(Eq. L-34)}$$

Do you directly measure the amount of f-GHG in each container, or did you develop a heel factor?	Total mass emitted (metric tons)	Facility-wide heel factor (decimal fraction)	Number of containers returned to the fluorinated gas production facility (unitless)	Full capacity of containers (metric tons)	Equation L-34 Result Total mass emitted (metric tons)
		h_{fj}	N_{fj}	F_{fj}	E_{Cf}
Directly	0.07				
Heel Factor		0.0500	100.00	0.02	0.11

Introduction | Production Transformation | **Container Venting** | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L



Subpart L - Destruction of Previously Produced Fluorinated GHGs

Version R.4
Version date: 2/9/2016

Space is provided for up to 50 destruction device and F-GHG combinations.

Part 5 - Destruction of F-GHGs that were Previously Produced

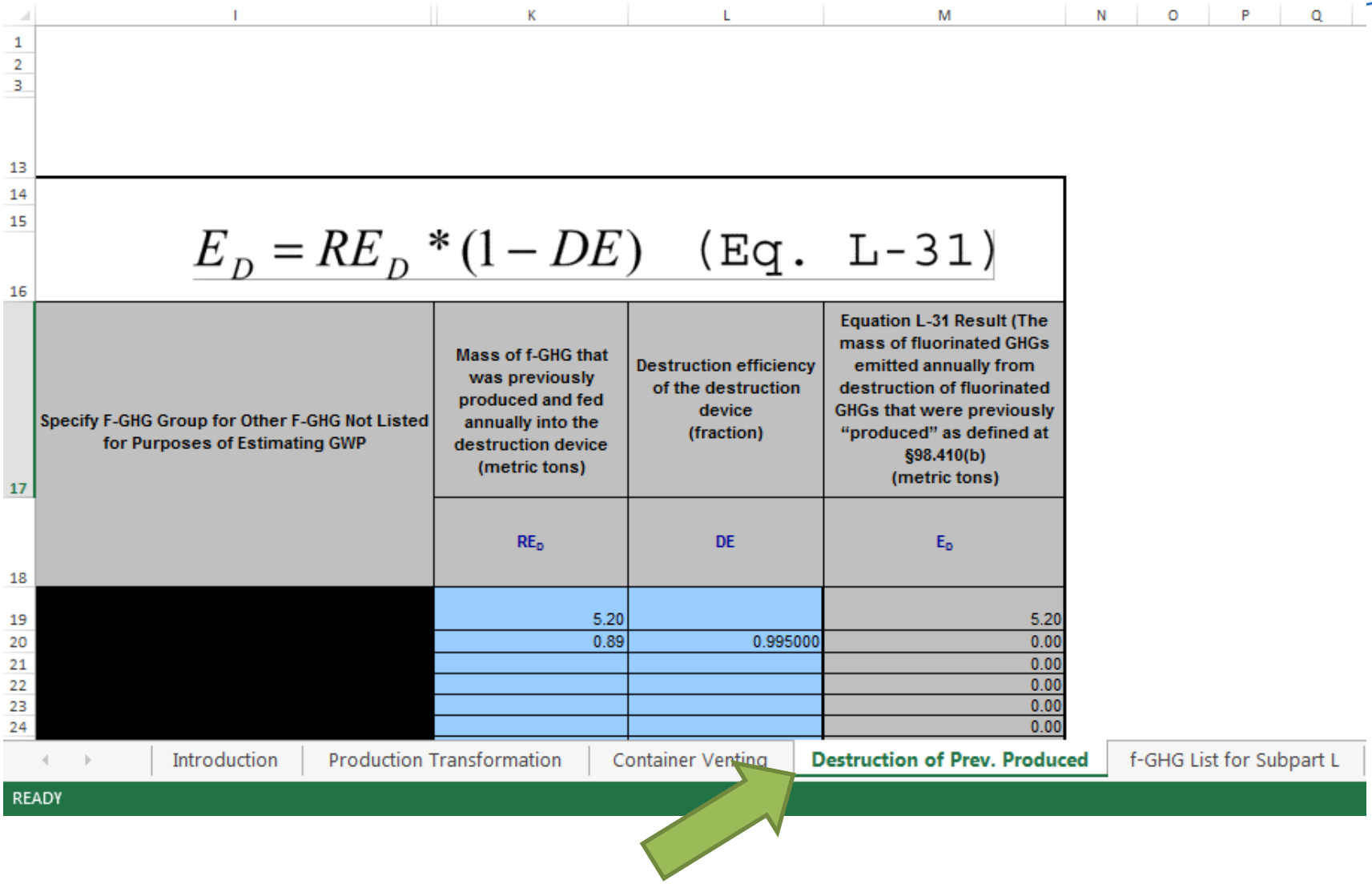
Instructions: Provide an identifier for each destruction device and identify each F-GHG destroyed in that device. Repeat the device name on each row as necessary. For each combination of device and F-GHG, complete the remaining columns as applicable.

