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Toxic Chemical Release Inventory Reporting Forms and Instructions

Revised 2017 Version

Section 313
of the Emergency Planning and Community Right-to-Know Act

(Title III of the Superfund Amendments and Reauthorization Act of 1986)

Paperwork Reduction Act Notice: The annual public burden related to the Form R, which is approved under OMB Control No. 2025-0009, is estimated to average 35.71 hours per response for a facility filing a report on one chemical. The annual public burden related to the Form A, which is also approved under OMB Control No. 2025-0009, is estimated to average 21.96 hours per response for a facility filing a report on one chemical. This is a mandatory collection and EPA's regulations for reporting associated with this collection request are listed in 40 CFR Part 372.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques, to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Officer for EPA. Include the EPA ICR number and OMB control number in any correspondence.

The completed forms should be submitted in accordance with these instructions and as specified in the corresponding regulation.

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List of Acronyms

ARA	Annual Reportable Amount
BIA	Bureau of Indian Affairs
CAS	Chemical Abstract Services
CBI	Confidential Business Information
CDX	Central Data Exchange
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
D&B	Dun & Bradstreet
DMR	Discharge Monitoring Report
DPC	Data Processing Center
DQA	Data Quality Alert
EBDCs	Ethylenebisdithiocarbamic Acid, Salts and Esters
eFDP	Electronic Facility Data Profile
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
ESA	Electronic Signature Agreement
FDP	Facility Data Profile
FIPS	Federal Information Processing Standard
FR	Federal Register
GOCO	Government-Owned, Contractor-Operated
IARC	International Agency for Research on Cancer
ICR	Information Collection Request
NA	Not Applicable
NAICS	North American Industry Classification System
NDC	Non-Technical Data Changes
NHD	National Hydrography Dataset
NON	Notice of Non-Compliance
NOSE	Notice of Significant Error
NOTE	Notice of Technical Errors
NPDES	National Pollutant Discharge Elimination System
NTP	National Toxicology Program
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Act
P2	Pollution Prevention
PACs	Polycyclic Aromatic Compounds
PBBs	Polybrominated Biphenyls
PBT	Persistent Bioaccumulative Toxic
PCBs	Polychlorinated Biphenyls
POTW	Publicly Owned Treatment Works
PPA	Pollution Prevention Act
RCRA	Resource Conservation and Recovery Act
RSEI	Risk Screening Environmental Indicators
RY	Reporting Year
SBREFA	Small Business Regulatory Enforcement Fairness Act
SDS	Safety Data Sheets
SIC	Standard Industrial Classification
TDX	TRI Data Exchange
TRI	Toxics Release Inventory
TRIFID	Toxics Release Inventory Facility Identification Number
TRIPS	Toxics Release Inventory Processing System
UIC	Underground Injection Control
USC	United States Code
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds

Important Information for Reporting Year (RY) 2017

New Information for RY 2017

Please note that this version of the Toxic Chemical Release Inventory (TRI) Reporting Forms and Instructions document supersedes previous versions.

New TRI Chemical Category: Hexabromocyclododecane (HBCD) Category A rule was published on November 28th, 2016, (80 FR 85440) adding an HBCD category to the TRI list of reportable chemicals that covers HBCD as identified through two primary Chemical Abstracts Service Registry Numbers (CASRNs): 3194-55-6 (1,2,5,6,9,10-hexabromocyclododecane) and 25637-99-4 (hexabromocyclododecane). Reporting forms on HBCD are due July 1, 2018 for 2017 data if TRI chemical use and other thresholds are met.

2017 TRI NAICS Revision. A final rule was published in the Federal Register on December 26, 2017 (82 FR 52674) to adopt 2017 NAICS codes for RY 2017, forms due July 1, 2018. Table I lists all NAICS industries that are covered under EPCRA 313 and their corresponding codes.

Updated De Minimis Levels for Several Chemicals Beginning with Reporting Year 2017. the de minimis levels for cumene, diazinon, 1,2-dichloropropane, malathion, methyl isobutyl ketone, parathion, sodium pentachlorophenate, 1,1,1,2-tetrachloroethane, and 1,1,2,2-tetrachloroethane have been changed from 1.0% to 0.1% since these chemicals are now classified as OSHA carcinogens due to assessments by the International Agency for Research on Cancer and the National Toxicology Program Report on Carcinogens.

Other Important Information

TRI Chemical: 1-Bromopropane. A rule was published on November 23, 2015, (80 FR 72906) adding 1-bromopropane (CAS No. 106-94-5) to the TRI list of reportable chemicals. Reporting forms on 1-bromopropane are due July 1, 2018 for 2017 data

Pollution Prevention. In order to promote pollution prevention (P2), EPA has increased the prominence and accessibility of the P2 information reported in Sections 8.10 and 8.11 of the Form R. Some companies reporting P2 are now highlighted in the annual TRI National Analysis report, and all P2 entries are featured in the TRI P2 Search tool. P2 data is also newly accessible at the corporate level through this tool. To learn more, visit: https://www.epa.gov/toxics-release-inventory-tri-program/pollution-prevention-p2-and-tri

GuideME. EPA now provides TRI guidance materials via GuideME. GuideME provides consolidated, searchable access to TRI guidance materials, including Questions and Answers guidance, Reporting Forms & Instructions, Chemical and Industry Guidance Documents, Training Slides, and other materials. You may access these guidance materials within a Web browser or download the materials as PDFs.

Facilities May Submit Optional Facility Level Information in TRI-MEweb Without Submitting a Form R or Form A. You can use TRI-MEweb to update location and contact information for your facility without having to submit a TRI reporting form. Additionally, without submitting a TRI reporting form, you can use TRI-MEweb to indicate that your facility will no longer be reporting to TRI or will not be submitting a form for one or more specific TRI-listed chemicals for the current reporting year.

EPA's Audit Policy. If you discover your facility is or may have been in violation of Section 313 of EPCRA (TRI Reporting), please refer to EPA's Policy entitled, "Incentives for Self-Policing: Discovery, Disclosure, Correction, and Prevention of Violations" (Audit Policy), 65 FR 19618, April 11, 2000. You may qualify for having all gravity-based penalties waived if your facility meets all nine (9) conditions of the Audit Policy. For more information on EPA's Audit Policy, see the Agency's website: https://www.epa.gov/compliance/epas-audit-policy.

EPA Enforcement Response Policy for TRI Revisions. On September 26, 1991, EPA published a Federal Register notice on revisions to TRI reporting forms under EPCRA Section 313 (56 FR 48795-03). Section V of the notice refers to the Agency's enforcement and penalties policy regarding Form R errors.

Facilities are reminded that there is a legal obligation to file an accurate and complete Form R report for each chemical by July 1 each year. EPA may take enforcement action and assess civil administrative penalties regarding corrections to errors in Form R reports that are not changes based on previously unavailable information or procedures which improve the accuracy of the data initially reported. The kinds of errors which may result in enforcement and in penalties include but are not limited to the

following: (1) Errors caused by not using the most readily available information, for example, not using monitoring data collected for compliance or other purposes with other regulations in calculating releases; (2) omitting a major source of emissions; (3) a mathematical or transcription or typographical error which seriously compromises the accuracy of the information, and; (4) other errors which seriously affect the utility of the data, particularly errors in release reporting for which the facility has no records showing the derivation of the release calculation, and cannot provide a sufficient explanation of the report.

EPA's Small Business Compliance Policy. If you have 100 or fewer employees and discover that your facility is or may have been in violation of Section 313 of EPCRA (TRI Reporting), please refer to EPA's Small Business Compliance Policy. EPA will eliminate or significantly reduce penalties for small businesses that meet the conditions of the Policy, including voluntarily discovering violations and promptly disclosing and correcting them. This Policy implements Section 223 of the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996. For more information, see the Agency's website: https://www.epa.gov/compliance/small-business-compliance.

Parent Company Information. In past years, the Agency found that many facilities report inaccurate parent companies and/or Dun and Bradstreet numbers in Sections 4 and 5 of the TRI reporting forms. All facilities should verify the accuracy of facility and parent company information (e.g., D&B number, parent company name). Related questions and answers are provided in Appendix F.

Please note that EPA pre-loads standardized parent company names into TRI-MEweb that were researched from the prior year submissions. This step was taken to improve the accuracy of parent company names as well as create a standard format for the names themselves. For example, only capital letters are used and all periods are eliminated from the parent names. In addition, standardized abbreviations are now used for common terms found in parent names such as 'CO for Company' and 'INC for Incorporated.' More detailed explanations and a facility-by-facility list of standardized parent names can be found at: https://ofmpub.epa.gov/apex/guideme_ext/guideme_ext/guideme/file/RY_2017_Parent_Companies.xlsx.

A. To verify the accuracy of your facility and parent company Dun and Bradstreet number and name, as required in Section 5 of both Form R and Form A, go to: https://www.dnb.com/product/dlw/form_cc4.htm or call 1-888-814-1435 to verify your information. Callers to the toll free phone number should understand that the Dun and Bradstreet support representatives will need to verify that callers requesting the D&B numbers are agents of the business. Dun and Bradstreet recommends knowing basic information such as when the business originated, officer names, and the name, address, and phone number for the facility.

B. Facilities reporting to TRI should also make sure they are providing the parent company name and Dun and Bradstreet number as of December 31st of the current reporting year.

A. General Information

Reporting to the Toxic Chemical Release Inventory (i.e., Toxics Release Inventory (TRI)) is required by Section 313 of the Emergency Planning and Community Right to Know Act (EPCRA, or Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99 499. The information contained in the Form R constitutes a "report," and the submission of a report to the appropriate authorities constitutes "reporting."

The Pollution Prevention Act, of October 1990 (Pub. L. 101 508), added reporting requirements to the Form R. These requirements began with calendar year 1991 reports and affect all facilities required to submit a Form R under Section 313 of EPCRA.

Reporting is required to provide information to the public on releases and other waste management of EPCRA Section 313 chemicals in their communities and to provide EPA with release and other waste management information to assist the Agency in determining the need for future regulations. Facilities must report the quantities of routine and accidental releases, and releases resulting from catastrophic or other onetime events of EPCRA Section 313 chemicals, as well as the maximum amount of the EPCRA Section 313 chemical on-site during the calendar year and the amount contained in wastes managed on-site or transferred off-site.

A completed Form R or Form A must be submitted for each EPCRA Section 313 chemical manufactured, processed, or otherwise used at each covered facility as described in the reporting rules in 40 Code of Federal Regulations (CFR) Part 372 (originally published February 16, 1988, in the *Federal Register* and November 30, 1994, in the *Federal Register* (for Form A)).

The Electronic Reporting Rule was published in the Federal Register on August 27, 2013 (78 FR 52860) and requires all forms to be submitted electronically. Reports that are not submitted electronically using TRI-MEweb will not be processed as acceptable submissions. However, facilities submitting TRI reports containing trade secrets will still submit their reports to EPA on paper, not via TRI-MEweb. This electronic reporting requirement includes late submissions for prior reporting years, revisions, and withdrawals.

July 1 is the TRI reporting deadline. There is a legal obligation to file an accurate and complete Form R report for each chemical by July 1 each year. EPA may take enforcement action and assess civil administrative penalties regarding corrections to errors in Form R reports that are not changes based on previously unavailable information or procedures which improve the accuracy of the data initially reported. The kinds of errors which may result in enforcement and in penalties include but are not limited to the following: (1) errors caused by not using the most readily available information, for example, not using monitoring data collected for compliance or other purposes with other regulations in calculating releases; (2) omitting a major source of emissions; (3) a mathematical or transcription or typographical error which seriously compromises the accuracy of the information, and; (4) other errors which seriously affect the utility of the data, particularly errors in release reporting for which the facility has no records showing the derivation of the release calculation, and cannot provide a sufficient explanation of the report.

A.1 Who Must Report

EPCRA Section 313 requires that reports be filed by owners and operators of facilities that meet all of the following criteria:

- The facility has 10 or more full-time employee equivalents (i.e., a total of 20,000 hours or greater; see 40 CFR 372.3);
- The facility is included in a North American Industry Classification System (NAICS) code listed in Table I; and
- The facility manufactures (defined to include importing), processes, or otherwise uses any EPCRA Section 313 chemical in quantities greater than the established threshold in the course of a calendar year. Reporting thresholds are listed in Section B.4.

Executive Order 13693 extends these reporting requirements to federal facilities, regardless of their SIC or NAICS code.

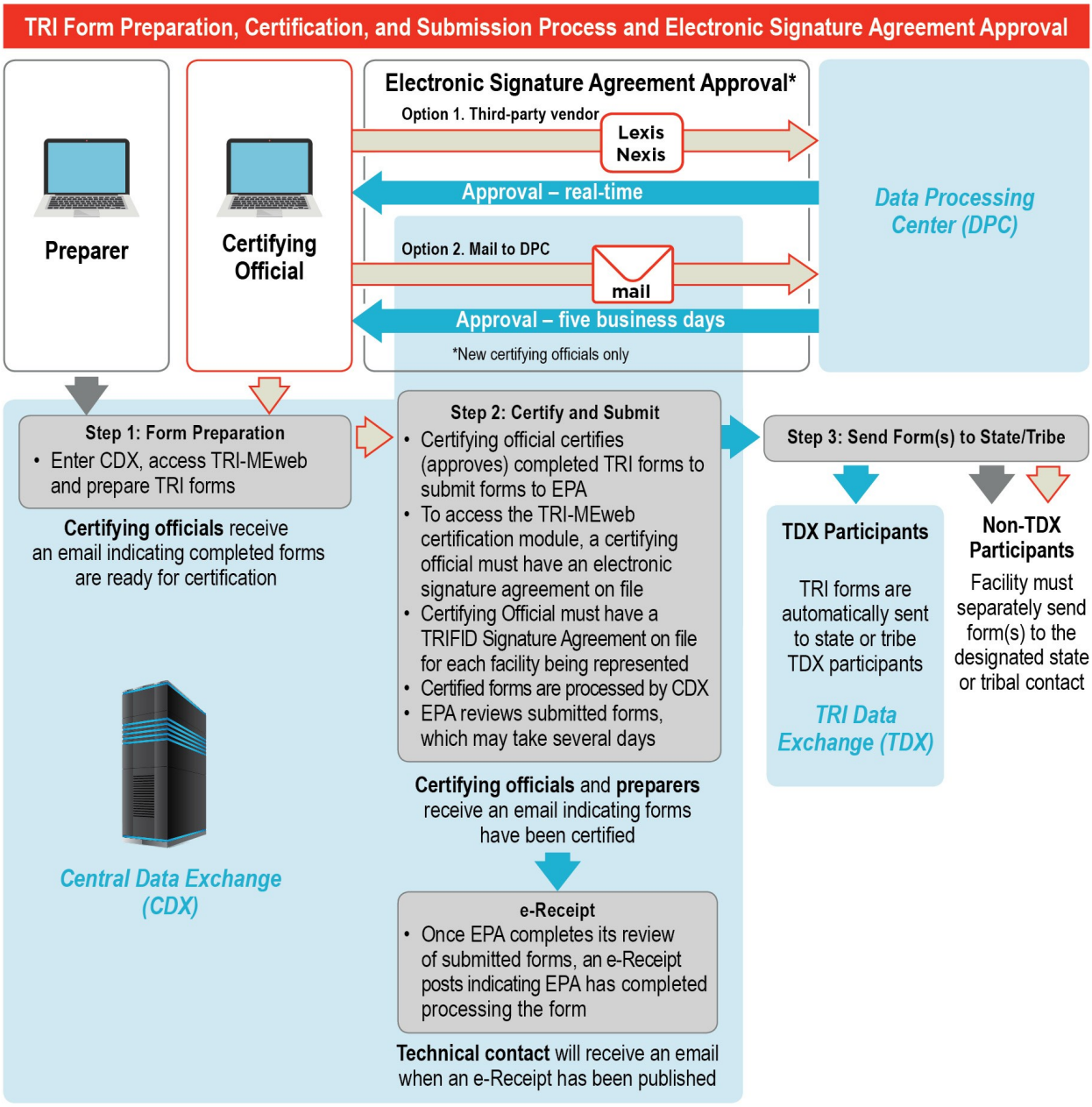

Figure 1. TRI-MEweb's Preparation, Certification and Submission Process and Electronic Signature Agreement Approval

A.2 How to Submit Forms

Facilities must use the TRI-MEweb application to submit non-trade secret TRI reports. TRI-MEweb is accessible online and assists facilities reporting TRI data.

Some facilities prepare TRI reporting forms using their own software. These facilities still need to load and submit their TRI reporting forms to EPA using TRI-MEweb via the online reporting application's third-party load feature. More information on the third-party load feature can be found on the TRI-MEweb webpage: https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources.

Facilities must submit a copy of each reporting form sent to EPA to the state or tribe in which that facility is located. Conveniently, TRI-MEweb will simultaneously send a copy of each reporting form submitted to EPA to the appropriate state or tribal official if the state or tribe participates in the TRI Data Exchange (TDX). (Internet submissions are not available for trade secret claims). This simultaneous submission satisfies a facility's legal obligation to report to EPA and the appropriate state

or tribe. States participating in TDX are shown on this website.

https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange.

Please be aware that if your facility does not reside in a state or tribe participating in the TDX, just transmitting TRI forms via the Internet does not satisfy your state or tribal reporting requirements for your facility. You must report to your state or tribe separately and in the required format specified by your state or tribe. However, if your state or tribe is not in the TDX then TRI-MEweb can still be used by the reporting facility to prepare and print the proper paper TRI forms. A senior management official must certify the submission by signing the TRI forms. For non-TDX states and tribes, completed TRI forms must be printed from TRI-MEweb and mailed to the designated state or tribal contact. Do not send forms from the TRI-MEweb application to EPA's Data Processing Center (DPC), except for trade secret submissions, which still must be sent to the DPC.

A.2.a. TRI-MEweb RY 2017 Version

Facilities use TRI-MEweb to fulfill their Emergency Planning and Community Right-to-Know (EPCRA) Section 313 and Pollution Prevention Act (PPA) Section 6607 reporting obligations. TRI-MEweb is an interactive, intelligent, user-friendly web-based application tool that guides facilities through TRI reporting. Using a series of logically ordered questions, TRI-MEweb streamlines the analysis needed to determine if a user must complete a Form R Report or if they meet thresholds that allow them to use the Form A Certification Statement for a particular chemical.

The TRI-MEweb software provides guidance for each data element on the TRI reporting Forms. TRI-MEweb checks the entered data for common errors and then prepares it for electronic transmission and certification in the Agency's Central Data Exchange (CDX) (see the flow diagram of the TRI-MEweb reporting process (Figure 1)) TRI-MEweb allows facilities to submit, revise, and withdraw TRI reporting forms for RYs 1991 through the current reporting year, provided the forms do not contain trade secret information.

A.2.b. How to Begin Using the RY 2017 TRI-MEweb Reporting Tool

TRI-MEweb is accessed through EPA's Central Data Exchange (CDX). The TRI-MEweb application uses EPA's CDX network to transmit and certify electronic submissions to EPA. CDX allows facilities to submit a paperless report and receive instant receipt confirmation of their submission via the Internet**.** TRI-MEweb supports most Web browsers; however, ***should you encounter any problems in accessing CDX or TRI-MEweb, consult the TRI-MEweb Resource webpage***: https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources.

Two user roles involved in TRI reporting. There are two user roles in the TRI reporting process: a preparer role and a certifying official role. Figure 1 (Page 2) illustrates how these two roles are involved in the TRI reporting process. The "Preparer" is the person who prepares TRI forms for submission in TRI-MEweb but is not authorized to certify them. The "Certifying Official" is the person of authority or legal representative at a facility that will be certifying the data contained in the submitted TRI Form R or Form A Certification Statement in TRI-MEweb to EPA and their state or tribe. Certifying officials may also prepare forms, but the preparer cannot certify TRI forms. Both TRI roles require a CDX user account with the TRI-MEweb application added to the *MyCDX* profile. Step-by-step instructions for creating CDX user accounts for new preparers or certifying officials can be found on the TRI-MEweb Resources webpage: https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources.

Establishing a CDX account and getting started in TRI-MEweb as a new preparer or certifying official.

- Access the CDX login web page at https://cdx.epa.gov/. Click the ***Register with CDX*** link to begin creating a new CDX user account.
- When registering with CDX, search for TRI-MEweb when adding a Program Service to your account.
- Note that CDX passwords expire after 90 days, so please be sure to provide answers to the three security questions that you will remember.
- All certifying officials must submit an Electronic Signature Agreement (ESA) form to EPA for approval before certifying and

submitting TRI forms. If you are registering as a certifying official, then please review the Electronic Signature Agreement section below to learn how to become authorized to certify and submit TRI reporting forms.

- Users that already have a CDX account for other EPA reporting programs and have never reported to TRI before will only need to add TRI-MEweb by clicking the "Manage Your Program Services" link on their MyCDX page. This will enable TRI reporting through their CDX account.

Linking your new CDX account to an existing TRI facility in TRI-MEweb. If your facility has submitted a TRI reporting form for a prior reporting year, it will already have a TRI Facility Identification Number (TRIFID) assigned to it. *You should not create a new TRIFID for your facility if the facility has previously submitted a TRI reporting form.*

In TRI-MEweb, you can also load information about an existing TRI facility by providing the technical contact information and TRIFID used on a report during the prior reporting year. Or, you can enter a 6-digit access key for your facility. In TRI-MEweb, you may request for the access key for a facility to be emailed to you. Additionally, the person who previously prepared or certified forms for your facility can use TRI-MEweb to send the access key via email to allow a preparer or certifying official connect to an existing facility. You can also contact the CDX Help Desk at (888) 890-1995 to obtain an access key.

A.2.c. Electronic Signature Agreement

An Electronic Signature Agreement (ESA) is a statement that declares that the person electronically signing a document (i.e., a reporting form) understands the electronic signature is as legally binding as a handwritten signature. EPA requires a certifying official to have a signed ESA on record before the certifying official can certify and submit a TRI form created in TRI-MEweb. Returning certifying officials since RY 2013 will likely have an ESA signed on record and will only need to navigate to the "**Forms**" tab and then to the "**Pending Forms**" subtab in TRI-MEweb to find any pending submission(s) that is ready to be certified.

ESAs are created when a user creates a new CDX account with a certifying official role within CDX. Currently, there are two ways to obtain an ESA approval from EPA.

Option 1 - LexisNexis real-time ESA approval. A new certifying official may use a third-party identity verification vendor to obtain an ESA electronically. The certifying official will need to voluntarily provide personal identifying information to the third-party vendor (EPA does not collect any personal information from our users) to authenticate his or her identity. The most significant benefit gained from using this third-party identify verification is that users will no longer need to wait up to 5 business days for EPA to approve an ESA. If the certifying official does not wish to provide personal information to a third-party vendor, he or she should submit a paper ESA form instead well ahead of the July 1 reporting deadline.

A significant advantage of this real-time method, besides obtaining immediate ESA approval, is that the real-time approval is applicable to multiple CDX system flows. Programs like eTSCA and Risk Management Plan (RMP eSubmit) will be able to share the security credentials offered by the CDX ESA obtained under TRI. To obtain this real-time approval, the certifying official must provide personal identity authentication information such as name, address, etc. Please note that EPA does not collect any personal information from our users. The use of these third-party verification and identification widgets is common in banking systems.

Option 2 - Paper ESA form. A printable ESA form can be generated during the CDX registration process. The ESA form must be signed and mailed to EPA's Data Processing Center (DPC in Figure 1) for approval before the certifying official can begin to certify any TRI forms completed by the preparer to CDX using TRI-MEweb. Hard copy ESA approval may take up to five business days, so please plan accordingly or consider option one, LexisNexis. TRI-MEweb is updated when the ESA is approved.

Paper ESAs can be mailed to the address below:

Attention: TRI ESA Approval Request
TRI Reporting Center
P.O. Box 10163
Fairfax, VA 22038

The hard copy ESA approval process requires the printing, completion, and mailing of an electronic signature agreement form. Please allow adequate time for the mailing and processing of this form, which is estimated to

take a minimum of five (5) business days. Certifying officials who do not have a signed ESA, electronic or hard copy, will not be able to certify forms in TRI-MEweb. It is recommended that certifying officials complete their ESA well in advance of the reporting deadline.

Accidental deletion of ESA in TRI-MEweb. The TRI-MEweb application also has the capability to manage user profiles (previously authorized preparers or certifying officials) that have been granted access to facility accounts. This capability includes revoking approved ESA(s) for any certifying official(s) that has left the facility's payroll or is no longer authorized to certify forms. An ESA could also be accidently revoked by the preparer. If this occurs, there is a 45-day grace period to get the ESA reactivated by the CDX helpdesk without having to send a paper form to EPA for re-approval. An email notification is sent to the affected certifying official by CDX when an ESA has been revoked within TRI-MEweb.

TRIFID Signature Agreement. In addition to the ESA requirement, new certifying officials must sign a TRIFID Signature Agreement for each facility they represent. By signing the TRIFID Signature Agreement, certifying officials are confirming that they are owner/operators or senior management officials for the reporting facility and are authorized to certify forms for that facility. Certifying officials must complete the TRIFID Signature Agreement only once for each facility they represent as a certifying official. Returning certifying officials will be ready to certify any forms for a facility account for which a TRIFID Signature Agreement was previously signed. A single CDX ESA will also allow new and returning certifying officials to represent additional facility accounts without the need for an ESA approval for each facility account. However, all newly added facility accounts will only require a TRIFID Signature Agreement to be signed.

A certifying official must have an approved ESA before they can log into TRI-MEweb. Once in TRI-MEweb, the certifying official should click on the "**Facility Management**" tab to access the *Manage TRIFID Signature Agreements page*, where a list of TRIFIDs pending a TRIFID Signature Agreement is displayed. Then select the check box next to the facility's TRIFID in the "Pending Signature" table and click "**Sign Agreement"** button. Review the TRIFID Signature Agreement and click "**I Agree**" button. The electronic signature widget will prompt the certifying official to enter their CDX password, answer a secret question, and click "**Sign**" button. A confirmation box will appear, noting the successful signature.

ESA and TRIFID Signature Agreement Status in TRI-MEweb. The ESA and TRIFID Signature Agreement status of the certifying official(s) assigned to each facility is listed under the ESA Status column in TRI-MEweb.

- A status of **No CDX ESA** indicates that no certifying officials are associated with the facility.
- A status of **Sign CDX ESA** indicates that either:
  - The certifying official has not signed an ESA. The certifying official must sign a new CDX ESA.
  - The certifying official has provided a paper copy of ESA prior to RY 2012. The returning certifying official must electronically sign a new CDX ESA upon logging in to CDX for first time in RY 2014. Also note that TRIFID Signature Agreement has also not been signed.
- A status of **Sign TRIFID Signature Agreement** indicates that the certifying official has obtain approval of the CDX ESA, but still needs to sign the TRIFID Signature Agreement within the TRI-MEweb application.
- A status of **Active Certifying Official Available** indicates that your assigned certifying official has received approval of the ESA, signed the TRIFID Signature Agreement, and is ready to certify any pending forms completed by the preparer.