Destruction Device	F-GHG	CASRN	Other F-GHG Not Listed: (1 of 3)	Other CASRN: (2 of 3)	Other Chemical Formula: (3 of 3)
[98.410(b)]	Destroyed F-GHG. If not listed, select "Other F-GHG not listed" and enter the information required in columns 'F', 'G', 'H', and 'I':		If an F-GHG is not listed, enter its name and Chemical Abstract System Registry Number (CASRN). Chemical names and CASRNs can often be found in the Substance Registry system.		
DD PFC	PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0			
DD PFC	PFC C-1418	559-40-0			

Introduction | Production Transformation | Container Ve | Destruction of Prev. Produced | f-GHG List for Subpart L

READY

Demonstration of IVT Form for Subpart L



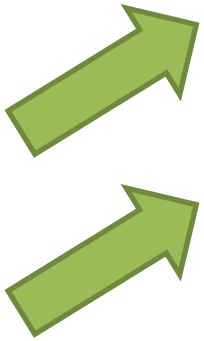
$$E_D = RE_D * (1 - DE) \quad \text{(Eq. L-31)}$$

Specify F-GHG Group for Other F-GHG Not Listed for Purposes of Estimating GWP	Mass of f-GHG that was previously produced and fed annually into the destruction device (metric tons)	Destruction efficiency of the destruction device (fraction)	Equation L-31 Result (The mass of fluorinated GHGs emitted annually from destruction of fluorinated GHGs that were previously "produced" as defined at §98.410(b) (metric tons)
	RE_D	DE	E_D
[redacted]	5.20		5.20
	0.89	0.995000	0.00
			0.00
			0.00
			0.00
			0.00

Introduction | Production Transformation | Container Venting | **Destruction of Prev. Produced** | f-GHG List for Subpart L

READY

Demonstration of eGGRT for Subpart L



Subpart L: Fluorinated Gas Production (2015)

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

The fluorinated gas production source category consists of processes that produce a fluorinated gas from any raw material or feedstock chemical, except for processes that generate HFC-23 during the production of HCFC-22. There are two significant changes to subpart L reporting for reporting year 2015. First, you are required to complete the Inputs Form and upload it here to e-GGRT. Once the upload is complete, you should review the information and emissions data for Production and Transformation Processes, Destruction of Previously Produced F-GHG, and Container Venting. Second, you will have an opportunity to provide Optional Explanations for any significant process or emissions changes from reporting year 2014. For additional information about Subpart L reporting, please use the e-GGRT help link(s) provided.

Annual mass of F-GHGs (metric tons CO2e)

Subpart L: View Validation

1.) DOWNLOAD AND COMPLETE FORMS

Use the link below to access the Reporting Form Instructions page where both the *Subpart L Inputs Form* is located, along with instructions for completing those forms. Complete the forms then proceed to step 2.

Subpart L GHG Reporting and Inputs Forms

2.) UPLOAD COMPLETED INPUTS FORM

Starting with reporting year 2015, you must upload a separate inputs to equations spreadsheet for Subpart L. The inputs to equations will be used by the Inputs Verifier Tool to calculate f-GHG and CO2e emissions and will be used for verification purposes but will not be retained by EPA. The calculated emissions values and the results of the verification checks (the verification summary, viewable from the "Subpart Overview" page) will be stored by EPA.

e-GGRT Inputs Verifier Tool

Completed Inputs Form (will not be stored by EPA) | Choose File | No file chosen | UPLOAD

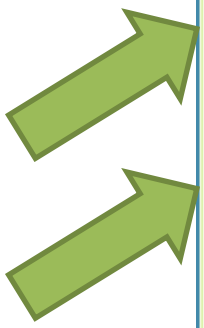
OPTIONAL EXPLANATION OF YEAR-TO-YEAR CHANGES

After reviewing your information below, you can provide optional explanations for changes from the previous year by clicking the "Explanations for Changes" button at the bottom of this page.

Uploaded File Name	Uploaded By	Date
No file uploaded.		

Facility Overview

Demonstration of eGGRT for Subpart L



OPTIONAL EXPLANATION OF YEAR-TO-YEAR CHANGES

After reviewing your information below, you can provide optional explanations for changes from the previous year by clicking the "Explanations for Changes" button at the bottom of this page.

Uploaded File Name	Uploaded By	Date
Subpart L RY15 Inputs Form - 02.09.2016(MultiProd_greater1000)_526117.xls	Karen Schaffner	February 23, 2016

FACILITY SUMMARY INFORMATION

Did the facility produce only one fluorinated gas product, including fluorinated gas products that are intermediates?	No
Did the facility emit 1,000 or more metric tons of CO_2e of any one fluorinated GHG from production and transformation processes, summed across the facility as a whole?	Yes
Did the facility destroy previously produced fluorinated GHGs in destruction processes that are not part of a fluorinated gas production process or fluorinated gas transformation process?	Yes
Did the facility vent residual fluorinated GHGs from containers?	Yes

Demonstration of eGGRT for Subpart L

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

The fluorinated gas production source category consists of processes that produce a fluorinated gas from any raw material or feedstock chemical, except for processes that generate HFC-23 during the production of HCFC-22. There are two significant changes to subpart L reporting for reporting year 2015. First, you are required to complete the Inputs Form and upload it here to e-GGRT. Once the upload is complete, you should review the information and emissions data for Production and Transformation Processes, Destruction of Previously Produced F-GHG, and Container Venting. Second, you will have an opportunity to provide Optional Explanations for any significant process or emissions changes from reporting year 2014. For additional information about Subpart L reporting, please use the e-GGRT help link(s) provided.

Annual mass of F-GHGs (metric tons CO2e)

Subpart L: View Validation

SCREEN ERRORS

- Did the facility vent residual fluorinated GHGs from containers (Introduction tab, cell L18). This data element is required.
- F-GHG (Production Transformation tab Part 1, Column I, row number 1). This data element is required.
- Destruction efficiency of the destruction device (Destruction of Prev. Produced tab, Column L, row number 1). This data element is required.

UPLOAD COMPLETED INPUTS FORM

Click Here to upload a revised version of your Subpart L GHG Inputs Form (If you find that you need to change your input and/or emissions values after you have uploaded the Inputs Form, you must revise and re-upload the Inputs Form to make these changes.).

e-GGRT Inputs Verifier Tool

OPTIONAL EXPLANATION OF YEAR-TO-YEAR CHANGES

After reviewing your information below, you can provide optional explanations for changes from the previous year by clicking the "Explanations for Changes" button at the bottom of this page.