A.2.d. Miscellaneous Information on TRI-MEweb and User Resources

Resetting CDX Passwords. CDX passwords expire after 90 days. You will likely need to reset your password. Click the ***Forgot your password?*** link to reset your password. If you do not remember the answers you provided to the security questions you completed when you registered with CDX then you will need to contact the CDX Help Desk at (888) 890-1995. Once you have successfully logged into your CDX account, you may edit the answers to your security questions by clicking the "**My Profile**" tab on the MyCDX webpage.

Import previous year data into current year chemical forms. TRI-MEweb can import prior year

data (if RY 2016 data were provided by the facility in the previous year) into each selected current year TRI chemical form. Although it is optional, importing data can accelerate data entry if the same chemicals are reported to EPA each year. Importing data into any forms that have been already started in TRI-MEweb will result in the data being overwritten by the imported data fields.

Error checker software in TRI-MEweb. Once data entry has been completed or data has been imported into TRI forms using TRI-MEweb, you must click the "**Check for Errors"** button to begin the error checking software in TRI-MEweb. Error checking in TRI-MEweb is applicable for any forms created or revised for RYs 1991- 2017.

Processing TRI forms for Certification. Once you have check for errors using TRI-MEweb's Error Checking procedures and have passed with no detectable critical errors, you can proceed to designate a certifying official to review your completed TRI forms who will then be able to log into TRI-MEweb to review and digitally sign the forms. A certifying official can cancel a form to return it to an editable form should a correction to the form be necessary. If no corrections are needed and the certifying official is ready to submit the form to EPA, the certifying official can digitally sign the form and submit it. To sign and submit a TRI reporting form the certifying official will need to answer to a security question or use a SMS text verification service to verify identity. An email from CDX will confirm that the form has been properly certified and submitted

Uncertified TRI-MEweb Submissions. A facility's registered certifying official must electronically sign Form R and/or Form A reports via TRI-MEweb before the submission is complete. Uncertified TRI-MEweb electronic submissions are not considered complete according to the reporting requirements in EPCRA Section 313. Lack of certification will prevent the submission from being processed. Uncertified TRI forms do not satisfy the requirements of the TRI Program. Failure to adhere to the requirements of section 313 of EPCRA and its implementing regulations could result in an EPA enforcement action against a facility.

TRI-MEweb User Resources

- TRI-MEweb website: https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources.
  Service notifications and reference materials for reporting are posted on this webpage.
- TRI-MEweb online tutorials: https://www.epa.gov/toxics-release-inventory-tri-program/training.
  Online Tutorials that provide step-by step instructions for using TRI-MEweb.

TRI Information Center Hotline [(800) 424-9346 - select option 3] and CDX Help Desk (888) 890-1995. These hotlines provide regulatory reporting assistance and CDX/TRI-MEweb technical support to TRI reporting facilities.

A.2.e. Confirmation of TRI Submission(s) to EPA

You can confirm that you have properly submitted your TRI Form R/ and Form A Certification Statement by the following methods:

TRI-MEweb: Confirmation of your Federal and State/Tribal submission can be found on the *Submission History* tab in the TRI-MEweb application.

CDX Email: A CDX email is sent to the registered email address of the certifying official, preparer and technical contact of the reporting facility after the form has been certified in TRI-MEweb. If you have not received a confirmation email, verify that your registered email address has not changed or that the CDX email is not being diverted to another inbox by your junk/spam email filter.

Electronic Receipt (e-Receipt). After a form is certified and submitted it goes through additional data quality checks. Once the form clears these checks, which may take several days, it enters EPA's TRI database. Once this happens, you will be able to access an e-Receipt in TRI-MEweb by reviewing the "**Submission History**" tab in TRI-MEweb (formerly known as electronic Facility Data Profile or eFDP).

If the facility's Technical Contact provides an email address in the Form R/Form A Certification Statement, they will also receive an email notifying them when their e-Receipt has been published for review in TRI-MEweb. *Please Note*: the technical contact will typically receive this email following the certification and submission of a form; however, data quality checks performed after submittal of the form could delay for several days the sending of this e-Receipt email.

A.2.f. State and Tribal Submissions

Facilities that reside in a state or tribe participating in the TRI Data Exchange (TDX) will have their RY

2005 - 2017 forms sent simultaneously to EPA and their state or tribal TRI representative in electronic format. Find which states are participating in TDX at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange

If the facility is in a state that is not in TDX, then the facility must also send a copy of the report to the state. To verify if your state is or is not in the TDX system, go to: https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange. "State" also includes: the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, Marshall Islands, the U.S. Virgin Islands, the Commonwealth of the Northern Mariana Islands, and any other jurisdiction and Indian country. Refer to Appendix E for the appropriate state submission addresses.

Facilities located within a tribe's Indian country will need to provide their three-digit Bureau of Indian Affairs (BIA) tribal code for their Indian country name in the "City/County/Tribe/State/ZIP code" field on the Form R or Form A in Section 4.1. In TRI-MEweb, these facilities should select the "My facility is located in Indian Country" checkbox and "Add BIA Code," which provides a searchable list of BIA codes and corresponding Indian country names. BIA tribal codes are also provided in Table III.

Hard copies of TRI forms must be mailed to the tribe's Chief Executive Officer because most tribal entities are not members of TDX. If tribes have entered into a cooperative agreement with states, report submissions should be sent to the entity designated in the cooperative agreement. Facilities using TRI-MEweb to fulfill their federal and tribal reporting requirements under EPCRA Section 313 will be able to print a hard copy of the TRI form to mail to their Indian country's Chief Executive Officer.

RYs 1991 - 2004 submissions: If a facility prepares and submits a TRI RY 1991 through RY 2004 form using TRI-MEweb, they must print/save a copy of their TRI form on a disk and send it to their State or Tribal TRI coordinator, even if State or Tribal Country is on the TRI Data Exchange (TDX) network. TDX is not configured to transmit pre-RY 2005 TRI forms.

A.3 Trade Secret Claims

A trade secret claim may be submitted to prevent disclosure of the identity of an EPCRA Section 313 chemical. See Appendix G for instructions on preparing and submitting trade secret claims. Note that trade secret submissions must be on paper and that TRI-MEweb does not support the preparation of trade secret TRI reporting forms.

A.4 Recordkeeping

Sound recordkeeping practices are essential for accurate and efficient TRI reporting. It is in the facility's interest, as well as EPA's, to maintain records properly. Facilities must keep a copy of each report filed for at least three years from the date of submission. These reports will be of use when completing future reports.

Facilities must also maintain those documents, calculations, worksheets, and other forms upon which they relied to gather information for prior reports. In the event of a problem with data elements on a facility's Form R or Form A report, EPA may request documentation from the facility that supports the information reported.

EPA may conduct data quality reviews of Form R or Form A submissions. An essential component of this process involves reviewing a facility's records for accuracy and completeness. EPA recommends that facilities keep a record for those EPCRA Section 313 chemicals for which they did not file EPCRA Section 313 reports.

EPA also recommends keeping records of all documentation containing your CDX account information for your preparer(s) and certifying official(s) that use TRI-MEweb to prepare and certify the reporting facility's TRI Form R and/or Form A. These CDX documents include the Electronic Signature Agreement (ESA) and the facility's unique 6-digit alphanumeric access key.

Records to maintain include:

- Previous years' EPCRA Section 313 reports;
- EPCRA Section 313 Reporting Threshold Worksheets;
- Engineering calculations and other notes;
- Purchase records from suppliers;
- Inventory data;
- EPA (NPDES) permits and monitoring reports;
- EPCRA Section 312 Tier II Reports;
- Monitoring records;
- Flowmeter data;
- RCRA Hazardous Waste Generator's Report;
- Pretreatment reports filed by the facility with the local government;

- Invoices from waste management companies;
- Manufacturer's estimates of treatment efficiencies;
- RCRA manifests;
- Process diagrams that indicate emissions and other releases;
- Records for those EPCRA Section 313 chemicals for which they did not file EPCRA Section 313 reports; and
- CDX account information including unique 6-digit access key to pre-load facility account into TRI-MEweb and copies of the Electronic Signature Agreement (s) submitted to EPA for approval.

A.5 How to Revise, Withdraw or Cancel TRI Data

A.5.a. Revising TRI Data

Facilities that filed a Form R and/or Form A Certification Statement under EPCRA Section 313 may submit a request to revise a form that was previously submitted, stored in EPA's historical database called the Toxics Release Inventory Processing System (TRIPS), and made available to the public through Envirofacts and TRI Explorer.

Facilities may only revise TRI reporting forms submitted for RY 1991 through the current reporting year and must do so using TRI-MEweb.

Facilities may request a revision for one or more of the following reasons:

Revision codes:

- RR1 - New Monitoring Data
- RR2 - New Emission Factor(s)
- RR3 - New Chemical Concentration Data
- RR4 - Recalculation(s)
- RR5 - Other Reason(s)

Please note that late submissions for chemicals not reported in a previous reporting year are not considered revisions for that year.

Facilities are reminded that there is a legal obligation to file an accurate and complete Form R or Form A report for each chemical by July 1 each year. EPA may take enforcement action and assess civil administrative penalties regarding corrections to errors in Form R reports that are not changes based on previously unavailable information or procedures which improve the accuracy of the data initially reported. The kinds of errors which may result in enforcement and in penalties include but are not limited to the following: (1) Errors caused by not using the most readily available information, for example, not using monitoring data collected for compliance with other regulations in calculating releases; (2) omitting a major source of emissions; (3) a mathematical or transcription or typographical error which seriously compromises the accuracy of the information, and; (4) other errors which seriously affect the utility of the data, particularly errors in release reporting for which the facility has no records showing the derivation of the release calculation, and cannot provide a sufficient explanation of the report.

How do I revise my submission(s)?

If you plan to revise a TRI submission, send revised report(s) to EPA and the appropriate state or tribal agency.

Use TRI-MEweb to submit revisions to TRI submissions. EPA will only accept revisions for RY 1991 through the current year.

If you have questions about using TRI-MEweb to revise your Form R/A, please refer to the *TRI-MEweb Tutorials* page at: https://www.epa.gov/toxics-release-inventory-tri-program/training.

A.5.b. Withdrawing TRI Data

Facilities that filed a Form R and/or Form A Certification Statement under EPCRA Section 313 may submit a request to withdraw a form that was previously submitted, stored in the Toxics Release Inventory Processing System (TRIPS), and made available to the public through Envirofacts and TRI Explorer. EPA may periodically review withdrawals.

Use TRI-MEweb to submit revisions to withdraw TRI reporting forms submitted for RY 1991 through the current reporting year.

Facilities may request a withdrawal for one or several reasons, such as:

Withdrawal codes:

- WT1 - Did not meet the reporting threshold for manufacturing, processing, or otherwise use
- WT2 - Did not meet the reporting threshold for number of employees
- WT3 - Not in a covered NAICS Code
- WO1 - Other reason(s)

How do I withdraw my submission(s)?

If you plan to withdraw a TRI submission, send your request to EPA using TRI-MEweb – withdrawals on paper forms will not be accepted. Withdrawal requests for RY 2005 - 2017 forms will be automatically submitted to states participating in the TRI Data Exchange (TDX). Non-TDX state/tribal facilities need to mail in hard copy forms to their state or tribe. Keep in mind that successfully completed withdrawal requests permanently delete the chemical release data that was provided by the reporting facility and processed into TRI's publicly available database.

If the reporting facility needs to make a correction to data submitted to EPA, you should revise the form rather than withdraw and resubmit the form.

Use TRI-MEweb to withdraw TRI forms from RY 1991 through the current year. Withdrawals can only be done for TRI submissions that have been properly completed, certified and processed by EPA. If you have questions about using TRI-MEweb to withdraw your Form R/A, please refer to the *TRI-MEweb Tutorials* page at: https://www.epa.gov/toxics-release-inventory-tri-program/training.

A.5.c. Canceling a TRI Submission

Different situations may require a TRI-MEweb user to cancel an electronic TRI submission. For instance, a facility's preparer or certifying official may determine that a draft electronic submission(s) requires cancellation because the facility's chemical release did not, in fact, meet the reporting thresholds of EPCRA Section 313.

Another reason why a TRI-MEweb submission may require cancellation is if a preparer or certifying official has determined that a correction is needed on a TRI form that is pending certification in CDX, but has not yet been certified. To edit a TRI form in TRI-MEweb that is pending certification to CDX, the preparer will need to cancel the submission with a *Pending Certification* status in order to make the additional corrections in TRI-MEweb and reprocess the original submission or revision to be certified. EPA is considering issuing a Notice of Non-compliance for TRI Forms that have been completed but are not certified.

A preparer or a certifying official cannot cancel a TRI form submission that has already been certified by the certifying official. If a chemical form has a status of *Certified and Sent to EPA* in TRI-MEweb it cannot be called back to be edited or corrected. To change or remove data that has already been certified and submitted to EPA to be processed, either revise or withdraw the submission.

Note: ALL chemical forms that were included in the selected submission will be canceled.

How to Cancel a TRI Submission that has not been Certified. If your facility decides not to complete the certification process for any pending electronic submission(s), you should **CANCEL** the submission(s) using one of the following methods:

By the Preparer: The preparer may use the TRI-MEweb application to cancel any unwanted pending submission(s). In TRI-MEweb, the preparer must click the "Forms Home" subtab under the "**Form**" tab, choose the Reporting Year corresponding to the unwanted submission(s), expand the form summary table by clicking the "+" sign, and select the "delete" button for the chemical form to be cancelled from the *Select a Form* page. T Note: ALL chemical forms that were included in the selected submission will be canceled.

By the Certifying Official: The certifying official may also cancel any unwanted TRI submission(s) pending certification (forms that have been assigned a certifying official). The certifying official must log into their CDX account and click the ***TRI-MEweb: TRI Made Easy*** **–**link from their *MyCDX* page. This will open the *Welcome* page of the TRI-MEweb application and then select the "**Forms**" tab and then select the "Pending Forms" subtab. If certifying official does not find the TRIFID for their reporting facility with pending submissions listed, they gain access to that facility account by entering the access key for the facility listed in the *Pending Authentication* section on the *Manage Facilities* page and signing the TRIFID Signature Agreement on the *Manage TRIFIDs Signature Agreement* page and clicking the "**Next**" button. The electronic signature widget will pop-up to confirm your authorized access to the facility account. Upon successful authentication of user identity, you may begin the cancellation process on the *Pending Forms* page. You may view the content of the submission by clicking the *"**Check for Errors**"* page and navigating to the *Passed Forms* section to confirm that this is the correct submission to be cancelled. Select the "**Cancel**" button to cancel submission.

A.6 When the TRI Report Must Be Submitted

As specified in EPCRA Section 313, the report for any calendar year must be submitted on or before midnight on July 1 of the following year whether using Form R or Form A. If the reporting deadline falls on a Saturday or Sunday, EPA will accept forms submitted on the following Monday (i.e., the next business day).

Any voluntary revision to a report can be submitted anytime during the calendar year for the current or any previous reporting year. However, voluntary revisions for the current reporting year should be submitted by July 31 in order to be included in that year's TRI National Analysis.

Can I submit a paper form if I cannot certify forms before the July 1 deadline? Please note that if you are not able to certify prior to the July 1 deadline, you will not be able to submit on paper. Please ensure you execute an electronic signature agreement (ESA) well ahead of the July 1 deadline. If your certifying official could not certify prior to the July 1 deadline because he or she had not established an approved Electronic Signature Agreement (ESA), he or she should log into CDX once it becomes approved by EPA and certify any pending submission(s). There is a legal obligation to file an accurate and complete Form R or Form A report for each chemical by July 1 each year if TRI reporting is required, and EPA may take enforcement action and assess civil administrative penalties in regard to late or inaccurate submissions.

If a facility could not process their ESA on time, should their certifying official still certify electronically after the July 1 deadline? Yes. EPA encourages a facility to have a certifying official complete an ESA well before the July 1 deadline. Additionally, EPA provides a real-time ESA approval method in CDX that will allow most certifying officials instantaneous ESA approval to allow for ESA approval ahead of the July 1 deadline (see A.2.c Electronic Signature Agreement above for more details). However, if a certifying official cannot certify prior to the July 1 deadline because they do not have an approved ESA in place, they should log into CDX once it becomes approved by EPA and certify any pending forms(s). They may also call the CDX Helpdesk for support on using the real-time ESA option. There is a legal obligation to file an accurate and complete Form R or Form A report for each chemical by July 1 each year if TRI reporting is required, and EPA may take enforcement action and assess civil administrative penalties in regard to late or inaccurate submissions.

A.7 How to Obtain the TRI Reporting Forms

The TRI Form R, Form R Schedule 1, Form A Certification Statement, and related guidance documents may be obtained from EPA's GuideME website at: https://www.epa.gov/toxics-release-inventory-tri-program/reporting-forms-and-instructions. *However, non-trade-secret TRI reporting forms must be submitted to EPA using TRI-MEweb.* Except for trade secrets, paper forms are no longer processed by EPA. Please do not send any paper forms (except for trade secret submissions) to EPA's Data Processing Center.

A.8 What to Do If You Do Not Need to Submit any TRI Reports?

If a facility does not exceed an activity threshold for any listed toxic chemical, or is not in a covered NAICS code, or does not have ten or more full time employees, it is not required under EPCRA Section 313 to report (see **Section B. How to Determine if Your Facility Must Submit a Form R or Is Eligible to Use Form A** for more information on TRI reporting thresholds**)**. Further, such a facility is not required to maintain any records associated with its uses, releases, or other waste management activities involving listed toxic chemicals. Such facilities, however, may want to keep records of the amounts of listed toxic chemicals they manufacture, process, or otherwise use in order to defend against any claim that they failed to report.

TRI-MEweb allows a facility to indicate that it is not reporting should a facility elect to do so. On the **Manage Facilities** screen, the "**Take Action**" button for the facility provides a "**Not Reporting?**" option, which a facility may opt to use to indicate that it is not reporting for one or more chemicals.

See **Section F. Optional Facility-Level Information and Non-Reporting** for more information on how to elect to inform EPA that you will not be submitting one or more reporting forms for the current reporting year.

B. How to Determine if Your Facility Must Submit a Form R or Is Eligible to Use Form A

This section will help you determine whether you must submit an EPCRA Section 313 report (EPA Form R or Form A Certification Statement). This section discusses EPCRA Section 313 reporting requirements such as the number of full-time employees, primary NAICS code, and chemical activity threshold quantities. The EPCRA Section 313 chemicals and chemical categories subject to reporting are listed in Table II (also see 40 CFR 372.65). (See Figure 2 for more information.)

B.1 Full-Time Employee Determination

The number of full-time employees is dependent only upon the total number of hours worked by all employees and other individuals (e.g., contractors) for the facility during the calendar year and not the number of persons working. Therefore, a full-time employee, for purposes of EPCRA Section 313 reporting, is defined as 2,000 work hours per year. When making the full-time employee determination, the facility must consider all paid vacation and sick leave used as hours worked by each employee. In addition, EPA interprets the hours worked by an employee to include paid holidays. To determine the number of full-time employees working for your facility, add up the hours worked by all employees during the calendar year, including contract employees and sales and support staff working for the facility, and divide the total by 2,000 hours. The result is the number of full-time employees. In other words, if the total number of hours worked by all employees for your facility is 20,000 hours or more, your facility meets the ten employee threshold.

Examples:

- A facility consists of 11 employees who each worked 1,500 hours for the facility in a calendar year. Consequently, the total number of hours worked by all employees for the facility during the calendar year is 16,500 hours. The number of full-time employees for this facility is equal to 16,500 hours divided by 2,000 hours per full-time employee, or 8.3 full-time employees. Therefore, even though 11 persons worked for this facility during the calendar year, the number of hours worked is equivalent to 8.3 full-time employees. This facility does not meet the employee criteria and is not subject to EPCRA Section 313 reporting.
- Another facility consists of six workers and three sales staff. The six workers each worked 2,000 hours for the facility during the calendar year. The sales staff also each worked 2,000 hours during the calendar year although they may have been on the road half of the year. In addition, five contract employees were hired for a period during which each worked 400 hours for the facility. The total number of hours is equal to the time worked by the workers (12,000 hours), plus the time worked by the sales staff for the facility (6,000 hours), plus the time worked by the contract employees (2,000 hours), or 20,000 hours. Dividing the 20,000 hours by 2,000 yields 10 full-time employees. This facility has met the full-time employee criteria and may be subject to reporting if the other criteria are met.

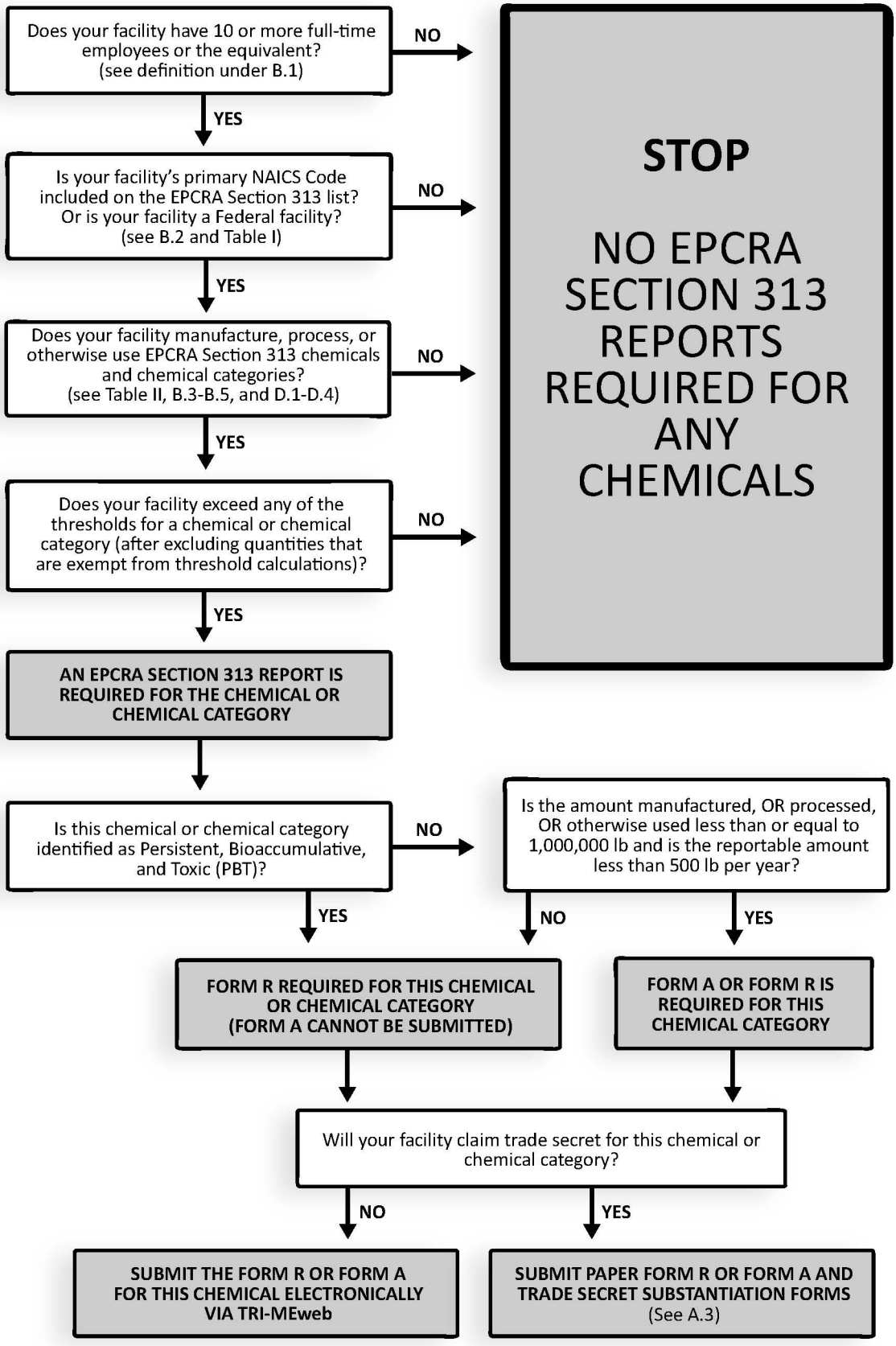

Figure 2. EPCRA Section 313 Reporting Decision Diagram

B.2 Primary NAICS Code Determination

The facility should determine its own NAICS code(s), based on its activities on-site using the by conducting NAICS keyword and NAICS 2 to 6-digit code searches on the Census Bureau website at:
http://www.census.gov/eos/www/naics/
or referring to the 2017 NAICS Definitions at: https://www.census.gov/eos/www/naics/2017NAICS/2017_NAICS_Manual.pdf.

For purposes of EPCRA Section 313 reporting, state assigned codes should not be used if they differ from codes assigned using the NAICS Manual.

The full list of NAICS codes for facilities that must report to TRI (including exceptions and/or limitations) if all other threshold determinations are met can be found in Table I and also at the TRI website at: https://www.epa.gov/toxics-release-inventory-tri-program/my-facilitys-six-digit-naics-code-tri-covered-industry.

Beginning with Reporting Year 2006, the TRI Program requires North American Industry Classification System (NAICS) codes instead of Standard Industrial Classification (SIC) codes. NAICS codes found in Table I correspond to the following Standard Industrial Classification (SIC) Codes: SIC 10 (except 1011, 1081, and 1094), 12 (except 1241), 20-39, 4911 (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce), 4931 (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce), 4939 (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce), 4953 (limited to facilities regulated under RCRA Subtitle C, 42 U.S.C. Section 6921 *et seq*.), 5169, 5171, and 7389 (limited to facilities primarily engaged in solvents recovery services on a contract or fee basis).

A final rule was published in the Federal Register on December 26, 2017 (82 FR 52674) to adopt 2017 NAICS codes for RY 2017 and subsequent reporting years.

B.2.a. Auxiliary Facilities

Under the Standard Industrial Classification (SIC) system, an auxiliary facility was defined as one that supported another covered establishment's activities (e.g., research and development laboratories, warehouses, and storage facilities). An auxiliary facility could assume the SIC code of another covered establishment if its primary function was to service that other covered establishment's operations. The North American Industry Classification System (NAICS), that replaces the SIC system for TRI reporting, does not recognize the concept of auxiliary facilities and assigns NAICS codes to all establishments based on economic activity. In its rulemaking, "Toxic Chemical Release Reporting Using North American Industry Classification System," the TRI Program has adopted NAICS for TRI reporting and also the NAICS treatment of former "auxiliary facilities" as entities with their own distinct NAICS code.