Demonstration of eGGRT for Subpart L

PRODUCTION AND TRANSFORMATION

Process-Level Emissions of F-GHGs by F-GHG Group

Reporting Year 2015 F-GHG group emissions data have been calculated based in equation inputs data entered into the Inputs Form. Other reporting fields, specifically, Process Type, Process Characterization (not shown here), and Emissions Determination Methods for Equipment Leaks (not shown here), have been populated based on your report from last year. Review the data for each Process by clicking on the Process name; on the Process Information page, you may revise or add Process Type, Process Characterization, or Emissions Determination Methods for Equipment Leaks, and provide Missing Data information (as necessary).

Process	Process Type	Mass Emitted (metric tons of CO2e)
Process B	Production Process	38,861.9
Process C	Production Process	10,003.9

Facility-Level Emissions of F-GHGs (emitted at 1,000 or more of mtCO2e)

Data on emissions by F-GHG have been calculated based on equation inputs data entered into the Inputs Form.

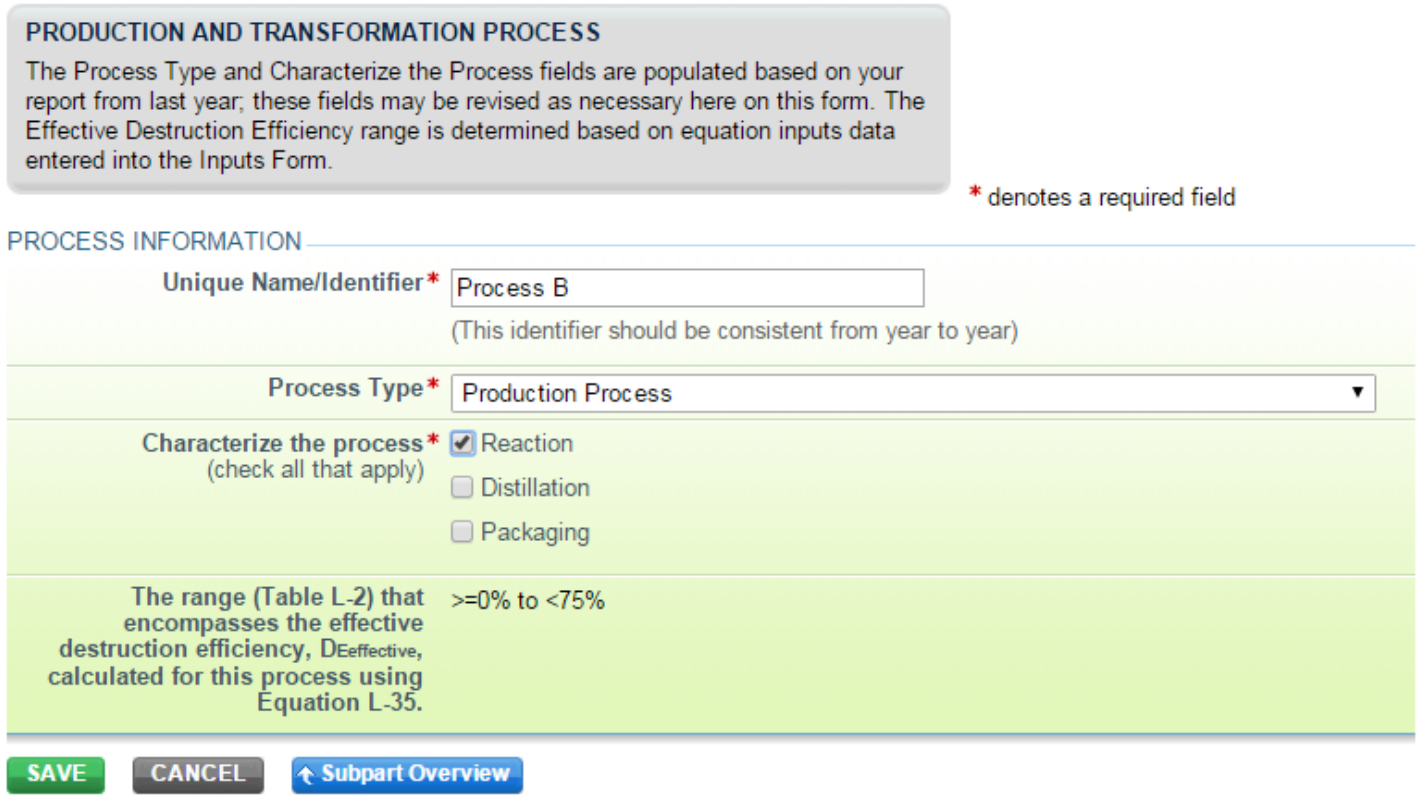
f-GHG	CASRN	GWP	Mass Emitted (metric tons)
PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	9300	5.2544