B.2.b. Multi-establishment Facilities

Your facility may include multiple establishments that have different NAICS codes. A multi-establishment facility is a facility that consists of two or more distinct and separate economic units. If your facility is a multi-establishment facility, calculate the value added of the products produced, shipped, or services provided from each establishment within the facility and then use the following rule to determine if your facility meets the NAICS code criterion:

- If the total value added of the products produced, shipped, or services provided at establishments with covered NAICS codes is greater than 50 percent of the value added of the entire facility's products and services, the entire facility meets the NAICS code criterion.
- If any one establishment with a covered NAICS code has a value added of services or products shipped or produced that is greater than any other establishment within the facility (40 CFR Section 372.22(b)(3)) the facility also meets the NAICS code criterion (see Figure 3).

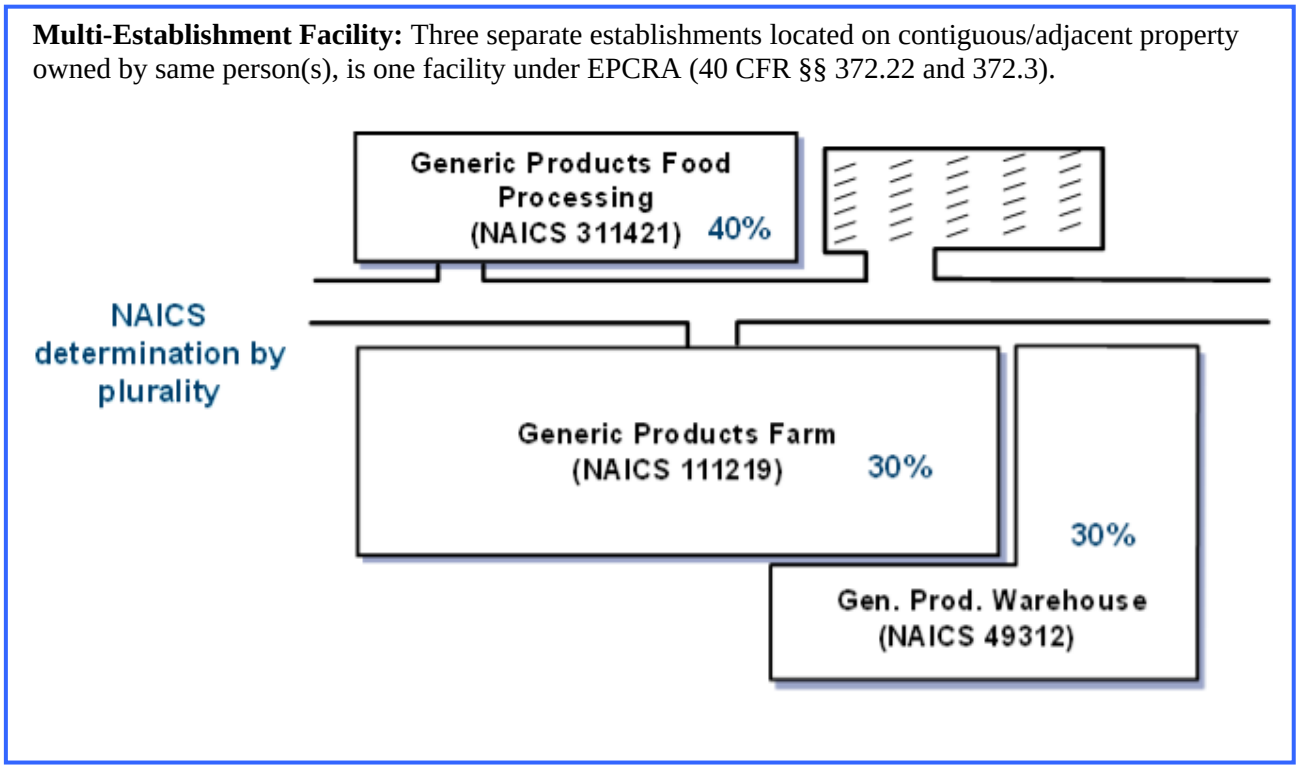

Figure 3. Example of a Multi-Establishment Facility

The value added of production or service attributable to a particular establishment may be isolated by subtracting the product value obtained from other establishments within the same facility from the total product or service value of the facility. This procedure eliminates the potential for "double counting" production and services in situations where establishments are engaged in sequential production or service activities at a single facility.

Examples include:

- A facility in coating, engraving and allied services has two establishments. The first establishment, a general automotive repair service, is in NAICS code 811113 (SIC 7537), which is not a covered NAICS code. However, the second establishment, a metal paint shop is in NAICS code 332812 (SIC 3479, which is a covered NAICS code). The metal paint shop paints the parts received from general automotive repair service. The facility determines the product is worth $500/unit as received from the general automotive repair service (in non-covered NAICS code 811113) and the value of the product is $1500/unit after processing by the metal paint shop (in covered NAICS code 332812). The value added by the metal paint shop is obtained by subtracting the value of the products from the general automotive repair service from that of the value of the products of the metal paint shop. (In this example, the value added = $1,500/unit - $500/unit = $1,000/unit.) The value added ($1,000/unit) by the establishment in NAICS code 332812 is more than 50 percent of the product value. Therefore, the facility's primary NAICS code is 332812, which is a covered NAICS code.
- A food processing establishment in a facility processes crops grown at the facility in a separate establishment. To determine the value added of the products of each establishment the facility could first determine the value of the crops grown at the agricultural establishment, and then calculate the contribution of the food processing establishment by subtracting the crop value from the total value of the product shipped from the processing establishment (value of product shipped from processing - crop value = value of processing establishment).

A covered multi-establishment facility must make EPCRA Section 313 chemical threshold determinations and, if required, report all relevant information about releases and other waste management activities, and source reduction activities associated with an EPCRA Section 313 chemical **for the entire facility**, even from establishments that are not in covered NAICS codes. EPA realizes, however, that certain establishments in a multi-establishment facility can be, for all practical purposes, separate and distinct business units. Therefore, while threshold determinations must be made for the entire facility, individual establishments which compose the entire facility may report their individual releases and other waste management activities separately. However, the total releases and other waste management quantities for the entire facility must be represented by the sum of the releases and other quantities managed as waste reported by each of the separate establishments. Note that establishments report using the same TRIFID that is used for the multi-establishment facility as a whole.

B.2.c. Property Owners

You are not required to report if you merely own real estate on which a facility covered by this rule is located; that is, you have no other business interest in the operation of that facility (e.g., your company owns an industrial park). The operator of that facility, however, is subject to reporting requirements.

B.2.d. Federal Facilities

In 1993, pursuant to an Executive Order (EO), federal facilities began complying with Section 313 of EPCRA regardless of their primary North American Industry Classification System (NAICS) code. Subsequent EOs reinforced this requirement, with EO 13693 being the most recent EO on this requirement. As a result, all federal facilities, regardless of NAICS code, must report if they meet the employment and chemical activity thresholds. See Appendix A for additional information on Federal Facility reporting requirements.

B.3 Activity Determination

B.3.a. Definitions of Manufacture, Process, and Otherwise Use

Manufacture: The term ***"manufacture"*** means to produce, prepare, compound, or import an EPCRA Section 313 chemical. (See Part II, Section 3.1 of these instructions for further clarification.)

Import is defined as causing the EPCRA Section 313 chemical to be imported into the customs territory of the United States. If you order an EPCRA Section 313 chemical (or a mixture containing the chemical) from a foreign supplier, then you have imported the chemical when that shipment arrives at your facility directly from a source outside of the United States. By ordering the chemical, you have caused it to be imported, even though you may have used an import brokerage firm as an agent to obtain the EPCRA Section 313 chemical.

Do Not Overlook Coincidental Manufacture

The term ***"manufacture"*** also includes coincidental production of an EPCRA Section 313 chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, otherwise use or disposal of another chemical or mixture of chemicals. In the case of coincidental production of an impurity (i.e., an EPCRA Section 313 chemical that remains in the product that is distributed in commerce), the *de minimis* exemption, discussed in Section B.3.c of these instructions, applies. The *de minimis* exemption does not apply to byproducts (e.g., an EPCRA Section 313 chemical that is separated from a process stream and further processed or disposed of). Certain EPCRA Section 313 chemicals may be manufactured as a result of wastewater treatment or other treatment processes. For example, neutralization of wastewater containing nitric acid can result in the coincidental manufacture of a nitrate compound (solution), reportable as a member of the nitrate compounds category.

Process: The term ***"process"*** means the preparation of a listed EPCRA Section 313 chemical, after its manufacture, for distribution in commerce. Processing is usually the incorporation of an EPCRA Section 313 chemical into a product (see Part II, Section 3.2 of these instructions for further clarification). However, a facility may process an impurity that already exists in a raw material by distributing that impurity in commerce. Processing includes preparation of the EPCRA Section 313 chemicals in the same physical state or chemical form as that received by your facility, or preparation that produces a change in physical state or chemical form. The term also applies to the processing of a mixture or other trade name product (see Section B.4.b of these instructions) that contains a listed EPCRA Section 313 chemical as one component.

Otherwise Use: The term ***"otherwise use"*** means any use of an EPCRA Section 313 chemical, including an EPCRA Section 313 chemical contained in a mixture or other trade name product or waste, that is not covered by the terms manufacture or process. Otherwise use of an EPCRA Section 313 chemical includes disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction if:
(1) The EPCRA Section 313 chemical that was disposed of, stabilized, or treated for destruction was received from off-site for the purposes of further waste management;

Or

(2) The EPCRA Section 313 chemical that was disposed of, stabilized, or treated for destruction was manufactured as a result of waste management activities on materials received from off-site for the purposes of waste management activities. Relabeling or redistributing of the EPCRA Section 313 chemical where no repackaging of the EPCRA Section 313 chemical occurs does not constitute an otherwise use or processing of the EPCRA Section 313 chemical. (See 62 FR 23846 and Part II, Section 3.3 of these instructions for further clarification).

Example 1: Coincidental Manufacture

- Your company, a nitric acid manufacturer, uses aqueous ammonia in a waste treatment system to neutralize an acidic wastewater stream containing nitric acid. The reaction of ammonia and nitric acid produces a solution of ammonium nitrate. Ammonium nitrate (solution) is reportable under the nitrate compounds category and is manufactured as a byproduct. If the ammonium nitrate is produced in a quantity that exceeds the 25,000-pound manufacturing threshold, the facility must report under the nitrate compounds category.

  The aqueous ammonia is considered to be otherwise used and 10 percent of the total aqueous ammonia would be counted towards the 10,000-pound otherwise use threshold. Reports for releases of ammonia must also include 10 percent of the total aqueous ammonia from the solution of ammonium nitrate (see the qualifier for the ammonia listing).

- As another example, combustion of coal or other fuel in boilers/furnaces can result in the coincidental manufacture of metal category compounds and sulfuric acid (acid aerosols), hydrochloric acid (acid aerosols), and hydrogen fluoride.

Example 2: Typical Process and Manufacture Activities

- Your company receives toluene, an EPCRA Section 313 chemical, from another facility, and reacts the toluene with air to form benzoic acid, which the company distributes in commerce. Your company processes toluene and manufactures and processes benzoic acid. Benzoic acid, however, is not an EPCRA Section 313 chemical and thus does not trigger reporting requirements.
- Your facility combines toluene purchased from a supplier with various materials to form paint which it then sells. Your facility processes toluene.
- Your company receives a nickel compound (nickel compounds is a listed EPCRA Section 313 chemical category) as a bulk solid and performs various size-reduction operations (e.g., grinding) before packaging the compound in 50-pound bags, which the company sells. Your company processes the nickel compound.
- Your company receives a prepared mixture of resin and chopped fiber to be used in the injection molding of plastic products. The resin contains a listed EPCRA Section 313 chemical that becomes incorporated into the plastic, which the company distributes in commerce. Your facility processes the EPCRA Section 313 chemical.
- In the combustion of coal or oil, metal category compounds may be produced from either the parent metal or a metal compound contained in the coal or oil. If a metal undergoes a change of valence, a metal compound is considered to be manufactured. For example, during the combustion process copper in valence state zero changes to copper in valence state +2 in a compound such as copper (II) oxide (CuO). Furthermore, a metallic compound could be transformed to another metallic compound without a change in valency (e.g., copper (II) chloride (CuCl2) is transformed to copper (II) oxide (CuO)). The transformation to a new compound by combustion without a change in valence state is also considered to be "manufactured" for purposes of EPCRA Section 313.

Example 3: Typical Otherwise Use Activities

- When your facility cleans equipment with toluene, you are otherwise using toluene. Your facility also separates two components of a mixture by dissolving one component in toluene, and subsequently recovers the toluene from the process for reuse or disposal. Your facility otherwise uses toluene.
- A covered facility receives a waste containing 12,000 pounds of Chemical A, a non-PBT EPCRA Section 313 chemical, from off-site. The facility treats the waste, destroying Chemical A and in the treatment process manufactures 10,500 pounds of Chemical B, another non-PBT EPCRA Section 313 chemical. Chemical B is disposed of on-site. Since the waste containing Chemical A was received from off-site for the purpose of waste management, the amount of Chemical A must be included in the otherwise use threshold determination for Chemical A. The otherwise use threshold for a non-PBT chemical is 10,000 pounds and since the amount of Chemical A exceeds this threshold, all releases and other waste management activities for Chemical A must be reported. Chemical B was manufactured in the treatment of a waste received from off-site. The facility disposed of Chemical B on-site. Since Chemical B was generated from waste received from off-site for treatment for destruction, disposal, or stabilization, the disposal of Chemical B is considered to be an otherwise use. Thus, the amount of Chemical B must be considered in the otherwise use threshold determination. Thus, the reporting threshold for Chemical B has also been exceeded and all releases and other waste management activities for Chemical B must be reported.

B.3.b. Persistent Bioaccumulative Toxic (PBT) Chemicals and Chemical Categories Overview

On October 29, 1999, EPA published a final rule (64 FR 58666) adding certain chemicals and chemical categories to the EPCRA Section 313 list of toxic chemicals and lowering the reporting threshold for persistent bioaccumulative toxic (PBT) chemicals. In addition, on January 17, 2001, EPA published a final rule (66 FR 4500) that classified lead and lead compounds as PBT chemicals and lowered their reporting thresholds. The lower reporting thresholds for lead applies to all lead except when lead is contained in a stainless steel, brass or bronze alloy.

Dioxin and dioxin-like compounds, lead compounds, mercury compounds and polycyclic aromatic compounds (PACs) are the four PBT chemical categories with lower reporting thresholds. The 17 members of the dioxin and dioxin-like compounds category and the 21 members of the PACs category are listed in Table IIc of these instructions. The dioxin and dioxin-like compounds category has the qualifier, "Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical."

EPA has added six individual chemicals to the EPCRA Section 313 list of toxic chemicals that also had their thresholds lowered:

- benzo(g,h,i)perylene,
- benzo(j,k)fluorene (fluoranthene),
- 3-methylcholanthrene,
- octachlorostyrene,
- pentachlorobenzene, and
- tetrabromobisphenol A (TBBPA).

Benzo(j,k)fluorene and 3-methyl-cholanthrene were added as members of the polycyclic aromatic compounds (PACs) chemical category.

EPA lowered the reporting thresholds for PBT chemicals to either 100 pounds, 10 pounds, or in the case of the dioxin and dioxin-like compounds chemical category, to 0.1 grams. The table at the beginning of Section B.4 of these instructions lists the applicable manufacture, process, and otherwise use thresholds for the listed PBT chemicals.

EPA eliminated the *de minimis* exemption for all PBT chemicals (except lead when contained in stainless steel, brass or bronze alloy). However, this action does not affect the applicability of the *de minimis* exemption to the supplier notification requirements (40 CFR Section 372.45(d) (1)). In addition, PBT chemicals are ineligible for range reporting for on-site releases and transfers off-site for further waste management. This will not affect the applicability of range reporting of the maximum amount on-site as required by EPCRA Section 313(g).

All releases and other waste management quantities greater than 0.1 pounds of a PBT chemical (except the dioxin and dioxin like compounds chemical category) should be reported at a level of precision supported by the accuracy of the underlying data and estimation techniques on which the estimate is based. If a facility's release or other waste management estimates support reporting an amount that is more precise than whole numbers, then the more precise amount should be reported.

PBT chemical values of $\leq$ 0.1 pounds (e.g., 0.07 pounds) should either be rounded up to 0.1 pound or reported as they are if the underlying data and estimation techniques support that level of precision. It is up to the facility to determine, based on the accuracy of the underlying data and the estimation techniques on which the estimate is based, whether it would be appropriate to round the value to 0.1 pound, report the value as is, or round the value to zero.

For the dioxin and dioxin-like compounds chemical category, which has a reporting threshold of 0.1 grams, facilities need only report all release and other waste management quantities greater than 100 micrograms (i.e., 0.0001 grams). Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on the Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision to seven digits to the right of the decimal. If a facility has information on the individual members of the dioxin and dioxin-like compounds category they will also need to report the release and transfer quantities of each congener (see instructions in Section D).

Lead and Lead Compounds

Lead and lead compounds are classified as PBT chemicals and are subject to the lower manufacturing, processing and otherwise use threshold of 100 pounds. However, when lead is contained in stainless steel, brass, or bronze alloys it remains subject to the higher 25,000 pound manufacturing and processing thresholds and the 10,000 pound otherwise use threshold.

Listed below are some important guidelines to use when calculating threshold and release and other waste management quantities for lead and lead compounds:

1) quantities of lead not contained in stainless steel, brass or bronze alloy are applied to both the 100-pound threshold and the 25,000/10,000 pound thresholds;
2) quantities of lead that are contained in stainless steel, brass or bronze alloys are only applied toward the 25,000/10,000 pound thresholds;
3) a facility may take the *de minimis* exemption for those quantities of lead in stainless steel, brass, or bronze alloys that meet the *de minimis* standard (e.g., manufactured as an impurity). Accordingly, the *de minimis* exemption may be considered for quantities of lead in stainless steel, brass, or bronze alloys but it may not be considered for lead not in stainless steel, brass, or bronze alloys;
4) If a facility exceeds the 100-pound threshold for lead other than in stainless steel, brass, or bronze alloys, the facility may not apply Form A eligibility for non-PBTs, range reporting in Sections 5 and 6 of the Form R or the use of whole numbers and 2 significant digits to any of the lead they report. If a facility that exceeds the 25,000/10,000 pound threshold for lead in stainless steel, brass, or bronze alloy without tripping the 100-pound threshold for non-alloyed lead, the facility may consider the Form A requirements for non-PBTs, range reporting in Sections 5 and 6 of the Form R, and the use of whole numbers and 2 significant digits.

B.3.c. Activity Exemptions

Otherwise Use Exemptions. Certain otherwise uses of listed EPCRA Section 313 chemicals are specifically exempted:

- Otherwise use as a structural component of the facility;
- Otherwise use in routine janitorial or facility grounds maintenance;
- Personal uses by employees or other persons;
- Otherwise use of products containing EPCRA Section 313 chemicals for the purpose of maintaining motor vehicles operated by the facility; and
- Otherwise use of EPCRA Section 313 chemicals contained in intake water (used for processing or non-contact cooling) or in intake air (used either as compressed air or for combustion).

The exemption of an EPCRA Section 313 chemical otherwise used 1) as a structural component of the facility; or 2) in routine janitorial or facility grounds maintenance; or 3) for personal use by an employee cannot be taken for activities involving process related equipment.

Articles Exemption. EPCRA Section 313 chemicals contained in articles that are processed or otherwise used at a covered facility are exempt from threshold determinations and release and other waste management calculations. The exemption applies when the facility receives the article from another facility or when the facility produces the article itself. The exemption applies only to the quantity of EPCRA Section 313 chemical present in the article. If the EPCRA Section 313 chemical is manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity, the facility is required to report that use of a chemical (40 CFR Section 372.38(b)). For an EPCRA Section 313 chemical in an item to be exempt as part of the article, the item must meet all the following criteria in the EPCRA Section 313 article definition; that is, it must be a manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use functions dependent in whole or in part upon its shape or design during end use, and (3) which does not release a toxic chemical under normal conditions of processing or use of the item at the facility.

If the processing or otherwise use of all like items results in a total release of 0.5 pound or less of an

EPCRA Section 313 chemical in a reporting year to any environmental medium, EPA will allow this release to be rounded to zero, and the manufactured items retain their article status. The 0.5 pound threshold does not apply to each individual article, but applies to the sum of all releases from processing or otherwise use of all like articles. If all the releases of like articles over a reporting year are completely captured and recycled/reused on-site or off-site, those items retain their article status. Any amount that is released and is not recycled/reused will count toward the 0.5 pound per year cut off value.

The articles exemption applies to the normal processing or use of articles. This exemption does not apply to the manufacture of the article. EPCRA Section 313 chemicals incorporated into articles produced at a facility must be factored into threshold determinations and release and other waste management calculations.

Example 4: Articles Exemption

- Nickel that is incorporated into a brass doorknob is processed to manufacture the brass doorknob, and therefore must be counted toward threshold determinations and release and other waste management calculations. However, the use of the brass doorknobs elsewhere in the facility does not have to be counted. Disposal of the brass doorknob after its use does not constitute a "release;" thus, the brass doorknob remains an article.
- If an item used in the facility is fragmented, the item is still an article if those fragments being discarded remain identifiable as the article (e.g., recognizable pieces of a cylinder, pieces of wire). For instance, an eight-foot piece of wire is cut into two four-foot pieces of wire, without releasing any EPCRA Section 313 chemicals. Each four-foot piece is identifiable as a piece of wire; therefore, the article status for these pieces of wire remains intact.
- EPCRA Section 313 chemicals received in the form of pellets are not articles because the pellet form is simply a convenient form for further processing of the material.

If, in the course of processing or use, an item retains its initial thickness or diameter, in whole or in part, it meets the first part (i.e., it must be a manufactured item which is formed to a specific shape or design during manufacture) of the article definition. If the item's basic dimensional characteristics are totally altered during processing or otherwise use, the item does not meet the first part of the definition. An example of items that do not meet the definition would be items that are cold extruded, such as lead ingots, which are formed into wire or rods. On the other hand, cutting a manufactured item into pieces that are recognizable as the article would not change the original dimensions as long as the diameter or the thickness of the item remained the same; the articles exemption would continue to apply. Metal wire may be bent and sheet metal may be cut, punched, stamped, or pressed without losing their article status as long as the diameter of the wire or tubing or the thickness of the sheet is not totally changed.

What constitutes a release of an EPCRA Section 313 chemical is important since processing or otherwise use of articles that result in a release to the environment (or more than 0.5 pounds) negate the article status and precludes eligibility for the exemption. Cutting, grinding, melting, or other processing of manufactured items could result in a release of an EPCRA Section 313 chemical during normal conditions of processing or otherwise use and therefore negate the exemption as articles.

***De Minimis* Exemption.** The *de minimis* exemption allows facilities to disregard certain minimal concentrations of non-PBT chemicals in mixtures or other trade name products when making threshold determinations and release and other waste management calculations. The *de minimis* exemption does not apply to the manufacture of an EPCRA Section 313 chemical except if that EPCRA Section 313 chemical is manufactured as an impurity and remains in the product distributed in commerce, or if the EPCRA Section 313 chemical is imported below the appropriate *de minimis* level. The *de minimis* exemption does not apply to a byproduct manufactured coincidentally as a result of manufacturing, processing, otherwise use, or any waste management activities. The *de minimis* exemption does not apply to any PBT chemical (except lead when it is contained in stainless steel, brass or bronze alloy) or PBT chemical category. A list of PBT chemicals may be found in Section B.4 of these instructions.

When determining whether the *de minimis* exemption applies to an EPCRA Section 313 chemical, the owner/operator must consider the concentration of the non-PBT EPCRA Section 313 chemical in mixtures and other trade name products.

If the non-PBT EPCRA Section 313 chemical in a mixture or other trade name product is manufactured as an impurity, imported, processed, or otherwise used and is below the appropriate *de minimis* concentration level, then the quantity of the non-PBT EPCRA Section 313 chemical in that mixture or other trade name product does not have to be applied to threshold determinations nor included in release or other waste management determinations. If a non-PBT EPCRA Section 313 chemical in a mixture or other trade name product is below the appropriate *de minimis* level, all releases and other waste management activities associated with the EPCRA Section 313 chemical in that mixture or other trade name product are exempt from EPCRA Section 313 reporting. It is possible to meet an activity (e.g., processing) threshold for an EPCRA Section 313 chemical on a facility wide basis, but not be required to calculate releases or other waste management quantities associated with a particular process because that process involves only mixtures or other trade name products containing the non-PBT EPCRA Section 313 chemical below the *de minimis* level.

EPA interprets the *de minimis* exemption such that once a non-PBT EPCRA Section 313 chemical concentration is at or above the appropriate *de minimis* level in the mixture or other trade name product threshold determinations and release and other waste management calculations must be made, even if that chemical later falls below the *de minimis* level in the same mixture or other trade name product. Thus, EPA considers reportable all releases and other quantities managed as waste that occur after the *de minimis* level has been met or exceeded. If an EPCRA Section 313 chemical in a mixture or other trade name product at or above *de minimis* is brought on-site, the *de minimis* exemption never applies.

De minimis levels for non-PBT EPCRA Section 313 chemicals and chemical categories are set at concentration levels of either 1 percent or 0.1 percent; PBT chemicals and chemical categories do not have *de minimis* levels with regard to this exemption. The 0.1 percent *de minimis* levels are dictated by determinations made by the National Toxicology Program (NTP) in its Annual Report on Carcinogens, the International Agency for Research and Cancer (IARC) in its Monographs, or 29 CFR part 1910, subpart Z. Therefore, once a non-PBT chemical's status under NTP, IARC, or 29 CFR part 1910, subpart Z indicates that the chemical is a carcinogen or potential carcinogen, the reporting facility may disregard levels of the chemical below the 0.1 percent *de minimis* concentration provided that the other criteria for the *de minimis* exemption are met. *De minimis* levels for chemical categories apply to the total concentration of all chemicals in the category within a mixture, not the concentration of each individual category member within the mixture.

De Minimis Application to the Processing or Otherwise Use of a Mixture

The *de minimis* exemption applies to the processing or otherwise use of a non-PBT EPCRA Section 313 chemical in a mixture. Threshold determinations and release and other waste management calculations begin at the point where the chemical meets or exceeds the *de minimis* level. If a non-PBT EPCRA Section 313 chemical is present in a mixture at a concentration below the *de minimis* level, this quantity of the substance does not have to be included for threshold determinations, release and other waste management reporting, or supplier notification requirements. The exemption will apply as long as the mixture containing *de minimis* amounts of a non-PBT EPCRA Section 313 chemical never equals or goes above the *de minimis* limit.

Example 5: *De Minimis* Applications to Process and Otherwise Use Scenarios for Non-PBT Chemicals

There are many cases in which the *de minimis* "limit" is crossed or re-crossed by non-PBT chemicals within a process or otherwise use scenario. The following examples are meant to illustrate these complex reporting scenarios.

Increasing Concentration To or Above *De Minimis* Levels During Processing for Non-PBT Chemicals

A manufacturing facility receives toluene that contains chlorobenzene at a concentration below its *de minimis* limit. Through distillation, the chlorobenzene content in process streams is increased over the *de minimis* concentration of 1 percent. From the point at which the chlorobenzene concentration equals 1 percent in process streams, the amount present must be factored into threshold determinations and release and other waste management estimates. The facility does not need to consider the amount of chlorobenzene in the raw material when below *de minimis* levels, i.e., prior to distillation to 1 percent, when making threshold determinations. The facility does not have to report emissions of chlorobenzene from storage tanks or any other equipment associated with that specific process where the chlorobenzene content is less than 1 percent.

Fluctuating Concentration During Processing for Non-PBT Chemicals

A manufacturer produces an ink product that contains toluene, an EPCRA Section 313 chemical, below the *de minimis* level. The process used causes the percentage of toluene in the mixture to fluctuate: it rises above the *de minimis* level for a time but drops below the level as the process winds down. The facility must consider the chemical toward threshold determinations from the point at which it first equals the *de minimis* limit. Once the *de minimis* limit has been met the exemption cannot be taken.

Concentration Ranges Straddling the *De Minimis* Value

There may be instances in which the concentration of a non-PBT chemical is given as a range straddling the *de minimis* limit. Example 6 illustrates how the *de minimis* exemption should be applied in such a scenario.

***De Minimis* Application in the Manufacture of the Listed Chemical in a Mixture**

The *de minimis* exemption generally does not apply to the manufacturing of an EPCRA Section 313 chemical. However, the *de minimis* exemption may apply to mixtures and other trade name products containing non-PBT EPCRA Section 313 chemicals that are imported into the United States. (See Example 5)

The exemption also applies to non-PBT EPCRA Section 313 chemicals that are manufactured as impurities that remain in the product distributed in commerce below the *de minimis* levels. The amount remaining in the product is exempt from threshold determinations. If the chemical is separated from the final product, it cannot qualify for the exemption. Any amount that is separated, or is separate, from the product, is considered a byproduct and is subject to threshold determinations and release and other waste management calculations. Any amount of an EPCRA Section 313 chemical that is manufactured in a waste stream must be considered toward threshold determinations and release and other waste management calculations and accounted for on Form R even if that chemical is manufactured below the *de minimis* level.

The *de minimis* exemption also does not apply to situations where a toxic chemical in waste is diluted to below the *de minimis* level.

Example 6: Concentration Ranges Straddling the *De Minimis* Value

Scenario 1: A facility processes 8,000,000 pounds of a mixture containing 0.25 to 1.25 percent manganese. Manganese is eligible for the *de minimis* exemption at concentrations up to 1 percent. The amount of mixture subject to reporting is the quantity containing manganese at or above the *de minimis* concentration:

[(8,000,000) × (1.25% - 0.99%)] ÷ (1.25% - 0.25%)

The average concentration of manganese that is not exempt (above the *de minimis*) is:

(1.25% + 1.00%) ÷ (2)

Therefore, the amount of manganese that is subject to threshold determination and release and other waste management estimates is:

$$\left[\frac{(8{,}000{,}000)\times(1.25\% - 0.99\%)}{(1.25\% - 0.25\%)}\right] \times \left[\frac{(1.25\% + 1.00\%)}{(2)}\right] = 23{,}400\,pounds$$

= 23,400 pounds manganese (which is below the processing threshold for manganese)

In this scenario, because the facility's information pertaining to manganese was available to two decimal places, 0.99 was used to determine the amount below the *de minimis* concentrations. If the information was available to one decimal place, 0.9 should be used, as in the scenario below.

Scenario 2: As in the previous example, manganese is present in a mixture, of which 8,000,000 pounds is processed. The SDS states the mixture contains 0.2 percent to 1.2 percent manganese. The amount of mixture subject to reporting (at or above *de minimis* limit) is:

[(8,000,000) × (1.2% - 0.9%)] ÷ (1.2% - 0.2%)

The average concentration of manganese that is not exempt (at or above *de minimis* limit) is:

(1.2% + 1.0%) ÷ (2)

Therefore, the amount of manganese that is subject to threshold determinations and release and other waste management estimates is:

$$\left[\frac{(8{,}000{,}000)\times(1.2\% - 0.9\%)}{(1.2\% - 0.2\%)}\right] \times \left[\frac{(1.2\% + 1.0\%)}{(2)}\right] = 26{,}400\,pounds$$

= 26,400 pounds manganese (which is above the processing threshold for manganese)

Example 7: *De Minimis* Application in the Manufacture of a Toxic Chemical in a Mixture

Manufacture as a Product Impurity

Toluene 2,4 diisocyanate reacts with trace amounts of water to form trace quantities of 2,4-diaminotoluene. The resulting product contains 99 percent toluene 2,4-diisocyanate and 0.05 percent 2,4-diaminotoluene. The 2,4 diaminotoluene would not be subject to EPCRA Section 313 reporting nor would supplier notification be required because the concentration of 2,4- diaminotoluene is below its *de minimis* limit of 0.1 percent in the product.

Manufacture as a Commercial Byproduct and Impurity

Chloroform is a reaction byproduct in the production of carbon tetrachloride. It is removed by distillation to a concentration of less than 150 ppm (0.0150 percent) remaining in the carbon tetrachloride. The separated chloroform at 90 percent concentration is sold as a byproduct. Chloroform is subject to a 0.1 percent (1000 ppm) *de minimis* limit. Any amount of chloroform manufactured and separated as byproduct must be included in threshold determinations because EPA does not interpret the *de minimis* exemption to apply to the manufacture of a chemical as a byproduct. Releases of chloroform prior to and during purification of the carbon tetrachloride must be reported. The *de minimis* exemption can, however, be applied to the chloroform remaining in the carbon tetrachloride as an impurity. Because the concentration of chloroform remaining in the carbon tetrachloride is below the *de minimis* limit, this quantity of chloroform is exempt from threshold determinations, release and other waste management reporting, and supplier notification.

Manufacture as a Waste Byproduct

A small amount of formaldehyde is manufactured as a reaction byproduct during the production of phthalic anhydride. The formaldehyde is separated from the phthalic anhydride as a waste gas and burned, leaving no formaldehyde in the phthalic anhydride. The amount of formaldehyde produced and removed must be included in threshold determinations and release and other waste management estimates even if the formaldehyde were present below the *de minimis* level in the process stream where it was manufactured or in the waste stream to which it was separated because EPA does not interpret mixtures and trade name products to includes wastes.

Laboratory Activities Exemption. EPCRA Section 313 chemicals that are manufactured, processed, or otherwise used in a laboratory at a covered facility under the direct supervision of a technically qualified individual do not have to be considered for threshold determinations and release and other waste management calculations. However, pilot plant scale and specialty chemical production does not qualify for this laboratory activities exemption, nor does the use of EPCRA Section 313 chemicals for laboratory support activities, such as the use of chemicals for equipment maintenance.

Coal Extraction Activities Exemption. If an EPCRA Section 313 chemical is manufactured, processed, or otherwise used in extraction by facilities in NAICS codes 212111, 212112 and 212113, a person is not required to consider the quantity of the EPCRA Section 313 chemical so manufactured, processed, or otherwise used when considering threshold determinations and release and other waste management calculations (see Example 8). Reclamation activities occurring simultaneously with coal extraction activities (e.g., cast blasting) are included in the exemption. However, otherwise use of ash, waste rock, or fertilizer for reclamation purposes are not considered part of extraction; non-exempt amounts of EPCRA Section 313 chemicals contained in these materials must be considered toward threshold determinations and release and other waste management calculations.

Metal Mining Overburden Exemption. If an EPCRA Section 313 chemical that is a constituent of overburden is processed or otherwise used by facilities in NAICS codes 212221, 212222, 212230, and 212299, a person is not required to consider the quantity of the EPCRA Section 313 chemical so processed or otherwise used when considering

threshold determinations and release and other waste management calculations.

For purposes of EPCRA Section 313 reporting, overburden is the unconsolidated material that overlies a deposit of useful material or ore. It does not include any portion of the ore or waste rock.

Example 8: Coal mining extraction activities

Included among these are explosives for blasting operations, solvents, lubricants, and fuels for extraction related equipment maintenance and use, as well as overburden and mineral deposits. The EPCRA Section 313 chemicals contained in these materials are exempt from threshold determinations and release and other waste management calculations, when manufactured, processed or otherwise used during extraction activities at coal mines.

B.4 Threshold Determinations

EPCRA Section 313 reporting is required if threshold quantities are exceeded. Separate thresholds apply to the amount of the EPCRA Section 313 chemical that is manufactured, processed or otherwise used.

You must submit a report for any EPCRA Section 313 chemical that is not listed as a PBT chemical and which is:

- Manufactured in excess of 25,000 pounds over the calendar year;
- Processed in excess of 25,000 pounds over the calendar year; or
- Otherwise used in excess of 10,000 pounds over the calendar year.

The PBT chemical names, Chemical Abstracts Service (CAS) numbers and their reporting thresholds are listed in the table below. See Table IIc of these instructions for lists of individual members of the dioxin and dioxin-like category, the polycyclic aromatic compounds (PACs) chemical category, and the hexabromocyclododocane category.

Chemical or chemical category name	CAS number or chemical category code	Threshold (lb, unless noted otherwise)
Aldrin	309-00-2	100
Benzo[g,h,i]perylene	191-24-2	10
Chlordane	57-74-9	10
Dioxin and dioxin-like compounds category (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds category if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical)	N150	0.1 gram
Heptachlor	76-44-8	10
Hexabromocyclododecane category	N270	100
Hexachlorobenzene	118-74-1	10
Isodrin	465-73-6	10
Lead (this lower threshold does not apply to lead when it is contained in stainless steel, brass or bronze alloy)	7439-92-1	100
Lead compounds category	N420	100
Mercury	7439-97-6	10
Mercury compounds category	N458	10
Methoxychlor	72-43-5	100
Octachlorostyrene	29082-74-4	10
Pendimethalin	40487-42-1	100
Pentachlorobenzene	608-93-5	10
Polychlorinated biphenyls (PCBs)	1336-36-3	10
Polycyclic aromatic compounds category (PACs)	N590	100
Tetrabromobisphenol A	79-94-7	100
Toxaphene	8001-35-2	10
Trifluralin	1582-09-8	100

B.4.a. How to Determine if Your Facility Has Exceeded Thresholds

To determine whether your facility has exceeded an EPCRA Section 313 reporting threshold, compare quantities of EPCRA Section 313 chemicals that you manufacture, process, or otherwise use to the respective thresholds for those activities. A worksheet is provided in Figure 4A to assist facilities in determining whether they exceed any of the reporting thresholds for non-PBT chemicals; Figures 4B-D provide worksheets for PBT chemicals. (The worksheets can be found at the end of section B.5.) These worksheets also provide a format for maintaining reporting facility records. Use of these worksheets is not required and the completed worksheet(s) should not accompany Form R reports submitted to EPA and the state or tribe. Additionally, EPA provides an online threshold screening tool at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-threshold-screening-tool.

Complete the appropriate worksheet for each EPCRA Section 313 chemical or chemical category. Base your threshold determination for EPCRA Section 313 chemicals with qualifiers only on the quantity of the EPCRA Section 313 chemical satisfying the qualifier.

Use of the worksheets is divided into three steps:

- *Step 1* allows you to record the gross amount of the EPCRA Section 313 chemical or chemical category involved in activities throughout the facility. Pure forms as well as the amounts of the EPCRA Section 313 chemical or chemical category present in mixtures or other trade name products must be considered. The types of activity (i.e., manufacturing, processing, or otherwise using) for which the EPCRA Section 313 chemical is used must be identified because separate thresholds apply to each of these activities. A record of the information source(s) used should be kept. Possible information sources include purchase records, inventory data, and calculations by a process engineer. The data collected in Step 1 will be totaled for each activity to identify the overall amount of the EPCRA Section 313 chemical or chemical category manufactured (including imported), processed, or otherwise used.
- *Step 2* allows you to identify uses of the EPCRA Section 313 chemical or chemical category that were included in Step 1 but are exempt under EPCRA Section 313. Do not include in Step 2 exempt quantities of the EPCRA Section 313 chemical not included in the calculations in Step 1. For example, if Freon contained in the building's air conditioners was not reported in Step 1, you would not include the amount as exempt in Step 2. Step 2 is intended for use when a quantity or use of the EPCRA Section 313 chemical is exempt while other quantities require reporting. Note the type of exemption for future reference. Also identify, if applicable, the fraction or percentage of the EPCRA Section 313 chemical present that is exempt. Add the amounts in each activity to obtain a subtotal for exempted amounts of the EPCRA Section 313 chemical or chemical categories at the facility.
- *Step 3* involves subtracting the result of Step 2 from the results of Step 1 for each activity. Compare this net sum to the applicable activity threshold. If the threshold is exceeded for any of the three activities, a facility must submit a Form R for that EPCRA Section 313 chemical or chemical category. Do not sum quantities of the EPCRA Section 313 chemical that are manufactured, processed, and otherwise used at your facility, because each of these activities requires a separate threshold determination. For example, if in a calendar year you processed 20,000 pounds of a non-PBT EPCRA Section 313 chemical and you otherwise used 6,000 pounds of that same chemical, your facility has not exceeded any applicable threshold and thus is not required to report for that chemical.

Worksheets should be retained to document your determination for reporting or not reporting, but should not be submitted with the report.

You must submit a report if you exceed any threshold for any EPCRA Section 313 chemical or chemical category. For example, if your facility processes 22,000 pounds of a non-PBT EPCRA Section 313 chemical and also otherwise uses 16,000 pounds of that same chemical, it has exceeded the otherwise use threshold (10,000 pounds for a non-PBT chemical) and your facility must report even though it did not exceed the process threshold (25,000 pounds for a non-PBT chemical). In preparing your reports, you must consider all non-exempted activities and all releases and other waste management quantities of the EPCRA Section 313 chemical from your facility,

not just releases and other waste management quantities from the otherwise use activity.

Also note that threshold determinations are based upon the actual amounts of an EPCRA Section 313 chemical manufactured, processed, or otherwise used over the course of the calendar year. The threshold determination may not relate to the amount of an EPCRA Section 313 chemical brought on-site during the calendar year. For example, if a stockpile of 100,000 pounds of a non-PBT EPCRA Section 313 chemical is present on-site but only 20,000 pounds of that chemical is applied to a process, only the 20,000 pounds processed is counted toward a threshold determination, not the entire 100,000 pounds of the stockpile.

B.4.b. Threshold Determinations for On-Site Reuse Operations

Threshold determinations of EPCRA Section 313 chemicals that are reused at the facility are based only on the amount of the EPCRA Section 313 chemical that is added during the year, not the total volume in the system. For example, a facility operates a refrigeration unit that contains 15,000 pounds of anhydrous ammonia at the beginning of the year. The system is charged with 2,000 pounds of anhydrous ammonia during the year. The facility has therefore "otherwise used" only 2,000 pounds of anhydrous ammonia, a non-PBT EPCRA Section 313 chemical, which is below the otherwise use threshold for anhydrous ammonia and is not required to report (unless there are other "otherwise use" activities of ammonia, that when taken together, exceed the reporting threshold). If, however, the whole refrigeration unit was recharged with 15,000 pounds of anhydrous ammonia during the year, then the facility would have exceeded the otherwise use threshold, and would be required to report.

This does not apply to EPCRA Section 313 chemicals "recycled" or "reused" off-site and returned to a facility. Such EPCRA Section 313 chemicals returned to a facility are treated as the equivalent of newly purchased material for purposes of EPCRA Section 313 threshold determinations.

B.4.c. Threshold Determinations for Ammonia

The listing for ammonia includes the modifier "includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing." The qualifier for ammonia means that anhydrous forms of ammonia are 100 percent reportable and aqueous forms are limited to 10 percent of total aqueous ammonia. Therefore, when determining threshold quantities, 100 percent of anhydrous ammonia is included but only 10 percent of total aqueous ammonia is included. If any ammonia evaporates from aqueous ammonia solutions, 100 percent of the evaporated ammonia is included in threshold determinations.

For example, if a facility processes aqueous ammonia, it has processed 100 percent of the aqueous ammonia in that solution. If the ammonia remains in solution, then 10 percent of the total aqueous ammonia is counted towards the threshold. If there are any evaporative losses of anhydrous ammonia, then 100 percent of those losses must be counted towards the processing threshold. If the manufacturing, processing, or otherwise use threshold for the ammonia listing is exceeded, the facility must report 100 percent of these evaporative losses in Sections 5 and 8 of the Form R.

B.4.d. Threshold Determinations for Chemical Categories

A number of chemical compound categories are subject to reporting. See Table IIc for a listing of these EPCRA Section 313 chemical categories. When preparing threshold determinations for one of these EPCRA Section 313 chemical categories, all individual members of a category that are manufactured, processed, or otherwise used must be counted. Where generic names are used at a facility, threshold determinations should be based on CAS numbers. For example, Poly-Solv EB does not appear among the reportable chemicals in Table IIa or IIb but its CAS number indicates Poly-Solv EB is a synonym for ethylene glycol mono-n-butyl ether, a member of the certain glycol ethers chemical category (code N230). For chemical compound categories, threshold determinations must be made separately for each of the three activities. Do not include in these threshold determinations for a category any chemicals that are also individually listed EPCRA Section 313 chemicals (see Table IIa

or IIb). Individually listed EPCRA Section 313 chemicals are subject to their own individual threshold determination.

Organic Compounds

For the organic compound categories, you are required to account for the entire weight of all compounds within a specific compound category (e.g., glycol ethers) at the facility for BOTH the threshold determination and release and other waste management estimates.

Metal Category Compounds

Threshold determinations for metal category compounds present a special case. If, for example, your facility processes several different nickel compounds, base your threshold determination on the total weight of all nickel compounds processed. However, if your facility processes both the "parent" metal (nickel) as well as one or more nickel compounds, you must make threshold determinations for both nickel (CAS number 7440-02-0) and nickel compounds (chemical category code N495) because they are separately listed EPCRA Section 313 chemicals. If your facility exceeds thresholds for both the parent metal and compounds of that same metal, EPA allows you to file one combined report (e.g., one report for nickel compounds, including nickel) because the release information you will report in connection with metal category compounds will be the total pounds of the metal released. If you file one combined report, you should put the name of the metal compound category on the Form R. In the example above, the facility that exceeded reporting thresholds for both the nickel and nickel compounds chemical category could submit a single Form R for the nickel compounds chemical category, which would contain release and other waste management information for both nickel and nickel compounds.

TRI-MEweb will prompt you to select a checkbox to indicate whether the form contains reports for both the parent metal and compounds of that same metal to indicate that the form contains reporting on both the parent metal and the metal compound (e.g., Nickel and Nickel Compounds).

The case of metal category compounds involving more than one metal should be noted. Some metal category compounds may contain more than one listed metal. For example, lead chromate is both a lead compound and a chromium compound. In such cases, if applicable thresholds are exceeded, you are required to file two separate reports, one for lead compounds and one for chromium compounds. Apply the total weight of the lead chromate to the threshold determinations for both lead compounds and chromium compounds. (Note: Only the quantity of each parent metal released or otherwise managed as waste, not the quantity of the compound, would be reported on the appropriate sections of both Form Rs. See B.5.)

Nitrate Compounds (water dissociable; reportable only when in aqueous solution)

For the category nitrate compounds (water dissociable; reportable only when in aqueous solution), the entire weight of the nitrate compound is counted in making threshold determinations. A nitrate compound is covered by this listing only when in water and only if dissociated. If no information is available on the identity of the type of nitrate that is manufactured, processed or otherwise used, assume that the nitrate compound exists as sodium nitrate.

B.4.e Threshold Determination for Persistent Bioaccumulative Toxic (PBT) Chemicals

There are two separate thresholds for EPCRA Section 313 PBT chemicals; these thresholds are set based on the chemicals' potential to persist and bioaccumulate in the environment. The manufacturing, processing and otherwise use thresholds for PBT chemicals is 100 pounds, while for the subset of PBTs chemicals that are highly persistent and highly bioaccumulative, it is 10 pounds. One exception is the dioxin and dioxin-like compounds chemical category. The threshold for this category is 0.1 gram. The PBT chemicals, their CAS numbers or chemical category code, and their reporting thresholds are listed in a table in the introductory section of B.4. See Table IIc of these instructions for lists of individual members of the dioxin and dioxin-like compounds chemical category and the polycyclic aromatic compounds (PACs) chemical category.

B.4.f. Mixtures and Other Trade Name Products

EPCRA Section 313 chemicals contained in mixtures and other trade name products must be factored into threshold determinations and release and other waste management calculations.

If your facility processed or otherwise used mixtures or other trade name products during the calendar year, you are required to use the best readily

available data (or reasonable estimates if such data are not readily available) to determine whether the toxic chemicals in a mixture meet or exceed the *de minimis* concentration and, therefore, whether they must be included in threshold determinations and release and other waste management calculations. If you know that a mixture or other trade name product contains a specific EPCRA Section 313 chemical, combine the amount of the EPCRA Section 313 chemical in the mixture or other trade name product with other amounts of the same EPCRA Section 313 chemical processed or otherwise used at your facility for threshold determinations and release and other waste management calculations. If you know that a mixture contains an EPCRA Section 313 chemical but it is present below the *de minimis* level, you do not have to consider the amount of the EPCRA Section 313 chemical present in that mixture for purposes of threshold determinations and release and other waste management calculations. PBT chemicals are not eligible for the *de minimis* exemption except lead when it is contained in stainless steel, brass or bronze alloy.

Observe the following guidelines in estimating concentrations of EPCRA Section 313 chemicals in mixtures when only limited information is available:

- If you only know the upper bound concentration, you must use it for threshold determinations (40 CFR Section372.30(b)(ii)).
- If you know the lower and upper bound concentrations of an EPCRA Section 313 chemical in a mixture, EPA recommends you use the midpoint of these two concentrations for threshold determinations.
- If you know only the lower bound concentration, EPA recommends you subtract out the percentages of any other known components to determine a reasonable upper bound concentration, and then determine a midpoint.
- If you have no information other than the lower bound concentration, EPA recommends you calculate a midpoint assuming an upper bound concentration of 100 percent.

B.5 Release and Other Waste Management Determinations for Metals, Metal Category Compounds, and Nitrate Compounds

Metal Category Compounds

Although the complete weight of the metal category compounds must be used in threshold determinations for the metal compounds category, only the weight of the metal portion of the metal category compound must be considered for release and other waste management determinations. Remember that for metal category compounds that consist of more than one metal, release and other waste management reporting must be based on the weight of each metal, provided that the appropriate thresholds have been exceeded.

Metals and Metal Category Compounds

For compounds within the metal compound categories, only the metal portion of the metal category compound must be considered in determining release and other waste management quantities for the metal category compounds. Therefore, if thresholds are separately exceeded for both the “parent” metal and its compounds, EPA allows you to file a combined Form R for the “parent” metal and its category compounds. This Form R would contain all of the release and other waste management information for both the “parent” metal and metal portion of the related metal category compounds. For example, you exceed thresholds for chromium. You also exceed thresholds for chromium compounds. Instead of filing two Form Rs you can file one combined Form R. This Form R would contain information on quantities of chromium released or otherwise managed as waste and the quantities of the chromium portion of the chromium compounds released or otherwise managed as waste. When filing one combined Form R for an EPCRA Section 313 metal and metal compound category, facilities should identify the chemical reported as the metal compound category name and code in Section 1 of the Form R.

Note that these instructions do not apply to the Form A. See Section B.6.g for reporting instructions for reporting metals and metal category compounds using the Form A. See Appendix B for more information about reporting the release and other waste management of metals and metal compounds.

Nitrate Compounds (water dissociable; reportable only in aqueous solution)

Although the complete weight of the nitrate compound must be used for threshold determinations for the nitrate compounds category only the nitrate portion of the compound should be used for release and other waste management calculations.

Example 9: Mixtures and Other Trade Name Products

Scenario #1: Your facility otherwise uses 12,000 pounds of an industrial solvent (Solvent X) for equipment cleaning. The Safety Data Sheet (SDS) for the solvent indicates that it contains at least 50 percent n-hexane, an EPCRA Section 313 chemical; however, it also states that the solvent contains 20 percent non-hazardous surfactants. This is the only n-hexane-containing mixture used at the facility.

EPA recommends you follow these steps to determine if the quantity of the EPCRA Section 313 chemical in Solvent X exceeds the threshold for otherwise use.

1) Determine a reasonable maximum concentration for the EPCRA Section 313 chemical by subtracting out the non-hazardous surfactants (i.e., 100% - 20% = 80%).

2) Determine the midpoint between the known minimum (50%) and the reasonable maximum calculated above (i.e., (80% + 50%)/2 = 65%).

3) Multiply total weight of Solvent X otherwise used by 65% (0.65).

   12,000 pounds × 0.65 = 7,800 pounds

4) Because the total amount of n-hexane otherwise used at the facility was less than the 10,000-pound otherwise use threshold, the facility is not required to file a Form R for n-hexane.

Scenario #2: Your facility otherwise used 15,000 pounds of Solvent Y to clean printed circuit boards. The SDS for the solvent lists only that Solvent Y contains at least 80 percent of an EPCRA Section 313 chemical that is only identified as chlorinated hydrocarbons.

EPA recommends you follow these steps to determine if the quantity of the EPCRA Section 313 chemical in the solvent exceeds the threshold for otherwise use.

1) Because the specific chemical is unknown, the Form R will be filed for “chlorinated hydrocarbons.” This name will be entered into Part II, Section 2.1, “Mixture Component Identity.” (Note: Because your supplier is claiming the EPCRA Section 313 chemical identity a trade secret, you do not have to file substantiation forms.)

2) The upper bound limit is assumed to be 100 percent and the lower bound limit is known to be 80 percent. Using this information, the specific concentration is estimated to be 90 percent (i.e., the mid-point between upper and lower limits).

   (100% + 80%)/2 = 90%

3) The total weight of Solvent Y is multiplied by 90 percent (0.90) when calculating for thresholds.

   15,000 × 0.90 = 13,500

4) Because the total amount of chlorinated hydrocarbons exceeds the 10,000-pound otherwise use threshold, you must file a Form R for this chemical.