Facility-Level Emissions of F-GHGs (emitted at less than 1,000 mtCO2e) by F-GHG Group

Data on emissions by F-GHG Group have been calculated based on equation inputs data entered into the Inputs Form.

f-GHG Group	Mass Emitted (metric tons of CO2e)
Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	0.3

Demonstration of eGGRT for Subpart L



PRODUCTION AND TRANSFORMATION PROCESS

The Process Type and Characterize the Process fields are populated based on your report from last year; these fields may be revised as necessary here on this form. The Effective Destruction Efficiency range is determined based on equation inputs data entered into the Inputs Form.

* denotes a required field

PROCESS INFORMATION

Unique Name/Identifier* Process B

(This identifier should be consistent from year to year)

Process Type* Production Process

Characterize the process* (check all that apply)

- [x] Reaction
- [ ] Distillation
- [ ] Packaging

The range (Table L-2) that encompasses the effective destruction efficiency, $DE_{effective}$, calculated for this process using Equation L-35. >=0% to <75%

SAVE CANCEL Subpart Overview

Demonstration of eGGRT for Subpart L

PROCESS VENT INFORMATION

The Emissions Determination Method and the Mass Emitted by f-GHG group are determined based on selections made and equation inputs data entered into the Inputs Form. Complete the Missing Data fields for process vents.

f-GHG Group	Emissions Determination Method(s)	Mass Emitted (metric tons of CO2e)
Fully fluorinated GHGs	Emission Factor	1,860.7
Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	Emission Calculation Factor	0.0

Were the annual emissions of one or more F-GHG groups based on a missing data procedure? (•) Yes ( ) No

Reason for the missing data: DD temperature recorder not operating.

Number of hours a missing data procedure was used to determine F-GHG emissions from process vents: 48 (hours)

Provide the method used to estimate the missing data: Assumed T value based on consistent fuel feed.

If the data element is reportable under subpart L, provide estimates of the missing data. If the data element is not reportable, enter NA: NA

EQUIPMENT LEAK INFORMATION

The Emissions Determination Methods are populated based on your report from last year; these fields may be revised as necessary here on this form (click on button Edit EL Emissions Determination Method). The Mass Emitted by f-GHG group is calculated based on equation inputs data entered into the Inputs Form. Complete the Missing Data fields for equipment leaks.

f-GHG Group	Emissions Determination Method(s)	Mass Emitted (metric tons of CO2e)
Fully fluorinated GHGs	Average EF Approach	37,001.0
Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	EPA Correlation Approach w/ M21	0.3

Edit EL Emissions Determination Methods

Were the annual emissions of one or more F-GHG groups based on a missing data procedure? ( ) Yes (•) No

SAVE CANCEL Subpart Overview

Demonstration of eGGRT for Subpart L

DESTRUCTION

Destruction of Previously Produced F-GHG - All Destruction Processes Combined

Reporting Year 2015 data on F-GHG emissions from Destruction of Previously Produced have been calculated based on equation inputs data entered into the Inputs Form. Use the "Enter Destruction Device Info" button to enter optional device descriptions and missing data procedure information.