Facility Name: _____ **Date Worksheet Prepared:** _____

EPCRA Section 313 Chemical or Chemical Category: _____ **Prepared By:** _____

CAS Registry Number: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (lb)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (lb)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (lb):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____lb	(B)_____lb	(C)_____lb

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity)	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (lb):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____lb	(B_1)_____lb	(C_1)_____lb

Amount subject to threshold: **($A-A_1$)_____ lb** **($B-B_1$)_____ lb** **($C-C_1$)_____ lb**

Compare to threshold for EPCRA Section 313 reporting. **25,000 lb** **25,000 lb** **10,000 lb**

If any threshold is exceeded, reporting is required for all activities. Do not submit this worksheet with Form R or Form A; retain it for your records.

Figure 4A. EPCRA Section 313 Non-PBT Chemical Reporting Threshold Worksheet[1]

[1] Note: Chemicals listed as PBT have separate thresholds (dioxin and dioxin-like compounds chemical category = 0.1 g; highly persistent, highly bioaccumulative toxic chemicals = 10 lb; all other PBT chemicals = 100 lb). Make certain you are using the appropriate worksheet for the toxic chemical of concern.

Facility Name: _____ **Date Worksheet Prepared:** _____

EPCRA Section 313 Chemical or Chemical Category: _____ **Prepared By:** _____

CAS Registry Number: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (lb)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (lb)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (lb):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____lb	(B)_____lb	(C)_____lb

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity) [1]	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (lb):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____lb	(B_1)_____lb	(C_1)_____lb

Amount subject to threshold: ($A-A_1$)_____ lb ($B-B_1$)_____ lb ($C-C_1$)_____ lb

Compare to threshold for EPCRA Section 313 reporting. 100 lb 100 lb 100 lb

If any threshold is exceeded, reporting is required for all activities. Do not submit this worksheet with Form R or Form A; retain it for your records.

Figure 4B. EPCRA Section 313 Reporting Threshold Worksheet for PBT Chemicals with 100 Pound Thresholds

Facility Name: _____ **Date Worksheet Prepared:** _____

[1] Note: Chemicals listed as PBT are not eligible for the de minimis exemption.

EPCRA Section 313 Chemical or Chemical Category: _____ **Prepared By:** _____

CAS Registry Number: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (lb)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (lb)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (lb):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____lb	(B)_____lb	(C)_____lb

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity) [1]	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (lb):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____lb	(B_1)_____lb	(C_1)_____lb

Amount subject to threshold: **($A-A_1$)_____ lb** **($B-B_1$)_____ lb** **($C-C_1$)_____ lb**

Compare to threshold for EPCRA Section 313 reporting. **10 lb** **10 lb** **10 lb**

If any threshold is exceeded, reporting is required for all activities. Do not submit this worksheet with Form R or Form A; retain it for your records.

Figure 4C. EPCRA Section 313 Reporting Threshold Worksheet for PBT Chemicals with 10 Pound Threshold

Facility Name: _____ **Date Worksheet Prepared:** _____

[1] Note: Chemicals listed as PBT are not eligible for the de minimis exemption.

EPCRA Section 313 Chemical or Chemical Category: Dioxin and Dioxin-like Compounds **Prepared By:** _____

CAS Registry Number: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (g)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (g)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (g):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____g	(B)_____g	(C)_____g

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity) [1]	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (g):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____g	(B_1)_____g	(C_1)_____g

Amount subject to threshold: **($A-A_1$)_____ g** **($B-B_1$)_____ g** **($C-C_1$)_____ g**

Compare to threshold for EPCRA Section 313 reporting. **0.1 g** **0.1 g** **0.1 g**

If any threshold is exceeded, reporting is required for all activities. Do not submit this worksheet with Form R or Form A; retain it for your records.

Figure 4D. EPCRA Section 313 Reporting Threshold Worksheet for Dioxin and Dioxin-Like Compounds Chemical Category

[1] Note: Chemicals listed as PBT are not eligible for the de minimis exemption.

B.6. Facility Eligibility Determination for Alternate Threshold and for Reporting on TRI Form A Certification Statement

This section will help to determine whether you can submit the simplified Form A Certification Statement (hereafter referred to as Form A). The criteria are based on the total annual reportable amount of the listed chemical or chemical category and the amount manufactured, processed, or otherwise used. Note that, effective in Reporting Year 2008, the TRI Burden Reduction Rule has been voided by Congress. The criterion for using Form A has returned to what they were prior to Reporting Year 2006. The criteria are explained below. For more information about the final rule, see the TRI homepage at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-laws-rulemakings-and-notices.

B.6.a. Alternate Threshold

On November 30, 1994, EPA published a final rule (59 FR 61488) that provides qualifying facilities an alternate threshold of 1 million pounds. Eligible facilities wishing to take advantage of this option may certify on a simplified two-page form referred to as Form A Certification Statement and do not have to use Form R. The "TRI Alternate Threshold for Facilities with Low Annual Reportable Amounts," provides facilities otherwise meeting EPCRA section 313 reporting thresholds the option of certifying on Form A provided that they do not exceed 500 pounds for the total annual reportable amount (defined below) for that chemical, and that their amounts manufactured or processed or otherwise used do not exceed one-million pounds. As with determining Section 313 reporting thresholds, amounts manufactured, processed, or otherwise used are to be considered independently. This modification does not apply to forms being submitted on or before July 1, 1995 (covering the 1994 reporting year). If you fill out a Form A for an EPCRA Section 313 chemical, do not fill out a Form R for that same chemical.

However, there is an exception to the alternate threshold rule described in the preceding paragraph. All PBT chemicals (except certain instances of reporting lead in stainless steel, brass or bronze alloys) are excluded from eligibility for the alternate threshold.

B.6.b. What is the Form A Certification Statement?

The Form A, which is described as the "certification statement" in 59 FR 61488, is intended as a means to reduce the compliance burden associated with *EPCRA section 313*. If a facility chooses to use Form A as a substitute for Form R for any eligible chemical, it must be submitted on an annual basis. Facilities wishing to take advantage of this burden reducing option may only submit Form A for chemicals that meet the conditions described in section B.6.a, Alternate Threshold, and should not submit a Form R to the TRI Data Processing Center for the same chemicals. The information submitted on the Form A includes facility identification information and the chemical or chemical category identity. The information submitted on the Form A will appear in the TRI data base in the same manner that information submitted on Form R appears. An approved Form A can be accessed via TRI-MEweb or from the EPA TRI website.

B.6.c. What Is the Annual Reportable Amount (ARA)?

For the purpose of this optional reporting modification, the annual reportable amount (ARA) is equal to the combined total quantities of the following waste management activities:

- released at the facility (including disposed of within the facility),
- treated at the facility (as represented by amounts destroyed or converted by treatment processes),
- recovered at the facility as a result of recycling operations,
- combusted for the purpose of energy recovery at the facility, and
- amounts transferred from the facility to off-site locations for the purpose of recycling, energy recovery, treatment, and/or disposal.

These quantities correspond to the sum of amounts reportable for data elements on EPA Form R as Part II column B of section 8, data elements 8.1 (quantity released), 8.2 (quantity used for energy recovery on-site), 8.3 (quantity used for energy recovery off-site), 8.4 (quantity recycled onsite), 8.5 (quantity recycled off-site), 8.6 (quantity treated on-site), and 8.7 (quantity treated off-site).

B.6.d. Recordkeeping

Each owner or operator who determines that they are eligible, and wishes to apply the alternate threshold to a particular chemical, must retain

records substantiating this determination for a period of three years from the date of the submission of the Form A. These records must include sufficient documentation to support calculations as well as the calculations made by the facility that confirm their eligibility for each chemical for which the alternate threshold was applied.

A facility that fits within the category description, and manufactures, processes or otherwise uses no more than one million pounds of an EPCRA Section 313 chemical annually, and whose owner/operator elects to take advantage of the alternate threshold, is not considered an EPCRA Section 313 covered facility for that chemical for the purpose of submitting a Form R. This determination may provide further regulatory relief from other federal or state regulations that apply to facilities on the basis of their EPCRA Section 313 reporting status. A facility will need to reference other applicable regulations to determine if their actual requirements may be affected by this reporting modification.

B.6.e. Multi-establishment Facilities

For the purposes of using Form A, the facility must also make its determination based upon the entire facility's operations including all of its establishments (see 59 FR 61488 for greater detail). If the facility as a whole is able to take advantage of the alternate threshold, a single Form A is required. The eligibility to submit a Form A must be made on a whole facility determination. Thus, all of the information necessary to make the determination must be assembled to the facility level.

B.6.f. Metals and Metal Category Compounds

For metal category compounds, the amount applied toward the ARA is the amount of parent metal waste that is reported on Form R, but the thresholds apply to the amount of metal category compounds manufactured, processed, or otherwise used. For Form A certification involving both listed parent metals and associated metal compounds, the one million pound alternate threshold must be applied separately to the listed parent metal and the associated metal compound(s). Threshold determinations must be made independently for each because they are separately listed EPCRA Section 313 chemicals.

- If the threshold is exceeded for the listed parent metal but not the associated metal category compounds, then the releases of metal reported on Form R for the parent metal need not include the releases from the metal category compounds.
- If both the parent metal and the associated metal compounds exceed the alternate threshold, then the facility has the option of filing one Form R for both, using the metal category compound name and reporting total releases based on parent metal content.
- If neither the parent metal nor the associated metal compounds exceed the alternate threshold, then the facility must use a separate listing on Form A for each, since the reporting thresholds must be applied to each listed parent metal and all compounds in the associated compound category. EPA believes it is appropriate to make the distinction between filing the Form R and Form A because the Form R accounts for amounts of metal released or otherwise managed and Form A verifies that the alternate threshold for each listed chemical or chemical category has not been exceeded.

Similarly, separate listings on Form A must be submitted for all other listed chemicals even if EPA allows one listing on Form R to be filed for two or more listed chemicals (e.g., o-xylene, p-xylene and xylene (mixed isomers)). For example, if a facility processes in three separate process streams, xylene (mixed isomers), o-xylene, and p-xylene, and exceeds the conditions of the alternate threshold for each of these listed substances, the facility may combine the appropriate information on the o-xylene, p-xylene, and xylene (mixed isomers) into one Form R, but cannot combine the reports into one listing on Form A.

Facilities that process o-xylene, p-xylene, and xylene (mixed isomers) in separate process streams and do not exceed the conditions of the alternate threshold for one or more of the compounds may submit a separate Form A for each of the forms of xylene meeting the alternate threshold and report on Form R for those forms that do not. Similar to reporting on the parent metals and their associated category compounds described above, facilities that separately process all types (i.e., isomers) of xylene with individual activity levels within the conditions of the alternate threshold should file a separate Form A for each type of xylene.

Instructions for Completing TRI Forms R and A

The following instructions provide information on how to enter data on Forms R and A for non-trade secret reporting using TRI-MEweb. Supplemental instructions for submitting trade secret claims are provided in Appendix G.

TRI-MEweb collects the same facility identification information and chemical specific information that facilities previously submitted on the paper TRI Forms. In some cases, TRI-MEweb does not sequentially follow the Sections numerically as listed on the Forms. As such, the TRI-MEweb experience differs somewhat from the sequential nature of the instructions in this document.

Facility identification information provided in Part I is entered only once per facility in TRI-MEweb and is duplicated on all forms submitted, with the exception of technical and public contact which are collected for each form separately (See Part I, Sections 4.3 and 4.4). For facilities that have previously submitted TRI Forms, the facility information remains with the facility's profile and needs to be updated only if facility or parent company changes have occurred.

Chemical specific information on Part II (including technical and public contact information) is entered separately for each chemical reported.

C. Part I. Facility Identification Information (Form R & A)

Section 1. Reporting Year

The reporting year is the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 2017 reporting year must be submitted on or before July 1, 2018.

Section 2. Trade Secret Information

Trade secret submission is not supported by TRI-MEweb. As such, Section 2 is not to be completed by TRI-MEweb users for non-trade secret reports. For instructions on completing trade secret submissions, see Appendix G of these instructions.

Section 3. Certification

For both Form R and Form A, the certification statement must be signed by a senior official with management responsibility for the person (or persons) completing the form. A senior management official must certify the accuracy and completeness of the information reported on the form by signing and dating the form.

Electronic certification of completed forms prepared using TRI-MEweb is performed by certifying officials who have signed an Electronic Signature Agreement (ESA) and TRIFID Certification Agreement. For more information regarding certification of forms, see Section A.2.

Unlike the certification statement contained on Form R, the certification statement provided on the Alternate Threshold Form A pertains to the facility's eligibility of having met the conditions as described in 40 CFR Section 372.27.

Section 4. Facility Identification

4.1 Facility Name, Location, TRI Facility Identification Number and Tribal Country Name

Enter the full name that the facility presents to the public and its customers in doing business (e.g., the name that appears on invoices, signs, and other official business documents). Do not use a nickname for the facility (e.g., Main Street Plant) unless that is the legal name of the facility under which it does business. Also enter the physical street address, mailing address, city, county, three digit BIA code, if applicable, state, and ZIP code in the space provided. The street address provided must be the location where the EPCRA Section 313 chemicals are manufactured, processed, or otherwise used. You may not use PO Box as a facility address. If your mailing address and street address are the same, you should enter NA in the space for the mailing address. If the mailing address is outside of the US, include the FIPS country code.

If your facility is not in a county, put the name of your city, district (for example, District of Columbia), or parish (if you are in Louisiana) in the county block of the Form R and Form A as well as in the county field of TRI-MEweb. "NA" or "None" are not acceptable entries. TRI-MEweb provides a drop-down menu for the county name, including city districts and parish names.

If your facility is located on Indian country as defined by 18 USC §1151 you must enter the three-digit Bureau of Indian Affairs (BIA) tribal code in the "BIA Code" field. The BIA tribal codes are listed in Table III of the RFI. Facilities using TRI-MEweb to complete their forms will be asked if they are located within a tribe's Indian country and, upon answering "yes", be taken to a look-up table to determine the correct BIA code.

If your facility is not located (overwhelming majority of TRI facilities are not in Indian Country) in Indian country as defined by 18 USC §1151 you must enter only the city, county (as applicable), state and zip code.

Location information for a facility that has previously submitted data to EPA.

If your facility has submitted a Form R or A in previous reporting years, a TRI Facility Identification Number (TRIFID) has already been assigned to your facility. If you do not know your facility's information used in prior years' submissions, contact your Regional TRI Program representative, or utilize Envirofacts on the Web to look up the address, facility name, or TRIFID at: https://www3.epa.gov/enviro.

If you have previously submitted data for your facility using TRI-MEweb, the facility information including TRIFID remains with your profile. If you have not submitted using TRI-MEweb, then you can

add your facility to your profile using the 6-digit access key, which is e-mailed to all technical contacts, preparers, and certifying officials at facilities reporting for the prior year, or by submitting the TRIFID and technical contact information.

Location information for a facility that has previously submitted data to EPA, but has changed physical location.

If your facility has moved, you will need to request that a new TRIFID be assigned to your facility. To request a new TRIFID, add a new facility account to TRI-MEweb and choose to report as a new reporting facility (option 3). TRI-MEweb will automatically generate a new TRIFID for your facility. The TRIFID assigned to your new reporting facility should be used in all future reporting of TRI data.

Location information for a facility that has changed ownership, but has not changed physical location.

The TRIFID is established by the first Form R or A submitted by a facility at a particular location. Only a change in address warrants filing as a new facility; otherwise, the TRIFID is retained by the facility even if the facility changes name, ownership, production processes, NAICS codes, etc.

If your facility has changed ownership during the reporting year but not its physical location, the facility does not require a new TRIFID. Use the TRIFID used by the previous owner. TRI-MEweb can be used to update facility information to reflect the change of ownership.

Location reporting TRI releases for the first time to EPA.

If your facility is reporting for the first time, upon creating your CDX account, and adding the TRI-MEweb application, you will be prompted to add a new facility account into TRI-MEweb. TRI-MEweb will automatically generate a new TRIFID for your facility. The TRIFID assigned to your new reporting facility should be used in all future reporting of TRI data.

4.2 Full or Partial Facility Indication and Federal Facility Designation

Full or Partial Facility Indication (Form R only)

EPCRA Section 313 requires reports by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person). A facility may contain more than one establishment."

EPCRA Section 313 defines establishment as "an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed." Under Section 372.30(c) of the reporting rule, you may submit a separate Form R for each establishment or for groups of establishments in your facility, provided all releases and other waste management activities and source reduction activities involving the EPCRA Section 313 chemical from the entire facility are reported. This allows you the option of reporting separately on the activities involving an EPCRA Section 313 chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that EPCRA Section 313 chemical for the entire facility. However, if an establishment or group of establishments does not manufacture, process, or otherwise use or release or otherwise manage as waste an EPCRA Section 313 chemical, you do not have to submit a report for that establishment or group of establishments for that particular chemical. (See also Section B.2.b of these instructions.)

A covered facility must report all releases and other waste management activities and source reduction activities of an EPCRA Section 313 chemical if the facility meets a reporting threshold for that EPCRA Section 313 chemical. Whether submitting a report for the entire facility or separate reports for the establishments, the threshold determination must be made based on the entire facility. Indicate in Section 4.2 whether your report is for the entire covered facility as a whole or for part of a covered facility (i.e., one or more establishments).

In TRI-MEweb, facilities that wish to submit separate Form Rs for each establishment or group of establishments may select "Reporting by Part" with the *Select Facility* page to set up unique establishments within the particular facility. All

establishments reporting by part use the same TRIFID but should provide unique facility names.

Note that the reporting by part option is not applicable for facilities submitting a Form A for a TRI chemical. Unlike the Form R, the Form A does not utilize Sections 4.2a or 4.2b, which provide the option of reporting full or partial facility information if the facility is composed of several distinct establishments.

Federal Facility Designation

Executive Order 13423 directs federal facilities to comply with Right-To-Know Laws and Pollution Prevention Requirements. In TRI-MEweb, users should select the appropriate button for: 1) federal facility (Section 4.2c), 2) GOCO facility (Section 4.2d), or 3) neither. Federal facilities should select only 'federal facility' even if their TRI reports contain release and other waste management information from contractors located at the facility. Contractors at federal facilities that are required by EPCRA Section 313 to file TRI reports independently of the federal facility, should select GOCO. This information is important to prevent duplication of federal facility data. (See Appendix A for further guidance on these instructions.)

4.3 Technical Contact

In TRI-MEweb, facilities must enter the name and telephone number (including area code) of a technical representative whom EPA, state, or tribal officials may contact for clarification of the information reported on Form R or A. If possible, this number should be for the technical representative rather than a general number for the facility. An email address should also be entered for this person. EPA encourages facilities to provide an email address for the Technical Contact on their TRI submissions because they will be able to receive important program updates and email alerts notifying them when their eFDP has been updated and published for their review. If the technical contact does not have an email address, leave the field blank. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility. However, this person should be familiar with the details of the report so that he or she can answer questions about the information provided. As facilities may report unique technical contacts for each form, technical contact details are entered in TRI-MEweb with chemical-specific data rather than facility-identification information.

4.4 Public Contact

In TRI-MEweb, facilities must enter the name and telephone number (including area code) of a person who can respond to questions from the public about the form. You should also enter an e-mail address for this person. If the public contact does not have an email address, leave the field blank. If you choose to designate the same person as both the Technical and the Public Contact, or you do not have a Public Contact, you may enter "Same as Section 4.3" in this space. This contact person does not have to be the same person who prepares the form or signs the Certification Statement and does not necessarily need to be someone at the location of the reporting facility. As facilities may report unique public contacts for each form, public contact details are entered in TRI-MEweb with chemical-specific data rather than facility-identification information.

4.5 North American Industry Classification System (NAICS) Codes

Enter the appropriate six-digit North American Industry Classification System (NAICS) Code that is the primary NAICS Code for your facility in Section 4.5(a). Use 2017 NAICS codes for RY 2017 reporting. For RY 2013 – 2016 reporting, use 2012 NAICS codes; for RY 2006 – 2012 reporting, use 2007 NAICS codes. Enter any other applicable NAICS for your facility in 4.5 (b)-(f), also called "secondary NAICS codes" in TRI-MEweb. If you do not know your NAICS code(s), consult the 2017 NAICS Manual or check the SIC to NAICS crosswalk tables at: http://www.census.gov.

The North American Industry Classification System (NAICS) is the economic classification system that replaced the 1987 SIC code system. A Federal Register notice was published on June 6, 2006 (71 FR 32464) adopting 2007 NAICS codes for TRI reporting. A direct final rule was published July 18, 2013 (78 FR 42875), adopting 2012 NAICS codes for RY 2013 and subsequent years. A final rule was published in the Federal Register on December 26, 2017 (82 FR 52674) to adopt 2017 NAICS codes for RY 2017 and subsequent years. Table I lists all industries that are covered under EPCRA 313 and their corresponding 2017 NAICS codes.

4.6 Dun & Bradstreet Number(s)

Enter the nine-digit number assigned by Dun & Bradstreet (D&B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from Dun & Bradstreet by calling 1-888-814-1435, or by visiting this website: https://www.dnb.com/product/dlw/form_cc4.htm.

If a facility does not subscribe to the D&B service, a number can be obtained, toll free at 800 234-3867 (8:00 AM to 6:00 PM, EST) or on the Web at: http://www.dnb.com.

If none of your establishments has been assigned a D&B number, you should check "D&B Numbers Not Applicable." If only some of your establishments have been assigned D&B numbers, enter those numbers in Part I, section 4.6.

Section 5. Parent Company Information

You must provide information on your parent company. For TRI Reporting purposes, your parent company is the highest level company, located in the United States, and that directly owns at least 50 percent of the voting stock of your company. If there is no higher level U.S. company, select the "No U.S. Parent Company (for TRI reporting purposes)" check box. Corporate names should be treated as parent company names for companies with multiple facility sites. For example, the Bestchem Corporation is not owned or controlled by any other corporation but has sites throughout the country whose names begin with Bestchem. In this case, Bestchem Corporation should be listed as the parent company. Note that a facility that is a 50:50 joint venture is its own parent company. When a facility is owned by more than one company and none of the facility owners directly owns at least 50 percent of its voting stock, the facility should provide the name of the parent company of either the facility operator or the owner with the largest ownership interest in the facility.

5.1 Name of Parent Company

Enter the name of the corporation or other business entity that is your highest level U.S. parent company. If your facility has no higher level U.S. company, select the "No U.S. Parent Company (for TRI reporting purposes)" check box.

To improve data quality, TRI standardizes parent company names. TRI-MEweb is preloaded with the standardized parent company names. A full list of parent company names for RY 2017 is available for download at:

https://ofmpub.epa.gov/apex/guideme_ext/guideme_ext/guideme/file/RY_2017_Parent_Companies.xlsx.

5.2 Parent Company's Dun & Bradstreet Number

Enter the D&B number for your ultimate U.S. parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company or by calling 1-888-814-1435, or by visiting this website: https://www.dnb.com/product/dlw/form_cc4.htm.

If your parent company does not have a D&B number, you should check "Parent Company D&B Number Not Applicable."

D. Part II. Chemical Identification Information (Form R & A)

In Part II, you are to report on:

- The EPCRA Section 313 chemical being reported;
- The type of reporting form used (i.e., Form R or Form A);
- The general uses and activities involving the EPCRA Section 313 chemical at your facility (Form R only);
- On-site releases of the EPCRA Section 313 chemical from the facility to air, water, and land (Form R only);
- Quantities of the EPCRA Section 313 chemical transferred to off-site locations (Form R only);
- Information for on-site and off-site disposal, treatment, energy recovery, and recycling of the EPCRA Section 313 chemical (Form R only); and
- Source reduction activities (Form R only).

In TRI-MEweb, chemical specific information is entered by initiating a blank form for a chemical or chemical category. You may use the "Add New Chemical Forms" search tool to look up chemical and chemical categories by name or Chemical Abstracts Service (CAS) number to begin a new TRI reporting form. Alternately, you may use the Import Data function to create and pre-populate forms based on prior year forms submitted by the facility. TRI-MEweb will prompt users to indicate whether the form should be a TRI Form R or Form A.

The TRI listed chemicals for RY 2017 are listed both alphabetically and by CAS registry number in Table II. Chemical categories are listed separately in Table IIc. TRI-MEweb will not accept forms for chemicals not listed in a particular reporting year. For example, TRI-MEweb will not accept forms for the nonylphenol category prior to RY 2016 as it was first added for RY 2016. Facilities reporting a generic name provided by a supplier should see instructions in Section 2.

Reporting on the Alternate Threshold Form A Certification Statement for metals, metal category compounds, and mixed isomers differs somewhat from Form R reporting. Please refer to Section B.6.g for these guidelines.

Section 1. EPCRA Section 313 Chemical Identity (Form R & A)

1.1 CAS Number

Initiating a Form R or A for a chemical or chemical category in TRI-MEweb automatically completes this section.

1.2 EPCRA Section 313 Chemical or Chemical Category Name

Initiating a Form R or A for a chemical or chemical category in TRI-MEweb automatically completes this section.

1.3 Generic Chemical Name

Section 1.3 is completed only for trade secret submissions. For instructions on reporting trade secret claims, see Appendix G.

Example 10: Mixture Containing Unidentified EPCRA Section 313 Chemical

Your facility uses 20,000 pounds of a solvent that your supplier has told you contains 80 percent "chlorinated aromatic," their generic name for a non-PBT chemical subject to reporting under EPCRA Section 313. You, therefore, have used 16,000 pounds of some EPCRA Section 313 chemical and that exceeds the "otherwise use" threshold for a non-PBT chemical. You would file a Form R and enter the name "chlorinated aromatic" as the generic chemical name.

Section 2. Mixture Component Identity (Form R & A)

Complete this section only if you are reporting for an EPCRA 313 chemical whose identity has been withheld by the chemical supplier. You do not need to supply trade secret substantiation forms for this EPCRA Section 313 chemical because it is your supplier who is claiming the chemical identity a trade secret.

2.1 Generic Chemical Name Provided by Supplier

Enter the generic chemical name in this section only if the following three conditions apply:

1) You determine that the mixture contains an EPCRA Section 313 chemical but the only identity you have for that chemical is a generic name;

2) You know either the specific concentration of that EPCRA Section 313 chemical component or a maximum or average concentration level; and

3) You multiply the concentration level by the total annual amount of the whole mixture processed or otherwise used and determine that you meet the process or otherwise use threshold for that single, generically identified mixture component.

To begin a TRI Form R or A for a generic chemical in TRI-MEweb, navigate to the Forms Home page, click the "Add Form(s)" button for the facility reporting on a generic chemical, click the ***Generic Chemical Name Provided by Supplier*** link on the search window pop-up, and then enter the generic chemical name. The generic chemical name may not be that of a listed TRI chemical or chemical category and must be less than 70 characters in length. Click the "Begin Form" button next to the generic chemical added to the list of forms for the facility to prepare the TRI form.

Section 3. Activities and Uses of the EPCRA Section 313 Chemical at the Facility (Form R)

[Note that the remaining Part II Sections apply to the Form R only.]

Indicate whether the EPCRA Section 313 chemical is manufactured (including imported), processed, or otherwise used at the facility and the general nature of such activities and uses at the facility during the calendar year (see Figure 5). For each type of activity performed by the facility for the reported chemical (i.e., manufacturing, processing, or otherwise using), specify how that chemical was used and select the corresponding checkboxes, and provide the corresponding use codes as appropriate for categories that contain specific uses (e.g., processing as a reactant provides for P-codes to describe the processing activity with more detail). You are not required to report on Form R the quantity manufactured, processed or otherwise used. Report activities that take place only at your facility, not activities that take place at other facilities involving your products. You must check all the boxes in this section that apply. Starting with RY 2017, some processing and otherwise use codes contain sub-activities and sub-uses. Select all of these codes that apply. Refer to the definitions of "manufacture," "process," and "otherwise use" in Section B.3.a or Part 40, Section 372.3 of the CFR for additional explanations.

3.1 Manufacture the EPCRA Section 313 Chemical

Persons who manufacture (including import) the EPCRA Section 313 chemical must check at least one of the following:

a. ***Produce*** — The EPCRA Section 313 chemical is produced at the facility.

b. ***Import*** — The EPCRA Section 313 chemical is imported by the facility into the Customs Territory of the United States. (See Section B.3.a of these instructions for further clarification of import.)

And check at least one of the following:

c. ***For on-site use/processing*** — The EPCRA Section 313 chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, generally you should also check at least one item in Part II, Section 3.2 or 3.3.

d. ***For sale/distribution*** — The EPCRA Section 313 chemical is produced or imported

specifically for sale or distribution outside the manufacturing facility.

e. ***As a byproduct*** — The EPCRA Section 313 chemical is produced coincidentally during the manufacture, processing, or otherwise use of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. EPCRA Section 313 chemicals produced as a result of waste management are also considered byproducts.

f. ***As an impurity*** — The EPCRA Section 313 chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains in the mixture or other trade name product with that other chemical.

In summary, if you are a manufacturer of the EPCRA Section 313 chemical, you must check (a) and/or (b), and at least one of (c), (d), (e), and (f) in Section 3.1.

3.2 Process the EPCRA Section 313 Chemical

Persons who process the EPCRA Section 313 chemical must enter at least one of the following processing use codes:

a. ***As a reactant*** — A natural or synthetic EPCRA Section 313 chemical is used in chemical reactions for the manufacture of another chemical substance or of a product. If the chemical is processed as a reactant, you must indicate the applicable sub-uses:
   - **P101: *Feedstocks***
   - **P102: *Raw materials***
   - **P103: *Intermediates***
   - **P104: *Initiators***
   - **P199: *Other***

b. ***As a formulation component*** — An EPCRA Section 313 chemical is added to a product (or product mixture) prior to further distribution of the product that acts as a performance enhancer during use of the product. If the chemical is processed as a formulation component, you must indicate the applicable sub-uses:
   - **P201: *Additives***
   - **P202: *Dyes***
   - **P203: *Reaction diluents***
   - **P204: *Initiators***
   - **P205: *Solvents***
   - **P206: *Inhibitors***
   - **P207: *Emulsifiers***
   - **P208: *Surfactants***
   - **P209: *Lubricants***
   - **P210: *Flame retardants***
   - **P211: *Rheological modifiers***
   - **P299: *Other***

c. ***As an article component*** — An EPCRA Section 313 chemical becomes an integral component of an article distributed for industrial, trade, or consumer use. One example is the pigment components of paint applied to a chair that is sold.

d. ***Repackaging*** — This consists of processing or preparation of an EPCRA Section 313 chemical (or product mixture) for distribution in commerce in a different form, state, or quantity. This includes, but is not limited to, the transfer of material from a bulk container, such as a tank truck to smaller containers such as cans or bottles. This does not include sending toxic chemicals off-site into commerce for recycling, which is indicated using f. Recycling.

e. ***As an impurity*** — The EPCRA Section 313 chemical is processed but is not separated and remains in the mixture or other trade name product with that/those other chemical(s).

f. ***Recycling*** — This consists of processing or preparation of an EPCRA Section 313 chemical (or product mixture) for distribution in commerce in a different form, state, or quantity for purposes of recycling or reclamation.

In summary, if you are a processor of the EPCRA Section 313 chemical, you must check (a), (b), (c), (d), (e), or (f), and select all of the P-codes for (a) or (b) that apply.

3.3 Otherwise Use the EPCRA Section 313 Chemical (non-incorporative activities)

Persons who otherwise use the EPCRA Section 313 chemical must enter at least one of the following otherwise use activity codes:

a. ***As a chemical processing aid*** — An EPCRA Section 313 chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture is otherwise used as chemical processing aid. If the chemical is

otherwise used as a chemical processing aid, you must indicate the applicable sub-uses:

- **Z101:** ***Process solvents***
- **Z102:** ***Catalysts***
- **Z103:** ***Inhibitors***
- **Z104:** ***Initiators***
- **Z105:** ***Reaction terminators***
- **Z106:** ***Solution buffers***
- **Z199:** ***Other***

b. ***As a manufacturing aid*** — An EPCRA Section 313 chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance is otherwise used as a manufacturing aid. If the chemical is otherwise used as a manufacturing aid, you must indicate the applicable sub-uses:

- **Z201:** ***Process lubricants***
- **Z202:** ***Metalworking fluids***
- **Z203:** ***Coolants***
- **Z204:** ***Refrigerants***
- **Z205:** ***Hydraulic fluids***
- **Z299:** ***Other***

c. ***Ancillary or other use*** — An EPCRA Section 313 chemical that is used at a facility for purposes other than aiding chemical processing or manufacturing as described above is otherwise used as an ancillary or other use. If the chemical is otherwise used as an ancillary or other use, you must indicate the applicable sub-uses:

- **Z301:** ***Cleaner***
- **Z302:** ***Degreaser***
- **Z303:** ***Lubricant***
- **Z304:** ***Fuel***
- **Z305:** ***Flame retardant***
- **Z306:** ***Waste treatment***
- **Z307:** ***Water treatment***
- **Z308:** ***Construction Materials***
- **Z399:** ***Other***

In summary, if you otherwise use the EPCRA Section 313 chemical, you must check (a), (b), and/or (c), and select all of the Z-codes for (a), (b), or (c) that apply.

SECTION 1. TOXIC CHEMICAL IDENTITY
(Important: DO NOT complete this section if you are reporting a mixture component in Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
	334-88-3
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
	Diazomethane
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY **(Important: DO NOT complete this section if you completed Section 1.)**

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☑ Produce b. ☐ Import If Produce or Import c. ☑ For on-site use/processing d. ☑ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity	a. ☑ As a reactant b. ☐ As a formulation component c. ☐ As an article component d. ☐ Repackaging e. ☐ As an impurity	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid c. ☐ Ancillary or other use

Figure 5. Reporting EPCRA Section 313 Chemicals

Section 4. Maximum Amount of the

Example 11: Manufacturing and Processing Activities of EPCRA Section 313 Chemicals

In the two examples below, it is assumed that the threshold quantities for manufacture, process, or otherwise use (25,000 pounds, 25,000 pounds, and 10,000 pounds, respectively for non-PBT chemicals; 100 pounds for certain PBT chemicals; 10 pounds for highly persistent, highly bioaccumulative toxic chemicals; and 0.1 grams for the PBT chemical category comprised of dioxin and dioxin-like compounds) have been exceeded and the reporting of EPCRA Section 313 chemicals is therefore required.

1. Your facility manufactures diazomethane. Fifty percent is sold as a product, thus it is processed. The remaining fifty percent is reacted with alpha-naphthylamine, forming N-methyl-alpha-naphthylamine and also producing nitrogen gas.

- Your company manufactures diazomethane, an EPCRA Section 313 chemical, both for sale/ distribution as a commercial product and for on-site use/processing as a feedstock in the N-methyl-alpha-naphthylamine production process. Because the diazomethane is a reactant, it is also processed. See Figure 5 for how this information would be reported in Part II, Section 3 of Form R.
- Your facility also processes alpha-naphthylamine, as a reactant to produce N-methyl-alpha-naphthylamine, a chemical not on the EPCRA Section 313 list.

2. Your facility is a commercial distributor of Missouri bituminous coal, which contains mercury at 1.5 ppm (w:w). You should check the box on Part II, Section 3.2.e for processing mercury as an impurity.

EPCRA Section 313 Chemical On-site at Any Time during the Calendar Year (Form R)

For data element 4.1 of Part II, select the code (see codes below) that indicates the maximum quantity of the EPCRA Section 313 chemical (e.g., in storage tanks, process vessels, on-site shipping containers, or in wastes generated) at your facility at any time during the calendar year. If the EPCRA Section 313 chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time. While range reporting is not allowed for PBT chemicals elsewhere on the Form R, range reporting for PBT chemicals is allowed for the Maximum Amount On-site.

Weight Range in Pounds

Range Code	From	To
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the EPCRA Section 313 chemical present at your facility was part of a mixture or other trade name product, determine the maximum quantity of the EPCRA Section 313 chemical present at the facility by calculating the weight percent of the EPCRA Section 313 chemical only.

Do not include the weight of the entire mixture or other trade name product. These data may be found in the Tier II form your facility may have prepared under Section 312 of EPCRA. See Part 40, Section 372.30(b) of the CFR for further information on how to calculate the weight of the EPCRA Section 313 chemical in the mixture or other trade name product. For EPCRA Section 313 chemical categories (e.g., nickel compounds), include all chemical compounds in the category when calculating the maximum amount, using the entire weight of each compound.

Weight Range in Grams (Dioxin and Dioxin-like Compounds)

When reporting for the dioxin and dioxin-like compounds category use the following gram quantity range codes:

Range Code	From	To
12	0	0.099
13	0.1	0.99
14	1.0	9.99
15	10	99
16	100	999
17	1,000	9,999
18	10,000	99,999
19	100,000	999,999
20	1,000,000	more than 1 million

Section 5. Quantity of the Toxic Chemical Entering Each Environmental Medium On-site (Form R)

In Section 5, you must account for the total aggregate on-site releases of the EPCRA Section 313 chemical to the environment from your facility for the calendar year.

On-site releases to the environment include emissions to the air, discharges to surface waters, and releases to land (including underground injection wells).

For all toxic chemicals (except the dioxin and dioxin-like compound category), do not enter the values in Section 5 in gallons, tons, liters, or any measure other than pounds. You must also enter the values as whole numbers (do not use scientific notation). Numbers following a decimal point are not acceptable for toxic chemicals other than those designated as PBT chemicals. For PBT chemicals, facilities should report release and other waste management quantities greater than 0.1 pound (except the dioxin and dioxin-like compounds category), provided the accuracy and the underlying data on which the estimate is based supports this level of precision.

For the dioxin and dioxin-like compounds category, facilities should report at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. For the dioxin and dioxin like compounds chemical category, which has a reporting threshold of 0.1 gram, facilities need only report all release and other waste management quantities greater than 100 micrograms (i.e., 0.0001 grams). (See Example 12) Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision up to seven digits to the right of the decimal.

Example 12: Reporting Dioxins and Dioxin-Like Compounds

If the total quantity for Section 5.2 of the Form R (i.e., stack or point air emissions) is 0.00005 grams or less, then zero can be entered. If the total quantity is between 0.00005 and 0.0001 grams, then 0.0001 grams can be entered or the actual number can be entered (e.g., 0.000075).

NA vs. a Numeric Value (e.g., Zero). Generally, NA is applicable if the waste stream that contains or contained the EPCRA Section 313 chemical is not directed to the relevant environmental medium, or if leaks, spills and fugitive emissions cannot occur. If the waste stream that contains or contained the EPCRA Section 313 chemical is directed to the environmental medium, or if leaks, spills or fugitive emissions can occur, NA should not be used, even if treatment or emission controls result in a release of zero. If the annual aggregate release of that chemical was equal to or less than 0.5 pound, the value reported is zero (unless the chemical is a listed PBT chemical).

For Section 5.1, NA generally is not applicable for volatile organic compounds (VOCs). For Section 5.5.4, NA generally would not be applicable, recognizing the possibility of accidental spills or leaks of the EPCRA Section 313 chemical.

An example that illustrates the use of NA vs. a numeric value (e.g., zero) would be nitric acid involved in a facility's processing activities. If the facility neutralizes the wastes containing nitric acid to a pH of 6 or above, then the facility reports a release of zero for the EPCRA Section 313 chemical, not NA. Another example is when the facility has no underground injection well, in which case NA should be checked in Part II, Section 5.4.1 and 5.4.2 of Form R. Also, if the facility does not landfill the acidic waste, NA should be checked in Part II, Section 5.5.1.B of Form R.

All releases of the EPCRA Section 313 chemical to the air must be classified as either stack or fugitive emissions, and included in the total quantity reported for these releases in Sections 5.1 and 5.2. Instructions for columns A, B, and C follow the discussions of Sections 5.1 through 5.5.

5.1 Fugitive or Non-Point Air Emissions

Report the total of all releases of the EPCRA Section 313 chemical to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments and spills; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions. Engineering estimates and mass balance calculations (using purchase records, inventories, engineering knowledge or process specifications of the quantity of the EPCRA Section 313 chemical entering product, hazardous waste manifests, or monitoring records) may be useful in estimating fugitive emissions. You should check the NA box in Section 5.1 if you do not engage in activities that result in fugitive or non-point air emissions of this listed toxic chemical. For VOCs, NA generally would not be applicable.

5.2 Stack or Point Air Emissions

Report the total of all releases of the EPCRA Section 313 chemical to the air that occur through stacks, confined vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from air pollution control equipment would generally fall in this category. Monitoring data, engineering estimates, and mass balance calculations may help you to complete this section. You should check the NA box in Section 5.2 if there are no stack air activities involving the waste stream that contains or contained the EPCRA Section 313 chemical.

5.3 Discharges to Receiving Streams or Water Bodies

In Section 5.3 you are to enter all the names of the streams or water bodies to which your facility directly discharges the EPCRA Section 313 chemical on which you are reporting. Facilities may enter releases to as many unique receiving streams or water bodies as needed in TRI-MEweb. In addition, you may also enter the 14-digit reach code, which is a unique code that identifies a continuous piece of surface water with similar hydrologic characteristics, assigned to each receiving water body by the United States Geographical Society's (USGS) National Hydrography Dataset (NHD). Note that reach data are not available for Alaska, Guam, American Samoa and the Northern Mariana Islands, so facilities located in these areas should leave this field blank.

EPA maps all reported discharges to reaches for purposes of its Risk Screening Environmental Indicators (RSEI) model, Discharge Monitoring Reports (DMR) Pollutant Loading Tool, and for other analyses. Identifying your stream or water body by entering a reach code in this section ensures that EPA will map your discharges to the correct reach.

In TRI-MEweb, facilities have the option of using an interactive map interface to locate and identify the receiving stream or water body to which the chemical was released. TRI-MEweb will automatically populate the appropriate reach code field when you select your receiving water body on the map provided in the user interface for this section.

The name of the receiving stream or water body and reach code may be manually entered by following the ***Can't find or identify your stream or water body on the map***? link. In such a case, you should report the name of the receiving stream or water body and reach code as it appears on a discharge permit or other appropriate documentation. If the stream is not included in the NPDES permit or its name is not identified in the NPDES permit, enter the name of the off-site stream or water body by which it is publicly known or enter the first publicly named water body to which the receiving waters are a tributary, if the receiving waters are unnamed. Do not list a series of streams through which the EPCRA Section 313 chemical flows. Be sure to include all the receiving streams or water bodies that receive stormwater runoff from your facility. Do not enter names of streams to which off-site treatment plants discharge.

You should check the NA box in Section 5.3 if there are no discharges to receiving streams or water bodies of the waste stream that contains or contained the EPCRA Section 313 chemical (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5).

For each unique stream or water body, enter the total annual amount of the EPCRA Section 313 chemical released from all discharge points at the facility to each receiving stream or water body. Include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff, if applicable (see instructions for column C below). Do not include discharges to a POTW or other off-site wastewater treatment facilities in this section. These off-site transfers must be reported in Part II, Section 6 of Form R. Wastewater analyses

and flowmeter data may provide the quantities you will need to complete this section.

Discharges of listed acids (e.g., hydrogen fluoride, nitric acid) may be reported as zero if the discharges have been neutralized to pH 6 or above. If wastewater containing a listed acid is discharged below pH 6, then releases of the acid must be reported. In this case, pH measurements may be used to estimate the amount of mineral acid released.

5.4-5.5 Disposal to Land On-site

Eight predefined subcategories for reporting quantities released to land within the boundaries of the facility (including underground injection) are provided. Do not report land disposal at off-site locations in this section. Consulting accident histories and spill records may be useful when preparing this section (e.g., release notification reports required under Section 304 of EPCRA, Section 103 of CERCLA, and accident histories required under Section 112(r)(7)(B)(ii) of the Clean Air Act). Where relevant, you should check the NA box in sections 5.4.1 through 5.5.3 if there are no disposal activities for the waste stream that contains or contained the EPCRA Section 313 chemical (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5). For 5.5.4, facilities generally should report zero, recognizing the potential for spills or leaks.

5.4.1 Class I Underground Injection Wells

Enter the total amount of the EPCRA Section 313 chemical that was injected into Class I wells at the facility. Chemical analyses, injection rate meters, and RCRA Hazardous Waste Generator Reports are good sources for obtaining data that will be useful in completing this section. You should check the NA box in Section 5.4.1 if you do not inject the waste stream that contains or contained the EPCRA Section 313 chemical into Class I underground wells (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5).

5.4.2 Class II-V Underground Injection Wells

Enter the total amount of the EPCRA Section 313 chemical that was injected into wells at the facility other than Class I wells. Chemical analyses and injection rate meters are good sources for obtaining data that will be useful in completing this section. You should check the NA box in Section 5.4.2 if you do not inject the waste stream that contains or contained the EPCRA Section 313 chemical into Class II-V underground wells (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5).

5.5.1A RCRA Subtitle C Landfills

Enter the total amount of the EPCRA Section 313 chemical that was placed in RCRA Subtitle C landfills. EPA has not required facilities to estimate leaks from landfills because the amount of the EPCRA Section 313 chemical has already been reported as a release.

5.5.1B Other Landfills

Enter the total amount of the EPCRA Section 313 chemical that was placed in landfills other than RCRA Subtitle C landfills. EPA has not required facilities to estimate leaks from landfills because the amount of the EPCRA Section 313 chemical has already been reported as a release.

5.5.2 Land Treatment/Application Farming

Land treatment is a disposal method in which a waste containing an EPCRA Section 313 chemical is applied onto or incorporated into soil. While this disposal method is considered a release to land, any volatilization of EPCRA Section 313 chemicals into the air occurring during the disposal operation must not be included in this section but must be included in the total fugitive air releases reported in Part II, Section 5.1 of Form R.

5.5.3 Surface Impoundments

A surface impoundment is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although some may be lined with man-made materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids. Examples of surface impoundments are holding, settling, storage, and elevation pits; ponds, and lagoons. If the pit, pond, or lagoon is intended for storage or holding without discharge, it would be considered to be a surface impoundment used as a final disposal method. A facility must determine, to the best of its ability, the percentage of a volatile chemical, e.g., benzene, that is in waste sent to a surface impoundment that evaporates during the reporting year. The facility must report this as a fugitive air emission in section 5.1. The balance should be reported in either section 5.5.3A or 5.5.3B.

Quantities of the EPCRA Section 313 chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally should not be reported in this section. However, if an impoundment accumulates sludges containing the EPCRA Section 313 chemical, you must include an estimate in this section unless the

sludges are removed and otherwise disposed of (in which case they must be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of Form R.

5.5.3A RCRA Subtitle C Surface Impoundments
Enter the total amount of the EPCRA Section 313 chemical that was placed in RCRA Subtitle C surface impoundments.

5.5.3B Other Surface Impoundments
Enter the total amount of the EPCRA Section 313 chemical that was placed in surface impoundments other than RCRA Subtitle C surface impoundments.

5.5.4 Other Disposal
Includes any amount of an EPCRA Section 313 chemical released to land that does not fit the categories of landfills, land treatment, or surface impoundment. This other disposal would include any spills or leaks of EPCRA Section 313 chemicals to land. For example, 2,000 pounds of benzene leaks from an underground pipeline into the land at a facility. Because the pipe was only a few feet from the surface at the erupt point, 30 percent of the benzene evaporates into the air. The 600 pounds released to the air would be reported as a fugitive air release (Part II, Section 5.1) and the remaining 1,400 pounds would be reported as a release to land, other disposal (Part II, Section 5.5.4).

Section 5 Column A: Total Release

Only on-site releases of the EPCRA Section 313 chemical to the environment for the calendar year are to be reported in this section of Form R. The total on-site releases from your facility do not include transfers or shipments of the EPCRA Section 313 chemical from your facility for sale or distribution in commerce, or of wastes to other facilities for disposal, treatment, energy recovery, or recycling (see Part II, Section 6 of these Instructions). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

Releases of Less Than 1,000 Pounds. For total annual releases or off-site transfers of an EPCRA Section 313 chemical from the facility of less than 1,000 pounds, the amount may be reported either as an estimate or by using the range codes that have been developed (range reporting in section 5 does not apply to PBT chemicals). Do not enter a range code and an estimate in the same box in column A.

The reporting range codes to be used are:

Code	Range (pounds)
A	1-10
B	11-499
C	500-999

Total annual on-site releases of an EPCRA Section 313 chemical from the facility of less than 1 pound may be reported in one of several ways. You should round the value to the nearest pound. If the estimate is greater than 0.5 pound, you should either enter the range code “A” for “1-10” or enter “1” in column A. If the release is equal to or less than 0.5 pounds, you may round to zero and enter “0” in column A.

Note that total annual releases of 0.5 pound or less from the processing or otherwise use of an article maintain the article status of that item. Thus, if the only releases you have are from processing an article, and such releases are equal to or less than 0.5 pound per year, you are not required to submit a report for that EPCRA Section 313 chemical. The 0.5-pound release determination does not apply to just a single article. It applies to the cumulative releases from the processing or otherwise use of the same type of article (e.g., sheet metal or plastic film) that occurs over the course of the reporting year.

If you enter a range code in column A, some TRI data tools used by the public will display the midpoint of the range (i.e., 5, 250, or 750 lb).

Releases of 1,000 Pounds or More. For releases to any medium that amount to 1,000 pounds or more for the year, you must provide an estimate in pounds per year in column A.

Data Precision. Generally, estimates provided need not be reported to more than two significant figures. This estimate should be in whole numbers. However, facilities should report releases and other waste management amounts at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. If a facility’s release or other management calculations support reporting an amount that is more precise than two significant digits, then the facility should report that more precise amount.

Calculating On-Site Releases. To provide the release information in column A, EPCRA Section 313(g) (2) requires a facility to use readily available data (including monitoring data) collected pursuant to other provisions of law, or, where such data are not readily available, "reasonable estimates" of the amounts involved. If available data (including monitoring data) are known to be non-representative, facilities must make reasonable estimates using the best readily available information.

Reasonable estimates of the amounts released should be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any EPCRA Section 313 chemical released into the environment, or of the frequency of such releases, beyond that required under other provisions of law or regulation or as part of routine plant operations, is required for the purpose of completing Form R.

You must estimate the quantity (in pounds) of the EPCRA Section 313 chemical or chemical category that is released annually to each environmental medium on-site. Include only the quantity of the EPCRA Section 313 chemical in this estimate. If the EPCRA Section 313 chemical present at your facility was part of a mixture or other trade name product, calculate only the releases of the EPCRA Section 313 chemical, not the other components of the mixture or other trade name product. If you are only able to estimate the releases of the mixture or other trade name product as a whole, you should assume that the release of the EPCRA Section 313 chemical is proportional to its concentration in the mixture or other trade name product. See Part 40, Section 372.30(b) of the CFR for further information on how to calculate the concentration and weight of the EPCRA Section 313 chemical in the mixture or other trade name product.

If you are reporting an EPCRA Section 313 chemical category listed in Table II of these instructions rather than a specific EPCRA Section 313 chemical, you must combine the release data for all chemicals in the EPCRA Section 313 chemical category (e.g., all listed members of certain glycol ethers or all listed members of chlorophenols) and report the aggregate amount for that EPCRA Section 313 chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol to air as fugitive emissions, you must report that your facility releases 11,000 pounds per year of chlorophenols to air as fugitive emissions in Part II, Section 5.1.

For aqueous ammonia solutions, releases must be reported based on 10 percent of total aqueous ammonia. Ammonia evaporating from aqueous ammonia solutions is considered to be anhydrous ammonia; therefore, 100 percent of the anhydrous ammonia should be reported if it is released to the environment.

For dissociable nitrate compounds, release estimates should be based on the weight of the nitrate only.

For metal category compounds (e.g., chromium compounds), report releases of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released regardless of the chemical compound and exclude any contribution to mass made by the other portion of the compound.

Section 5 Column B: Basis of Estimate

For each release and otherwise managed waste estimate (Sections 5 & 6), you are required to indicate the principal method used to determine the amount of release and otherwise managed waste reported. You should enter a letter code identifying the method that applies to the largest portion of the total estimated release and otherwise managed waste quantity.

The codes are as follows:

M1 Estimate is based on continuous monitoring data or measurements for the EPCRA Section 313 chemical.

M2 Estimate is based on periodic or random monitoring data or measurements for the EPCRA Section 313 chemical.

C Estimate is based on mass balance calculations, such as calculation of the amount of the EPCRA Section 313 chemical in streams entering and leaving process equipment.

E1 Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

E2 Estimate is based on on-site specific emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

O Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

For example, if 40 percent of stack emissions of the reported EPCRA Section 313 chemical were derived using source testing data, 30 percent by mass balance, and 30 percent by published chemical-specific emission factors, you should enter the code letter "M2" for periodic or random emission monitoring.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the EPCRA Section 313 chemical being reported, the form should identify the estimate based on other methods of estimation (O).

If a mass balance calculation yields the flow rate of a waste, but the quantity of reported EPCRA Section 313 chemical in the waste is based on solubility data, you should report "O" because engineering calculations were used as the basis of estimate of the quantity of the EPCRA Section 313 chemical in the waste.

If the concentration of the EPCRA Section 313 chemical in the waste was measured by continuous emissions monitoring equipment and the flow rate of the waste was determined by mass balance, then the primary basis of the estimate should be "continuous emission monitoring" (M1). Even though a mass balance calculation also contributed to the estimate, "continuous emission monitoring" should be indicated because monitoring data were used to estimate the concentration of the chemical in waste.

Mass balance (C) should only be indicated if it is directly used to calculate the mass (weight) of EPCRA Section 313 chemical released. Monitoring data should be indicated as the basis of estimate only if the EPCRA Section 313 chemical concentration is measured in the waste. Monitoring data should not be indicated, for example, if the monitoring data relate to a concentration of the EPCRA Section 313 chemical in other process streams within the facility.