Device	f-GHG	CASRN	GWP	Mass Emitted (metric tons)
DD PFC	PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	9300	0.0208
DD PFC	PFC C-1418	559-40-0	1.97	0.0044

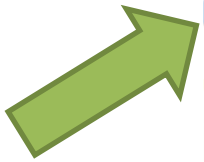
Enter Info for Destruction Device for Previously Produced

CONTAINER VENTING

Venting of Residual F-GHGs from Containers from the Field - All Containers Combined

Reporting Year 2015 data on F-GHG emissions from container venting have been calculated based on equation inputs data entered into the Inputs Form.

f-GHG	CASRN	GWP	Mass Emitted (metric tons)
Perfluorocyclobutane	115-25-3	10300	0.07
PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	9300	0.1135



Explanation of Changes

UPLOAD DESTRUCTION DEVICE PERFORMANCE TESTING FORM

This form is not required every year. Facilities are required to use and submit this form with their annual report for a particular reporting year if they met one or more of the following three conditions in that reporting year: the facility began destroying F-GHGs for the first time in that reporting year; the facility began to use a new destruction device to destroy F-GHGs in that reporting year; or the facility made a change to a destruction device in that reporting year that would be expected to affect its destruction efficiencies. See 40 CFR 98.124(g) Destruction device performance testing, and 40 CFR 98.126(f), Reporting of destruction device testing

Choose File | No file chosen | UPLOAD

Uploaded File Name	Attached By	Date	Delete
L Rpt Form Destruction Device Perfomance Testing_RY generic 2016-02-05.xls	Karen Schaffner	February 10, 2016	✖

Facility Overview

Demonstration of eGGRT for Subpart L

OPTIONAL EXPLANATION OF YEAR-TO-YEAR CHANGES

Enter optional explanations of emission changes from the previous year (e.g., acknowledgement of process starts, explanation of large changes in process emissions, etc…). **Please note that if you elect to re-upload an Inputs Form, these comments will be erased. If you would like to include an optional explanation for the re-uploaded data, you may enter (or re-enter) a comment before you submit your annual report.**

PRODUCTION AND TRANSFORMATION

Process-Level Emissions of F-GHG by F-GHG Group

As part of EPAs verification process, these data elements are compared to the same data elements from the previous year. A large change triggers a verification message to the facility during EPA review.

Process	Process Type	Mass Emitted (metric tons of CO2e)	Optional Comment to EPA
Process B	Production Process	38,861.9	
Process C	Production Process	10,003.9	

Facility-Level Emissions of F-GHGs (emitted at 1,000 or more of mtCO2e)

As part of EPAs verification process, these data elements are compared to the same data elements from the previous year. A large change triggers a verification message to the facility during EPA review.

f-GHG	CASRN	GWP	Mass Emitted (metric tons)	Optional Comment to EPA
PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	9300	5.25435610	

Facility-Level Emissions of F-GHGs (emitted at less than 1,000 mtCO2e) by F-GHG Group

These data elements are NOT automatically compared to the same data elements from the previous year, but they are reviewed.

f-GHG Group	Mass Emitted (metric tons of CO2e)	Optional Comment to EPA
Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	0.3	

SAVE CANCEL Subpart Overview

Year-to-Year Changes Triggering Messages

Data Element	Change Triggering a Message
Emissions of any particular F-GHG from production and transformation processes	**Greater than 50,000 mtCO_2e** up or down OR, for changes of more than 500 mtCO_2e, **greater than 50 percent** up or down
Total CO_2e emissions from any particular process	**Greater than 50,000 mtCO2e** up or down OR, for changes of more than 500 mtCO_2e, **greater than 50 percent** up or down
Share of CO_2e emissions from a process composed of any particular F-GHG group	**Greater than 10 percent** up or down
Emissions of any particular F-GHG from container venting	For changes of more than 100 mtCO2e, **greater than 50 percent** up or down
Emissions of any particular F-GHG from destruction of previously produced F-GHGs	For changes of more than 100 mtCO2e, **greater than 50 percent** up or down

Demonstration of eGGRT for Subpart L

DESTRUCTION

Destruction of Previously Produced F-GHG - All Destruction Processes Combined

Reporting Year 2015 data on F-GHG emissions from Destruction of Previously Produced have been calculated based on equation inputs data entered into the Inputs Form. Use the "Enter Destruction Device Info" button to enter optional device descriptions and missing data procedure information.