It is important to realize that the accuracy and proficiency of release estimation will improve over time. However, submitters are not required to use new emission factors or estimation techniques to revise previous Form R submissions.

Section 5 Column C: Percent from Stormwater

This column relates only to Section 5.3 - discharges to receiving streams or water bodies. If your facility has monitoring data on the amount of the EPCRA Section 313 chemical in stormwater runoff (including unchanneled runoff), you must include that quantity of the EPCRA Section 313 chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the EPCRA Section 313 chemical contributed by stormwater in column C (Section 5.3C).

If your facility has monitoring data on the EPCRA Section 313 chemical and an estimate of flow rate, you must use these data to determine the percent stormwater.

If you have monitored stormwater but did not detect the EPCRA Section 313 chemical, enter zero in column C. If your facility has no stormwater monitoring data for the chemical, you should check the NA box.

If your facility does not have periodic measurements of stormwater releases of the EPCRA Section 313 chemical, but has submitted chemical-specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. One way to calculate the flow rates from stormwater runoff is the Rational Method. In this method, flow rates, Q, can be estimated by multiplying the land area of the facility, A, by the runoff coefficient, C, and then multiplying that figure by the annual rainfall intensity, I (i.e., $Q = A \times C \times I$). The rainfall intensity, I, is specific to the geographical area of the country where the facility is located, and may be obtained from most standard engineering manuals for hydrology. The flow rate, Q, will have volumetric dimensions per unit time, and will have to be converted to units of pounds per year. The runoff coefficient represents the fraction of rainfall that does not seep into the ground but runs off as stormwater. The runoff coefficient is directly related to how the land in the drainage area is used. (See table below).

Description of Land Area	Runoff Coefficient	Description of Land Area	Runoff Coefficient

Business	
Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Industrial	
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets	
Asphaltic	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.70-0.85
Roofs	0.75-0.95
Lawns: Sandy Soil	
Flat, 2 percent	0.05-0.10
Average, 2 - 7 percent	0.10-0.15
Steep, 7 percent	0.15-0.20
Lawns: Heavy Soil	
Flat, 2 percent	0.13-0.17
Average, 2 - 7 percent	0.18-0.22
Steep, 7 percent	0.25-0.35

You should choose the most appropriate runoff coefficient for your site or calculate a weighted-average coefficient, which takes into account different types of land use at your facility:

Weighted-average runoff coefficient =

(Area 1 % of total)(C1) + (Area 2 % of total)(C2) + (Area 3 % of total)(C3) + ... + (Area i % of total)(Ci)

where

Ci = runoff coefficient for a specific land use of Area i.

Example 13: Stormwater Runoff

Your facility is located in a semi-arid region of the United States that has an annual precipitation (including snowfall) of 12 inches of rain. (Snowfall should be converted to the equivalent inches of rain; assume one foot of snow is equivalent to one inch of rain.) The total area covered by your facility is 42 acres (about 170,000 square meters or 1,829,520 square feet). The area of your facility is 50 percent unimproved area, 10 percent asphaltic streets, and 40 percent concrete pavement.

The total stormwater runoff from your facility is therefore calculated as follows:

Land Use	% Total Area	Runoff Coefficient
Unimproved area	50	0.20
Asphaltic streets	10	0.85
Concrete pavement	40	0.90

Weighted-average runoff coefficient = [(50%) × (0.20)] + [(10%) × (0.85)] × [(40%) x (0.90)] = 0.545

(Rainfall) × (land area) × (conversion factor) × (runoff coefficient) = stormwater runoff
(1 ft/year) × (1,829,520 ft^2) × (7.48 gal/ft^3) × (0.545) = 7,458,222 gallons/year

Total stormwater runoff = 7,458,222 gallons/year

Your stormwater monitoring data shows that the average concentration of zinc in the stormwater runoff from your facility from a biocide containing a zinc compound is 1.4 milligrams per liter. The total amount of zinc discharged to surface water through the plant wastewater discharge (non-stormwater) is 250 pounds per year. The total amount of zinc discharged with stormwater is:

(7,458,222 gallons stormwater) × (3.785 liters/gallon) = 28,229,370 liters stormwater

(28,229,370 liters stormwater) × (1.4 mg zinc/liter) × 10^3 g/mg × (1/454) lb/g = 87 lb zinc.

The total amount of zinc discharged from all sources of your facility is:

250 pounds zinc from wastewater discharged
+87 pounds zinc from stormwater runoff
337 pounds zinc total water discharged

The percentage of zinc discharge through stormwater reported in section 5.3 column C on Form R is:

(87/337) × 100% = 26%

Section 5.5 Optional Waste Rock Piles Information

If you manage the EPCRA Section 313 chemical in waste rock that was disposed of on-site, you may elect to provide additional optional information. Waste rock refers to rock that contains insufficient metal concentration to economically process at any given time and is thus typically removed from the mine to allow access to the ore-grade rock. Waste rock does not refer to slag, tailings, or other beneficiated rock or ore. Check the optional box if you would like to indicate that your reported Section 5.5 quantities include management of the chemical in “waste rock piles.” Additionally, you may enter the quantity of the chemical reported in Section 5.5 that was managed in waste rock piles. TRI-MEweb will allow for the inclusion of optional free text that a facility may use to further characterize its on-site management of waste rock. Any information provided in the free-text field will be added to Section 9.1 (Miscellaneous Information).

Section 6. Transfer(s) of the Toxic Chemical in Wastes to Off-Site Locations (Form R)

You must report in this section the total annual quantity of the EPCRA Section 313 chemical in wastes sent to any off-site facility for the purposes of disposal, treatment, energy recovery, or recycling. Report the total amount of the EPCRA Section 313 chemical transferred off-site after any on-site waste treatment, recycling, or removal is completed.

For all toxic chemicals (except the dioxin and dioxin-like compounds category), do not enter the values in Section 6 in gallons, tons, liters, or any measure other than pounds. You must also enter the values as whole numbers. Numbers following a decimal point are not acceptable for toxic chemicals other than those designated as PBT chemicals. For PBT chemicals, facilities should report release and other waste management quantities greater than 0.1 pound (except the dioxin and dioxin-like compounds category) provided the accuracy and the underlying data on which the estimate is based supports this level of precision.

Dioxin and dioxin-like compounds category. Facilities should report at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. TRI-MEweb and EPA's data management systems support data precision to seven digits to the right of the decimal. The smallest quantity that needs to be reported on the Form R for the dioxin and dioxin-like compounds category is 0.0001 grams (see Example 12).

NA vs. a Numeric Value (e.g., Zero). You must enter a numeric value if you transfer an EPCRA Section 313 chemical to a Publicly Owned Treatment Works (POTW) or transfer wastes containing that toxic chemical to other off-site locations. If the aggregate amount transferred was less than 0.5 pound, then you should enter zero (unless the chemical is listed as a PBT chemical). Also report zero for transfers of listed mineral acids (i.e., hydrogen fluoride and nitric acid) if they have been neutralized to a pH of 6 or above prior to discharge to a POTW; do not check NA.

However, if you do not discharge wastewater containing the reported EPCRA Section 313 chemical to a POTW, you should check the "Not Applicable" box in Section 6.1. If you do not ship or transfer wastes containing the reported EPCRA Section 313 chemical to other off-site locations, you should check the "Not Applicable" box in Section 6.2. In TRI-MEweb, users may enter as many unique transfers as needed.

6.1 Discharges to Publicly Owned Treatment Works

In Section 6.1, facilities using TRI-MEweb can click "**Add New POTW"** to use a search tool to search POTWs by location or facility identifiers including EPA Registry ID (FRS ID), NPDES ID, or RCRA ID. If the receiving POTW cannot be identified using the search, the user may enter the POTW information manually by clicking "**Enter New POTW**," and then provide the receiving POTWs' name and address.

Facilities should report for each POTW to which the facility discharges or otherwise transfers wastewater containing the reported EPCRA Section 313 chemical. The most common transfers of this type will be conveyances of the toxic chemical in facility wastewater through underground sewage pipes; however, materials may also be trucked or transferred via some other direct methods to a POTW.

Facilities report the total quantity transferred to each POTW and the basis of estimate for the total quantity reported in Section 6.1.[ ]A or Section 6.1.[ ]B (for columns A and B, respectively).

If you do not discharge wastewater containing the reported EPCRA Section 313 chemical to a POTW, enter NA in the box in Section 6.1. (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 6).

6.1.[ ] Column A: Quantity Transferred to this POTW

Enter the total amount, in pounds, of the reported EPCRA Section 313 chemical that is contained in the wastewaters transferred to each POTW. Do not enter the total poundage of the wastewaters. If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code (range reporting in section 6.1.[ ]_A. does not apply to PBT chemicals). The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10

Code	Reporting Range (in pounds)
B	11-499
C	500-999

If you enter a range code in column A, some TRI data tools used by the public will display the midpoint of the range (i.e., 5, 250, or 750 lb).

If you transfer the EPCRA Section 313 chemical in wastewater to an off-site POTW for distinct and multiple purposes, you must report those activities for each off-site POTW, along with the quantity of the reported EPCRA Section 313 chemical associated with each activity. These quantities and the associated activity codes must be reported separately in Section 6.1. If you have fewer than four total transfers in Section 6.1 Column A, an NA should be placed in Column A of the first unused row to indicate the termination of the sequence. If all four rows are used, there is no need to terminate the sequence. If there are more than four total transfers, re-enter the name of the off-site location, address, etc. in the next row (6.1.2) and then you should enter NA when the sequence has terminated if there are fewer than 8 (i.e. anytime there are fewer than 4 transfers listed in a Section 6.1 block, an NA should be used to terminate the sequence).

Do not double or multiple count amounts transferred off-site. For example, when a reported EPCRA Section 313 chemical is sent to an off-site POTW for sequential activities, you should report the final disposition of the toxic chemical.

6.1[ ] Column B: Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported EPCRA Section 313 chemical in the wastewater transferred to each POTW. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

M1 Estimate is based on continuous monitoring data or measurements for the EPCRA Section 313 chemical.

M2 Estimate is based on periodic or random monitoring data or measurements for the EPCRA Section 313 chemical.

C Estimate is based on mass balance calculations, such as calculation of the amount of the EPCRA Section 313 chemical in streams entering and leaving process equipment.

E1 Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

E2 Estimate is based on-site specific emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

O Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

6.1[ ] Column C: Disposal/ Treatment

You should enter one of the following P codes to identify the type of disposal or treatment methods used by the POTW for the reported EPCRA Section 313 chemical. You must use separate transfers and codes for a single location when distinct quantities of the reported EPCRA Section 313 chemical are subject to different waste management activities. You must use the code that represents the ultimate disposition of the chemical.

Metals and Metal Category Compounds

Metals and metal category compounds will be managed in wastewater by being recycled. Remember that the release and other waste management information that you report for metal category compounds will be the total amount of the parent metal released and NOT the whole metal category compound. The metal cannot be treated because it cannot be destroyed. Thus, transfers of metals and metal category compounds for further waste management should be reported as a disposal. The applicable codes for transfers of metals and metal category compounds in wastewater to a POTW for disposal include P-30, P-31, P-32, P-33, P-34, P-35, and P-36.

Applicable codes for Part II, Section 6.1, column C are:

<u>Disposal Codes:</u>

P-30 – POTWs Only – Discharged to Water Stream
P-31 – POTWs Only – Discharged to Other Activities
P-32 – POTWs Only – Released to Air
P-33 – POTWs Only – Sludge to disposal

P-34 – POTWs Only – Metals and metal compounds only – Sludge to incineration
P-35 – POTWs Only – Sludge to agricultural applications
P-36 – POTWs Only – Other or Unknown Disposal

Treatment Codes:

P-37 – POTWs Only – Other or Unknown treatment
P-38 – POTWs Only – Sludge to incineration

Facilities should provide the ultimate disposition of toxic chemicals at POTWs. For example, if the toxic chemical is:

- in the POTWs' effluent and is discharged to surface waters / water stream - use P-30
- discharged to other activities such as watering golf courses, agricultural land, etc. - use P-31
- released to air - use P-32
- in the POTWs' sludge and is disposed via landfill disposal or land application - use P-33
- incinerated – use P-38 (P-34 for metals and metal compounds)
- disposed via agricultural applications or other activities - use P-35

If facilities do not have specific information about toxic chemicals - use P-36 and/or P-37.

6.2 Transfers to Other Off-Site Locations

In Section 6.2, facilities using TRI-MEweb can click "**New Location**" to access a form to search off-site transfer locations by location or RCRA ID. to which the facility ships or transfers wastes containing the reported EPCRA Section 313 chemical for the purposes of disposal, treatment, energy recovery, or recycling. If the receiving other off-site location cannot be identified using the search, the user may enter the off-site location information clicking "**Enter New Location**," and then indicating the receiving other off-site locations' name and address. Reporters must also indicate if the receiving location is under the control of the reporting facility or parent company.

In general, a RCRA ID Number (also called an EPA Identification Number) will commonly be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations for the transfer of hazardous wastes. However, please note that an off-site transfer of a non-hazardous waste containing a TRI chemical may be received by a facility with a RCRA ID. If the receiving facility's RCRA ID is known, even if it is not associated with the waste transfer that you are initiating, it should be provided in Section 6.2. The purpose of the RCRA ID number is for the identification of the off-site transfer facility and not just to indicate a hazardous waste transfer. If you ship or transfer wastes containing an EPCRA Section 313 chemical and the off-site location does not have an EPA Identification Number, enter NA in the box for the off-site location EPA Identification Number.

Specifically for other off-site transfers, facilities must also report the type of disposal, treatment, energy recovery, or recycling methods used by the off-site location for the reported EPCRA Section 313 chemical (see Section 6.2 Column C). If appropriate, you must report multiple activities for each off-site location. For example, if your facility sends a reported EPCRA Section 313 chemical in a single waste stream to an off-site location where some of the EPCRA Section 313 chemical is to be recycled while the remainder of the quantity transferred is to be treated, you must report both the waste treatment and recycle activities, along with the quantity associated with each activity.

If your facility transfers an EPCRA Section 313 chemical to an off-site location and that off-site location performs more than four activities on that chemical, multiple transfers may be listed by clicking "**+ Add Transfer.**"

If you do not ship or transfer wastes containing the EPCRA Section 313 chemical to other off-site locations, you should check the Not Applicable box in Section 6.2, "Transfers to Other Off-Site Locations."

If you ship or transfer the reported EPCRA Section 313 chemical in wastes to another country, you do not need to report a RCRA ID for that waste. You should check "Not Applicable" for the RCRA ID field. Enter the location information for the non-U.S. facility including: location name, address, city, province, country, and postal code. TRI-MEweb provides a dropdown for selecting countries and

their Federal Information Processing Standards (FIPS) codes. There is nothing to enter in the state field.

6.2[ ] Column A: Total Transfers

For each off-site location, enter the total amount, in pounds (in grams for dioxin and dioxin-like compounds), of the EPCRA Section 313 chemical that is contained in the waste transferred to that location. ***Do not enter the total quantities of the waste.*** If you do not ship or transfer wastes containing the EPCRA Section 313 chemical to other off-site locations, you should enter NA (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 6) in the box for the off-site location's EPA Identification Number (defined in 40 CFR 260.10 and therefore commonly referred to as the RCRA ID Number).

If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code (range reporting in section 6.2 does not apply to PBT chemicals). The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

Note that if you enter a range code in column A, some TRI data tools used by the public will display the midpoint of the range (i.e., 5, 250, or 750 lb).

If you transfer the EPCRA Section 313 chemical in wastes to an off-site facility for distinct and multiple purposes, you must report those activities for each off-site location, along with the quantity of the reported EPCRA Section 313 chemical associated with each activity. For example, your facility transfers a total of 15,000 pounds of toluene to an off-site location that will use 5,000 pounds for the purposes of energy recovery, will enter 7,500 pounds into a recovery process, and will dispose of the remaining 2,500 pounds. These quantities and the associated activity codes must be reported separately in Section 6.2. (See Figure 6 for a hypothetical Section 6.2 completed for two off-site locations, one of which receives the transfer of 15,000 pounds of toluene as detailed.) If you have fewer than four total transfers in Section 6.2 Column A (see examples in Figure 6), an NA should be placed in Column A of the first unused row to indicate the termination of the sequence. If all four rows are used, there is no need to terminate the sequence. If there are more than four total transfers, re-enter the name of the off-site location, address, etc. in the next row (6.2.2) and then you should enter NA when the sequence has terminated if there are fewer than 8 (i.e. anytime there are fewer than 4 transfers listed in a Section 6.2 block, an NA should be used to terminate the sequence).

Do not double or multiple count amounts transferred off-site. For example, when a reported EPCRA Section 313 chemical is sent to an off-site facility for sequential activities, you should report the final disposition of the toxic chemical.

Summary of Residue Quantities From Pilot-Scale Experimental Study[a,b]
(weight percent of drum capacity)

Unloading Method	Vessel Type	Value	Material			
			Kerosene[c]	Water[d]	Motor Oil[e]	Surfactant Solution[f]
Pumping	Steel drum	Range Mean	1.93 - 3.08 2.48	1.84 - 2.61 2.29	1.97 - 2.23 2.06	3.06 3.06
Pumping	Plastic drum	Range Mean	1.69 - 4.08 2.61	2.54 - 4.67 3.28	1.70 - 3.48 2.30	Not Available
Pouring	Bung-top steel drum	Range Mean	0.244 - 0.472 0.404	0.266 - 0.458 0.403	0.677 - 0.787 0.737	0.485 0.485
Pouring	Open-top steel drum	Range Mean	0.032 - 0.080 0.054	0.026 - 0.039 0.034	0.328 - 0.368 0.350	0.089 0.089
Gravity Drain	Slope-bottom steel tank	Range Mean	0.020 - 0.039 0.033	0.016 - 0.024 0.019	0.100 - 0.121 0.111	0.048 0.048
Gravity Drain	Dish-bottom steel tank	Range Mean	0.031 - 0.042 0.038	0.033 - 0.034 0.034	0.133 - 0.191 0.161	0.058 0.058
Gravity Drain	Dish-bottom glass-lined tank	Range Mean	0.024 - 0.049 0.040	0.020 - 0.040 0.033	0.112 - 0.134 0.127	0.040 0.040

[a] From “Releases During Cleaning of Equipment.” Prepared by PEI Associates, Inc., for the U.S. Environmental Protection Agency, Office of Pesticides and Toxic Substances, Washington DC, Contract No. 68-02-4248. June 30, 1986.

[b] The values listed in this table should only be applied to similar vessel types, unloading methods, and bulk fluid materials. At viscosities greater than 200 centipoise, the residue quantities can rise dramatically and the information on this table is not applicable.

[c] For kerosene, viscosity = 5 centipoise, surface tension = 29.3 dynes/cm^2

[d] For water, viscosity = 4 centipoise, surface tension = 77.3 dynes/cm^2

[e] For motor oil, viscosity = 94 centipoise, surface tension = 34.5 dynes/cm^2

[f] For surfactant solution, viscosity = 3 centipoise, surface tension = 31.4 dynes/cm^2

Example 14: Container Residue

You have determined that a Form R for an EPCRA Section 313 chemical must be submitted. The facility purchases and uses one thousand 55-gallon steel drums that contain a 10 percent solution of the chemical. Further, it is assumed that the physical properties of the solution are similar to water. The solution is pumped from the drums directly into a mixing vessel and the "empty" drums are triple-rinsed with water. The rinse water is indirectly discharged to a POTW and the cleaned drums are sent to a drum reclaimer.

In this example, it can be assumed that all of the residual solution in the drums was transferred to the rinse water. Therefore, the quantity transferred to the drum reclaimer should be reported as "zero." The annual quantity of residual solution that is transferred to the rinse water can be estimated by multiplying the mean weight percent of residual solution remaining in water from pumping a steel drum (2.29 percent from the preceding table, "Summary of Residue Quantities From Pilot-Scale Experimental Study") by the total annual weight of solution in the drum (density of solution multiplied by drum volume). If the density is not known, it may be appropriate to use the density of water (8.34 pounds per gallon):

(2.29%) × (8.34 pounds/gallon) × (55 gallons/drum) × (1,000 drums) = 10,504 pounds solution

The concentration of the EPCRA Section 313 chemical in the solution is only 10%.

(10,504 pounds solution) × (10%) = 1,050 pounds

Therefore, 1,050 pounds of the chemical are transferred to the POTW.

6.2[ ] Column B: Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported EPCRA Section 313 chemical in waste transferred to each off-site location. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

M1 Estimate is based on continuous monitoring data or measurements for the EPCRA Section 313 chemical.

M2 Estimate is based on periodic or random monitoring data or measurements for the EPCRA Section 313 chemical.

C Estimate is based on mass balance calculations, such as calculation of the amount of the EPCRA Section 313 chemical in streams entering and leaving process equipment.

E1 Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

E2 Estimate is based on site specific emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

O Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

6.2[ ] Column C: Type of Waste Management: Disposal/ Treatment/Energy Recovery/Recycling

You should enter one of the following M codes to identify the type of disposal, treatment, energy recovery, or recycling methods used by the off-site location for the reported EPCRA Section 313 chemical. You must use separate transfers and codes for a single location when distinct quantities of the reported EPCRA Section 313 chemical are subject to different waste management activities, including disposal, treatment, energy recovery, or recycling. You must use the code that represents the ultimate disposition of the chemical.

If the EPCRA Section 313 chemical is sent off-site for further direct reuse (e.g., an EPCRA Section 313 chemical in used solvent that will be used as lubricant at another facility) and does not undergo a waste management activity (i.e., release (including disposal), treatment, energy recovery, or recycling (recovery)) prior to that reuse, it need not be reported in section 6.2 or section 8.

Incineration vs. Energy Recovery

You must distinguish between incineration which is waste treatment, and legitimate energy recovery. For you to claim that a reported EPCRA Section 313 chemical sent off-site is used for the purposes of energy recovery and not for treatment for destruction, the EPCRA Section 313 chemical must have a significant heating value and must be combusted in an energy recovery unit such as an industrial boiler, furnace, or kiln. In a situation where the reported EPCRA Section 313 chemical is in a waste that is combusted in an energy recovery unit, but the EPCRA Section 313 chemical does not have a significant heating value, e.g., CFCs, you should use code M54, Incineration/Insignificant Fuel Value, to indicate that the EPCRA Section 313 chemical was incinerated in an energy recovery unit but did not contribute to the heating value of the waste.

Metals and Metal Category Compounds

Metals and metal category compounds will be managed in waste either by being released (including disposed of) or by being recycled. Remember that the release and other waste management information that you report for metal category compounds will be the total amount of the parent metal released or recycled and NOT the whole metal category compound. The metal has no heat value and thus cannot be combusted for energy recovery and cannot be treated because it cannot be destroyed. Thus, transfers of metals and metal category compounds for further waste management should be reported as either a transfer for recycling or a transfer for disposal. The applicable waste management codes for transfers of metals and metal category compounds for recycling are M24, metals recovery, M93, waste broker - recycling, or M26, other reuse/recovery. Applicable codes for transfers for disposal include M10, M41, M62, M64, M65, M66, M67, M73, M79, M81, M82, M90, M94, and M99. These codes are for off-site transfers for further waste management in which the waste stream may be treated but the metal contained in the waste stream is not treated and is ultimately

released. For example, M41 should be used for a metal or metal category compound that is stabilized in preparation for disposal.

Applicable codes for Part II, Section 6.2, column C are:

Disposal

M10 Storage Only
M41 Solidification/Stabilization - Metals and Metal Category Compounds only
M62 Wastewater Treatment (Excluding POTW) - Metals and Metal Category Compounds only
M64 Other Landfills
M65 RCRA Subtitle C Landfills
M66 Subtitle C Surface Impoundment
M67 Other Surface Impoundments
M73 Land Treatment
M79 Other Land Disposal
M81 Underground Injection to Class I Wells
M82 Underground Injection to Class II-V Wells
M90 Other Off-Site Management
M94 Transfer to Waste Broker - Disposal
M99 Management Method Unknown

Treatment

M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M54 Incineration/Insignificant Fuel Value
M61 Wastewater Treatment (Excluding POTW)
M69 Other Waste Treatment
M95 Transfer to Waste Broker - Waste Treatment

Energy Recovery

M56 Energy Recovery
M92 Transfer to Waste Broker - Energy Recovery

Recycling

M20 Solvents/Organics Recovery
M24 Metals Recovery
M26 Other Reuse or Recovery
M28 Acid Regeneration
M93 Transfer to Waste Broker - Recycling

M codes that have previously been used for Section 6.2, column C, but which are no longer applicable include:

M63 Surface Impoundment
M71 Underground Injection
M72 Landfill/Disposal Surface Impoundment

Example 15: Reporting Metals and Metal Category Compounds that are sent Off-site

A facility manufactures a product containing elemental copper, exceeding the processing threshold for copper. Various metal fabrication operations for the process produce a wastewater stream that contains some residual copper and off-specification copper material. The wastewater is collected and sent directly to a POTW. Periodic monitoring data show that 500 pounds of copper were transferred to the POTW in the reporting year. The POTW eventually releases these chemicals to a stream. The off-specification products (containing copper) are collected and sent off-site to a RCRA Subtitle C landfill. Sampling analyses of the product combined with hazardous waste manifests were used to determine that 1,200 pounds of copper in the off-spec product were sent to the off-site landfill.

Therefore, the facility must report 500 pounds in Sections 6.1 and 8.1d, and 1200 pounds in Sections 6.2 (waste code M65 (RCRA Subtitle C Landfill) should be used) and 8.1d.

Note that for EPCRA Section 313 chemicals that are not metals or metal category compounds, the quantity sent for treatment at POTWs and to other off-site treatment locations must be reported in Section 8.7 - Quantity Treated Off-site. However, if you know that some or all of the chemical is not treated for destruction at the off-site location you must report that quantity in Section 8.1.

SECTION 6. TRANSFER(S) OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS									
6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)							NA ☐		
6.1.___	POTW Name								
POTW Address									
City		County		State		ZIP			
A. Quantity Transferred to this POTW (pounds/year*) (Enter range code**or estimate)			B. Basis of Estimate (Enter code)						
			O						
If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box ☐ and indicate the Part II, Section 6.1 page number in this box. ☐ (Example: 1, 2, 3, etc.)									
SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS							NA ☑		
6.2.___ Off-Site EPA Identification Number (RCRA ID No.)		COD56616246							
Off-Site Location Name:	Acme Waste Services								
Off-Site Address:	5 Market Street								
City	Anywhere	County	Hill	State	CO	ZIP	80461	Country (non-US)	
Is this location under control of reporting facility or parent company?				☐ Yes		☑ No			

This off-site location receives a transfer of 15,000 pounds of toluene and will combust 5,000 pounds for the purposes of energy recovery, will enter 7,500 pounds into a recovery process, and will dispose of the remaining 2,500 pounds.