Device	f-GHG	CASRN	GWP	Mass Emitted (metric tons)
DD PFC	PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	9300	0.0208
DD PFC	PFC C-1418	559-40-0	1.97	0.0044

Enter Info for Destruction Device for Previously Produced

CONTAINER VENTING

Venting of Residual F-GHGs from Containers from the Field - All Containers Combined

Reporting Year 2015 data on F-GHG emissions from container venting have been calculated based on equation inputs data entered into the Inputs Form.

f-GHG	CASRN	GWP	Mass Emitted (metric tons)
Perfluorocyclobutane	115-25-3	10300	0.07
PFC-5-1-14 (Perfluorohexane, FC 72)	355-42-0	9300	0.1135

Explanation of Changes

UPLOAD DESTRUCTION DEVICE PERFORMANCE TESTING FORM

This form is not required every year. Facilities are required to use and submit this form with their annual report for a particular reporting year if they met one or more of the following three conditions in that reporting year: the facility began destroying F-GHGs for the first time in that reporting year; the facility began to use a new destruction device to destroy F-GHGs in that reporting year; or the facility made a change to a destruction device in that reporting year that would be expected to affect its destruction efficiencies. See 40 CFR 98.124(g) Destruction device performance testing, and 40 CFR 98.126(f), Reporting of destruction device testing

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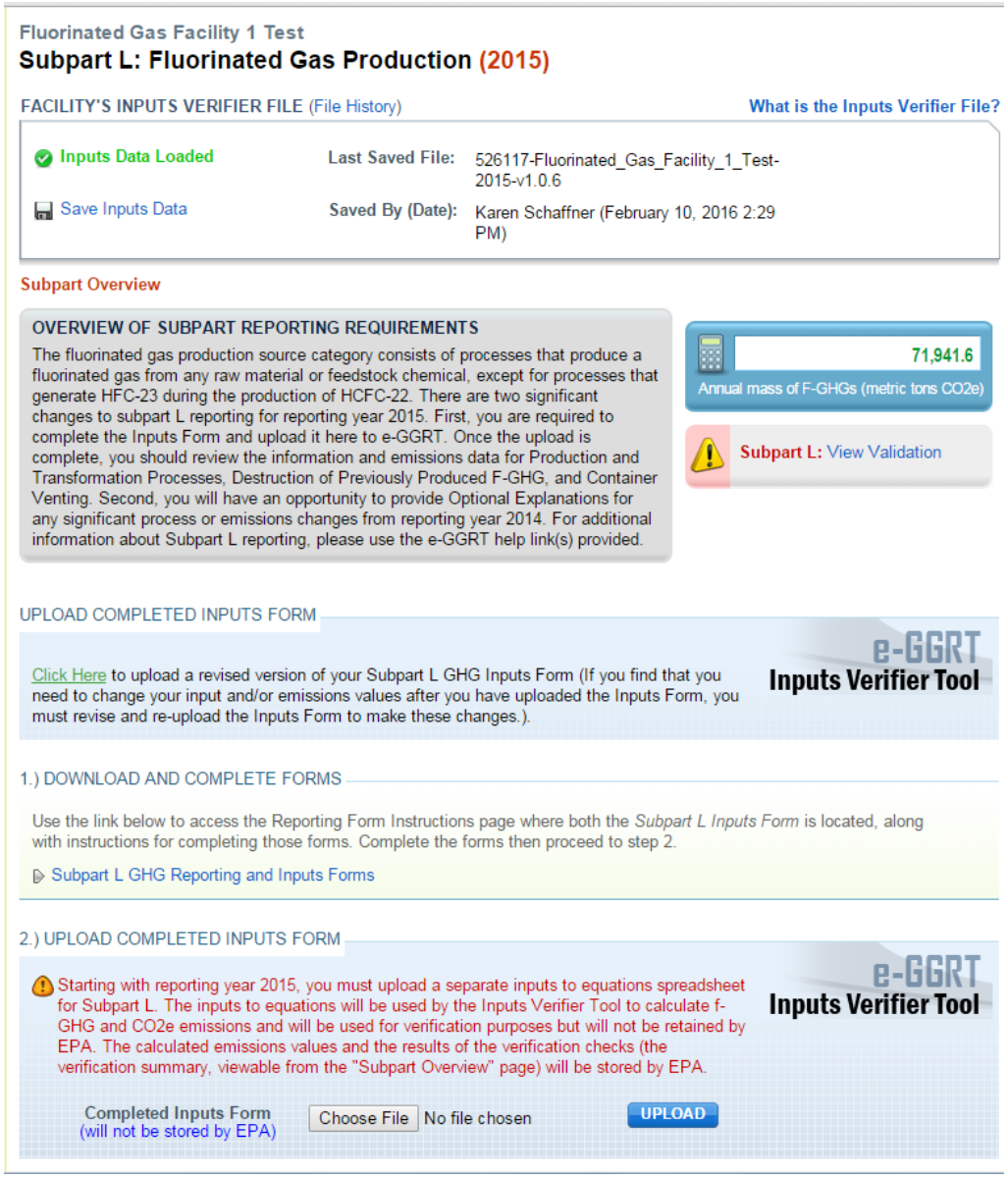
Uploaded File Name	Attached By	Date	Delete
L Rpt Form Destruction Device Perfomance Testing_RY generic 2016-02-05.xls	Karen Schaffner	February 10, 2016	✖

Facility Overview

Demonstration of eGGRT for Subpart L



Fluorinated Gas Facility 1 Test

Subpart L: Fluorinated Gas Production (2015)

FACILITY'S INPUTS VERIFIER FILE (File History) — What is the Inputs Verifier File?

Inputs Data Loaded — Last Saved File: 526117-Fluorinated_Gas_Facility_1_Test-2015-v1.0.6

Save Inputs Data — Saved By (Date): Karen Schaffner (February 10, 2016 2:29 PM)

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

The fluorinated gas production source category consists of processes that produce a fluorinated gas from any raw material or feedstock chemical, except for processes that generate HFC-23 during the production of HCFC-22. There are two significant changes to subpart L reporting for reporting year 2015. First, you are required to complete the Inputs Form and upload it here to e-GGRT. Once the upload is complete, you should review the information and emissions data for Production and Transformation Processes, Destruction of Previously Produced F-GHG, and Container Venting. Second, you will have an opportunity to provide Optional Explanations for any significant process or emissions changes from reporting year 2014. For additional information about Subpart L reporting, please use the e-GGRT help link(s) provided.

71,941.6
Annual mass of F-GHGs (metric tons CO2e)

Subpart L: View Validation

UPLOAD COMPLETED INPUTS FORM

Click Here to upload a revised version of your Subpart L GHG Inputs Form (If you find that you need to change your input and/or emissions values after you have uploaded the Inputs Form, you must revise and re-upload the Inputs Form to make these changes.).

e-GGRT Inputs Verifier Tool

1.) DOWNLOAD AND COMPLETE FORMS

Use the link below to access the Reporting Form Instructions page where both the *Subpart L Inputs Form* is located, along with instructions for completing those forms. Complete the forms then proceed to step 2.

Subpart L GHG Reporting and Inputs Forms

2.) UPLOAD COMPLETED INPUTS FORM

Starting with reporting year 2015, you must upload a separate inputs to equations spreadsheet for Subpart L. The inputs to equations will be used by the Inputs Verifier Tool to calculate f-GHG and CO2e emissions and will be used for verification purposes but will not be retained by EPA. The calculated emissions values and the results of the verification checks (the verification summary, viewable from the "Subpart Overview" page) will be stored by EPA.

e-GGRT Inputs Verifier Tool

Completed Inputs Form (will not be stored by EPA) — Choose File — No file chosen — UPLOAD

Subpart L

Questions?