SECTION 6.2. TRANSFERS TO OTHER OFF-SITE LOCATION (CONTINUED)		
A. Total Transfer (pounds/year*) (Enter a range code** or estimate)	**B. Basis of Estimate** (Enter code)	**C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery** (Enter code)
1. 5,000	1. O	1. M 56
2. 7,500	2. C	2. M 20
3. 2,500	3. O	3. M 60
4. NA	4.	4. M

6.2.___ Off-Site EPA Identification Number (RCRA ID No.)		COD16772543							
Off-Site Location Name:	Combustion, Inc.								
Off-Site Address:	25 Facility Road								
City	Dumfry	County	Burns	State	CO	ZIP	80500	Country (non-US)	
Is this location under control of reporting facility or parent company?				Yes ☐		No ☑			

A. Total Transfer (pounds/year*) (Enter a range code** or estimate)	**B. Basis of Estimate** (Enter code)	**C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery** (Enter code)
1. 12,500	1. O	1. M 54
2. NA	2.	2. M
3.	3.	3. M
4.	4.	4. M

This off-site location receives a transfer of 12,500 pounds of tetrachloroethylene (perchloroethylene) that is part of a waste that is combusted for the purposes of energy recovery in an industrial furnace. Note that the tetrachloroethylene should be reported using code M54 to indicate that it is combusted in an energy recovery unit but it does not contribute to the heating value of the waste.

Figure 6. Hypothetical Section 6.2 Completed for Two Off-Site Locations

Section 7. On-Site Waste Treatment, Energy Recovery, and Recycling Methods (Form R)

You must report in this section the methods of waste treatment, energy recovery, and recycling applied to the reported EPCRA Section 313 chemical in wastes on-site. There are three separate sections for reporting such activities. Section 7A column c and Section 7A column e were deleted from Form R in 2005. Section 7A column d remained on the form until 2010. In 2011, column d was renamed column c which is addressed below.

Section 7A: On-Site Waste Treatment Methods and Efficiency

Most of the chemical-specific information required by EPCRA Section 313 that is reported on Form R is specific to the EPCRA Section 313 chemical rather than the waste stream containing the EPCRA Section 313 chemical. However, EPCRA Section 313 does require that waste treatment methods applied on-site to waste streams that contain the EPCRA Section 313 chemical be reported. This information is reportable regardless of whether the facility actively applies treatment or the treatment of the waste stream occurs passively. This information is collected in Section 7A of Form R.

In Section 7A, you must provide the following information if you treat waste streams containing the reported EPCRA Section 313 chemical on-site:

(a) The general waste stream types containing the EPCRA Section 313 chemical being reported;
(b) The waste treatment method(s) or sequence used on all waste streams containing the EPCRA Section 313 chemical; and
(c) The efficiency of each waste treatment method or waste treatment sequence in destroying or removing the EPCRA Section 313 chemical.

When entering on-site treatment data in TRI-MEweb, use a separate waste treatment profile in Section 7A for each general waste stream type. Each profile contains the general waste stream type (7A Column a) and all waste treatment methods associated with that stream (7A Column b). In TRI-MEweb, each profile treatment stream is assigned a name. Each waste treatment profile generated for a facility is available to be used for other forms from the same facility for the same reporting year. Report only information about treatment of waste streams at your facility, not information about off-site waste treatment.

For each waste treatment profile, provide the appropriate waste treatment efficiency code (7A Column c) for that chemical.

TRI-MEweb may also simultaneously collect total quantities treated on-site for the current reporting year for this chemical (see Section 8.6).

If you do not perform on-site treatment of waste streams containing the reported EPCRA Section 313 chemical, check the "Not Applicable" box for Section 7A.

7A Column a: General Waste Stream

For each waste treatment method, indicate the type of waste stream containing the EPCRA Section 313 chemical that is treated. Select the letter code that corresponds to the general waste stream type:

A Gaseous (gases, vapors, airborne particulates)

W Wastewater (aqueous waste)

L Liquid waste streams (non-aqueous waste)

S Solid waste streams (including sludges and slurries)

If a waste is a combination of water and organic liquid and the organic content is less than 50 percent, report it as a wastewater (W). Slurries and sludges containing water should be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

7A Column b: Waste Treatment Method(s) Sequence

Enter the appropriate waste treatment code from the list below for each on-site waste treatment method used on a waste stream containing the EPCRA Section 313 chemical, regardless of whether the waste treatment method actually removes the specific EPCRA Section 313 chemical being reported. Waste treatment methods must be reported for each type of waste stream being treated (i.e., gaseous waste streams, aqueous waste streams, liquid non-aqueous waste streams, and solids). Except for the air emission treatment codes, the waste treatment codes are not restricted to any medium.

Waste streams containing the EPCRA Section 313 chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your

facility may be combined prior to waste treatment. Report waste treatment methods that apply to the aggregate waste stream, as well as waste treatment methods that apply to individual waste streams. If your facility treats various wastewater streams containing the EPCRA Section 313 chemical in different ways, the different waste treatment methods must be listed separately.

If your facility has several pieces of equipment performing a similar service in a waste treatment sequence, you may combine the reporting for such equipment. It is not necessary to enter four codes to cover four scrubber units, for example, if all four are treating waste streams of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differs from one unit to the next, each scrubber should be listed separately.

Example 16: Calculating Releases and Other Waste Management Quantities

Your facility disposes of 14,000 pounds of lead chromate (PbCrO4.PbO) in an on-site landfill and transfers 16,000 pounds of lead selenite (PbSeO4) to an off-site land disposal facility. You would therefore be submitting three separate reports on the following: lead compounds, selenium compounds, and chromium compounds. However, the quantities you would be reporting would be the pounds of "parent" metal being released on-site or transferred off-site for further waste management. All quantities are based on mass balance calculations (See Section 5, Column B for information on Basis of Estimate and Section 6.2, Column C for waste management codes and information on transfers of EPCRA Section 313 chemicals in wastes). You would calculate releases of lead, chromium, and selenium by first determining the percentage by weight of these metals in the materials you use as follows:

Lead Chromate ($PbCrO_4.PbO$) Molecular weight = 546.37
Lead (2 Pb atoms) Atomic weight = 207.2 × 2 = 414.4
Chromium (1 Cr atom) Atomic weight = 51.996

Lead chromate is therefore (percent by weight):
(414.4/546.37) = 75.85% lead and
(51.996/546.37) = 9.52% chromium.

Lead Selenite ($PbSeO_4$) Molecular weight = 350.17

Lead (1 Pb atom) Atomic weight = 207.2
Selenium (1 Se atom) Atomic weight = 78.96

Lead selenite is therefore (percent by weight):
(207.2/350.17) = 59.17% lead and
(78.96/350.17) = 22.55% selenium.

The total pounds of lead, chromium, and selenium disposed of on or off-site from your facility are as follows:

Lead
Disposal on-site: 0.7585 × 14,000 = 10,619 pounds from lead chromate
Transfer off-site for disposal: 0.5917 × 16,000 = 9,467 pounds from lead selenite

Chromium
Disposal on-site: 0.0952 × 14,000 = 1,333 pounds from lead chromate

Selenium
Transfer off-site for disposal: 0.2255 × 16,000 = 3,608 pounds from lead selenite

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY												
☐ Not Applicable (NA) - Check here if no on-site waste treatment method is applied to any waste stream containing the toxic chemical or chemical category.												
a. General Waste Stream (Enter code)	b. Waste Treatment Method(s) Sequence (Enter 3- or 4-character code(s))											c. Waste Treatment Efficiency (Enter 2 character code)
7A.1a	7A.1b			1	H123		2	H124				7A.1c
W		3	H101	4	H129		5	H083				
		6	H082	7	H081		8	H075				
7A.2a	7A.2b			1	H077		2	NA				7A.2c
		3		4			5					E4
		6		7			8					
7A.3a	7A.3b			1	A01		2	NA				7A.3c
A		3		4			5					E5
		6		7			8					

Figure 7. Hypothetical Section 7A

Waste Treatment Codes

A01 Flare
A02 Condenser
A03 Scrubber
A04 Absorber
A05 Electrostatic Precipitator
A06 Mechanical Separation
A07 Other Air Emission Treatment
H040 Incineration--thermal destruction other than use as a fuel
H071 Chemical reduction with or without precipitation
H073 Cyanide destruction with or without precipitation
H075 Chemical oxidation
H076 Wet air oxidation
H077 Other chemical precipitation with or without pre-treatment
H081 Biological treatment with or without precipitation
H082 Adsorption
H083 Air or steam stripping
H101 Sludge treatment and/or dewatering
H103 Absorption
H111 Stabilization or chemical fixation prior to disposal
H112 Macro-encapsulation prior to disposal
H121 Neutralization
H122 Evaporation
H123 Settling or clarification
H124 Phase separation
H129 Other treatment

7A Column c: Waste Treatment Efficiency Estimate

In the space provided, enter the range code, based upon the codes listed below, indicating the percentage of the EPCRA Section 313 chemical removed from the waste stream through destruction, biological degradation, chemical conversion, or physical removal. The waste treatment efficiency (expressed as a range of percent removal) represents the percentage of the EPCRA Section 313 chemical destroyed or removed (based on amount or mass), not merely changes in volume or concentration of the EPCRA Section 313 chemical in the waste stream. The efficiency, which can reflect the overall removal from sequential treatment methods applied to the general waste stream, refers only to the percent destruction, degradation, conversion, or removal of the EPCRA Section 313 chemical from the waste stream; it does not refer to the percent conversion or removal of other constituents in the waste stream. The efficiency also does not refer to the general efficiency of the treatment method for any waste stream. For some waste treatment methods, the percent removal will represent removal by several mechanisms, as in an aeration basin, where an EPCRA Section 313 chemical may evaporate, biodegrade, or be physically removed from the sludge.

Percent removal can be calculated as follows:

$$\frac{(I - E)}{I} \times 100\%$$

where:

I = amount of the EPCRA Section 313 chemical in the influent waste stream (entering the waste treatment step or sequence) and

E = amount of the EPCRA Section 313 chemical in the effluent waste stream (exiting the waste treatment step or sequence).

Calculate the amount of the EPCRA Section 313 chemical in the influent waste stream by multiplying the concentration (by weight) of the EPCRA Section 313 chemical in the waste stream by the total amount or weight of the waste stream. In most cases, the percent removal compares the treated effluent to the influent for the particular type of waste stream. For solidification of wastewater, the waste treatment efficiency can be reported as code E1 (greater than 99.9999 percent) if no volatile EPCRA Section 313 chemicals were removed with the water or evaporated into the air. Percent removal does not apply to incineration because the waste stream, such as wastewater or liquids, may not exist in a comparable form after waste treatment and the purpose of incineration as a waste treatment is to destroy the EPCRA Section 313 chemical by converting it to carbon dioxide and water or other byproducts. In cases where the EPCRA Section 313 chemical is incinerated, the percent efficiency must be based on the amount of the EPCRA Section 313 chemical destroyed or combusted, except for metals or metal category compounds. In the cases in which a metal or metal category compound is incinerated, the efficiency is reported as code E6 (equal to or greater than 0 percent, but less than or equal to 50 percent).

Similarly, an efficiency of zero must be reported for any waste treatment method(s) that does not destroy, chemically convert or physically remove the EPCRA Section 313 chemical from the waste stream.

For metal category compounds, the calculation of the reportable concentration and waste treatment efficiency must be based on the weight of the parent metal, not on the weight of the metal compound. Metals are not destroyed, only physically removed or chemically converted from one form into another. The waste treatment efficiency reported must represent only physical removal of the parent metal from the waste stream (except for incineration), not the percent chemical conversion of the metal compound. If a listed waste treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported with a waste treatment efficiency of code E6 (equal to or greater than 0 percent, but less than or equal to 50 percent.

EPCRA Section 313 chemicals that are strong mineral acids neutralized to a pH of 6 or above are considered treated at 100 percent efficiency.

When calculating waste treatment efficiency, EPCRA Section 313(g)(2) requires a facility to use readily available data (including monitoring data) collected pursuant to other provisions of law, or, where such data are not readily available, "reasonable estimates" of the amounts involved.

Waste Treatment Efficiency Range Codes:

E1 = greater than 99.9999%

E2 = greater than 99.99%, but less than or equal to 99.9999%

E3 = greater than 99%, but less than or equal to 99.99%

E4 = greater than 95%, but less than or equal to 99%

E5 = greater than 50%, but less than or equal to 95%

E6 = equal to or greater than 0%, but less than or equal to 50%

Section 7B: On-site Energy Recovery Processes

In Section 7B, you must indicate the on-site energy recovery methods used on the reported EPCRA Section 313 chemical.

EPA considers an EPCRA Section 313 chemical to be combusted for energy recovery if the toxic chemical has a significant heat value and is combusted in an energy recovery device. If a reported EPCRA Section 313 chemical is incinerated on-site but does not contribute energy to the process (e.g., chlorofluorocarbons), it must be considered waste treated on-site and reported in Section 7A. Metals and metal category compounds cannot be combusted for energy recovery and should NOT be reported in this section. Do not include the combustion of fuel oils, such as fuel oil #6, in this section. Energy recovery may take place only in an industrial kiln, furnace, or boiler.

NA vs. a Numerical Value (e.g., Zero). If you do not perform on-site energy recovery for a waste stream that contains or contained the EPCRA Section 313 chemical, check the NA box at the top of Section 7B and enter NA in Section 8.2. If you perform on-site energy recovery for the waste

stream that contains or contained the EPCRA Section 313 chemical, enter the appropriate code in Section 7B and enter the appropriate value in Section 8.2. If this quantity is less than or equal to 0.5 pound, round to zero (unless the chemical is a listed PBT chemical) and enter zero in 8.2. (Note: for metals and metal compounds, you should only report NA in Sections 7B and Section 8.2.)

Energy Recovery Codes

U01 Industrial Kiln
U02 Industrial Furnace
U03 Industrial Boiler

If your facility uses more than one on-site energy recovery method for the reported EPCRA Section 313 chemical, list the methods used in descending order (greatest to least) based on the amount of the EPCRA Section 313 chemical entering such methods.

TRI-MEweb will also simultaneously collect total quantity used for energy recovery on-site for the current reporting year for this chemical (see Section 8.2).

Section 7C: On-site Recycling Processes

In Section 7C, you must report the recycling methods used on the EPCRA Section 313 chemical.

In this section, use the codes below to report only the recycling methods in place at your facility that are applied to the EPCRA Section 313 chemical. Do not list any off-site recycling activities. (Information about off-site recycling must be reported in Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-site Locations.")

NA vs. a Numerical Value (e.g., Zero). If you do not perform on-site recycling for the reported EPCRA Section 313 chemical, check the NA box at the top of Section 7C and enter NA in Section 8.4. If you perform on-site recycling for the reported EPCRA Section 313 chemical, enter the appropriate code in Section 7C and enter the appropriate value in Section 8.4. If this quantity is less than or equal to 0.5 pound, round to zero (unless the chemical is a listed PBT chemical) and enter 0 in Section 8.4.

On-Site Recycling Codes

H10 Metal recovery (by retorting, smelting, or chemical or physical extraction

H20 Solvent recovery (including distillation, evaporation, fractionation or extraction)

H39 Other recovery or reclamation for reuse (including acid regeneration or other chemical reaction process)

If your facility uses more than one on-site recycling method for an EPCRA Section 313 chemical, enter the codes in the space provided in descending order (greatest to least) based on the volume of the reported EPCRA Section 313 chemical recovered by each process.

TRI-MEweb will also simultaneously collect total quantity recycled on-site for the current reporting year for this chemical (see Section 8.4).

Example 17: On-Site Waste Treatment

A process at the facility generates a wastewater stream containing an EPCRA Section 313 chemical (chemical A). A second process generates a wastewater stream containing two EPCRA Section 313 chemicals, a metal (chemical B) and a mineral acid (chemical C). Thresholds for all three chemicals have been exceeded and you are in the process of completing separate Form Rs for each chemical.

These two wastewater streams are combined and sent to an on-site wastewater treatment system before being discharged to a POTW. This system consists of an oil/water separator that removes 99 percent of chemical A; a neutralization tank in which the pH is adjusted to 7.5, thereby destroying 100 percent of the mineral acid (chemical C); and a settling tank where 95 percent of the metal (chemical B) is removed from the water (and eventually landfilled off-site).

Section 7A should be completed slightly differently when you file the Form R for each of the chemicals. The table accompanying this example shows how Section 7A should be completed for each chemical. First, on each Form R you should identify the type of waste stream in Section 7A.1a as wastewater (aqueous waste, code W). Next, on each Form R you should list the code for each of the treatment steps that is applied to the entire waste stream, regardless of whether the operation affects the chemical for which you are completing the Form R (for instance, the first four blocks of Section 7A.1b of all three Form Rs should show: H124 (phase separation), H121 (neutralization), H123 (settling or clarification), and N/A (to signify the end of the treatment system). Note that Section 7A.1b is not chemical specific. It applies to the entire waste stream being treated. Section 7A.1c applies to the efficiency of the entire system in destroying and/or removing the chemical for which you are preparing the Form R. You should enter E4 when filing for chemical A, E5 for chemical B, and E1 for chemical C.

Chemical A

7A.1a	7A.1b	1. H124	2. H121	7A.1c	
W	3. H123	4. N/A	5.	E4	
	6.	7.	8.		

Chemical B

7A.1a	7A.1b	1. H124	2. H121	7A.1c	
W	3. H123	4. N/A	5.	E5	
	6.	7.	8.		

Chemical C

7A.1a	7A.1b	1. H124	2. H121	7A.1c	
W	3. H123	4. N/A	5.	E1	
	6.	7.	8.		

Note that the *quantity* removed and/or destroyed is not reported in Section 7 and that the efficiency reported in Section 7A.1c refers to the amount of EPCRA Section 313 chemical destroyed *and/or removed* from the applicable waste stream. The amount actually destroyed should be reported in Section 8.6 (quantity treated on-site). For example, when completing the Form R for chemical B you should report "N/A" pounds in Section 8.6 because the metal has been removed from the wastewater stream, but not actually destroyed. The quantity of chemical B that is ultimately landfilled off-site should be reported in Sections 6.2 and 8.1c. However, when completing the Form R for chemical C, you should report the entire quantity in Section 8.6 because raising the pH to 7.5 will completely destroy the mineral acid.

Example 18: Reporting On-Site Energy Recovery

One waste stream generated by your facility contains, among other chemicals, toluene and Freon 113. Threshold quantities are exceeded for both of these EPCRA Section 313 chemicals, and you would, therefore, submit two separate Form R reports. This waste stream is sent to an on-site industrial furnace that uses the heat generated in a thermal hydrocarbon cracking process at your facility. Because toluene has a significant heat value (17,440 BTU/pound) and the energy is recovered in an industrial furnace, the code "U02-Industrial Furnace" would be selected for the energy recovery method in Section 7B for the Form R submitted for toluene.

However, as Freon 113 does not contribute any value for energy recovery purposes, the combustion of Freon 113 in the industrial furnace is considered waste treatment, not energy recovery. You would report Freon 113 as entering a waste treatment step (i.e., incineration), in Section 7A, column b. In Section 7B the facility should report zero.

Section 8. Source Reduction and Waste Management (Form R)

This section includes the data elements mandated by Section 6607 of the Pollution Prevention Act of 1990 (PPA).

In Section 8, you must provide information about source reduction activities and quantities of the EPCRA Section 313 chemicals managed as waste. For all appropriate questions, report only the quantity, in pounds, (or, for the dioxin and dioxin-like compounds category, grams) of the reported EPCRA Section 313 chemical itself. Do not include the weight of water, soil, or other waste constituents. When reporting on the metal category compounds, you should report only the amount of the metal portion of the compound as you do when estimating release amounts.

Sections 8.1 through 8.9 must be completed for each EPCRA Section 313 chemical. Section 8.10 must be completed only if a source reduction activity was newly implemented specifically (in whole or in part) for the reported EPCRA Section 313 chemical during the reporting year. Section 8.11 allows you to submit additional optional information on source reduction, recycling, or pollution control activities implemented for the reported EPCRA Section 313 chemical at any time at your facility. For example, you may provide additional information on new or on-going practices.

Sections 8.1 through 8.7 require reporting of production-related waste management quantities for the current reporting year, the prior year, and quantities anticipated in both the first year immediately following the reporting year and the second year following the reporting year (future estimates).

Do not enter the values in Section 8 in gallons, tons, liters, or any measure other than pounds (or, for the dioxin and dioxin-like compounds category, grams). For non-PBT chemicals, you must generally enter the values as whole numbers; numbers following a decimal point are not acceptable for non-PBT chemicals except as noted in the instructions for Sections 8.1c-d and 8.7. For PBT chemicals (except the dioxin and dioxin-like compounds category), facilities should report release and other waste management quantities greater than 0.1 pound provided the accuracy and the underlying data on which the estimate is based supports this level of precision.

For the dioxin and dioxin-like compounds category, facilities should report at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. However, the smallest quantity that need be reported on the Form R for the dioxin and dioxin-like compounds category is 0.0001 grams (see Example 12). Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision to seven digits to the right of the decimal.

NA vs. a Numeric Value (e.g., Zero). You should enter a numeric value in the relevant sections of Section 8 if your facility has released, treated, combusted for energy recovery or recycled any quantity of an EPCRA Section 313 chemical during the reporting year. If the aggregate quantity of that toxic chemical was equal to or less than 0.5 pound for a particular waste management method, you should enter the value zero (unless the chemical is a PBT chemical) in the relevant section. In the case of PBTs (excluding dioxin) if the aggregate quantity of the toxic chemical is equal to or less than 0.1 pound for a particular waste management method, you should enter the value zero in the relevant section. For dioxin, if the aggregate quantity is equal to or less than .0001 grams for a particular waste management method, you should enter the value zero in the relevant section. For both PBTs and dioxin, the accuracy of the underlying data on which the estimate is based must support the specified level of precision in order to round to zero.

However, if there has been no on-site or off-site treatment, combustion for energy recovery, or recycling of the waste stream containing the EPCRA Section 313 chemical, then you should enter NA in the relevant section. (Note: for metals and metal category compounds, you should enter NA in Sections 8.2, 8.3, 8.6 and 8.7, as treatment and combustion for energy recovery generally are not applicable waste management methods for metals and metal compounds). For Section 8.1b, NA generally is not applicable recognizing the potential for spills, leaks, or fugitive emissions of the EPCRA Section 313 chemical. You should enter NA in Section 8.8 if there were no remedial actions, catastrophic events such as earthquakes, fires, or floods or one-time events not associated with normal or routine production processes for that toxic chemical. If there was a catastrophic event at your

facility, but you were able to prevent any releases from occurring, then enter zero in Section 8.8.

Relationship to Other Laws

The reporting categories for quantities recycled, used for energy recovery, treated, and disposed of apply to completing Section 8 of Form R as well as to the rest of Form R. These categories are to be used only for TRI reporting. They are not intended for use in determining, under the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations, whether a secondary material is a waste when recycled. These categories also do not apply to the information that may be submitted in the Biennial Report required under RCRA. In addition, these categories do not imply any future redefinition of RCRA terms and do not affect EPA's RCRA authority or authority under any other statute administered by EPA.

Differences in terminology and reporting requirements for EPCRA Section 313 chemicals reported on Form R and for hazardous wastes regulated under RCRA occur because EPCRA and the PPA focus on specific chemicals, while the RCRA regulations and the Biennial Report focus on waste streams that may include more than one chemical. For example, assume that a RCRA hazardous waste containing an EPCRA Section 313 chemical is recycled to recover certain constituents of that waste, but not the toxic chemical reported under EPCRA Section 313. The EPCRA Section 313 chemical simply passes through the recycling process and remains in the residual from the recycling process, which is disposed of. While the waste may be considered recycled under RCRA, for TRI purposes, the EPCRA Section 313 chemical constituent would be considered to be disposed of (as part of the residual from the recycling process).

An EPCRA Section 313 chemical or an EPCRA Section 313 chemical in a mixture that is a waste under RCRA must be reported in Sections 8.1 through 8.8.

Sections 8.1 – 8.7: Production-Related Waste Managed

Column A: Prior Year. Quantities for Sections 8.1 through 8.7 must be reported for the year immediately preceding the reporting year in column A. For reports due July 1, 2018 (reporting year 2017), the prior year is 2016. Information available at the facility that may be used to estimate the prior year's quantities include the prior year's Form R submission, supporting documentation, and recycling, energy recovery, treatment, or disposal operating logs or invoices. When reporting prior year estimates, facilities are not required to use quantities reported on the previous year's form if better information is available. TRI-MEweb prepopulates this column on the TRI form if the facility reported the previous year.

Column B: Current Reporting Year. Quantities for Sections 8.1 through 8.7 must be reported for the current reporting year in column B.

Columns C and D: Following Year and Second Following Year. Quantities for Sections 8.1 through 8.7 must be estimated for the following two years. EPA expects reasonable future quantity estimates using a logical basis. Information available at the facility to estimate quantities of the chemical expected during these years include (but are not limited to) planned source reduction activities, market projections, expected contracts, anticipated new product lines, company growth projections, and production capacity figures.

Quantities Reportable in Sections 8.1 - 8.7

Section 8 of Form R uses data collected to complete Part II, Sections 5 through 7. For this reason, Section 8 should be completed last. The relationship between Sections 5, 6, and 8.8 to Sections 8.1, 8.3, 8.5, and 8.7 are summarized below in a table

Example 19: Reporting Future Estimates

A pharmaceutical manufacturing facility uses an EPCRA Section 313 chemical in the manufacture of a prescription drug. During the reporting year (2017), the company received approval from the Food and Drug Administration to begin marketing their product as an over-the-counter drug beginning in 2018. This approval is publicly known and does not constitute confidential business information. As a result of this expanded market, the company estimates that sales and subsequent production of this drug will increase their use of the reported EPCRA Section 313 chemical by 30 percent per year for the two years following the reporting year. The facility treats the EPCRA Section 313 chemical on-site and the quantity treated is directly proportional to production activity. The facility thus estimates the total quantity of the reported EPCRA Section 313 chemical treated for the following year (2018) by adding 30 percent to the amount in column B (the amount for the current reporting year). The second following year (2019) figure can be calculated by adding an additional 30 percent to the amount reported in column C (the amount for the following year (2018) projection).

(Relationship between Form R Sections 8.1-8.7 and Sections 5, 6 and 7) and explicitly described in equation form in the text. EPA recommends that you use these equations to complete Sections 8.1, 8.3, 8.5, and 8.7 for the current year and discourages rounding. For Column B (current year), TRI-MEweb will use these equations to complete these Sections automatically.

Note on Equations. Where an equation includes a value followed by a parenthetical, this means that the equation is referring only to the portion of that value described by the parenthetical. For example, "**Section 6.2 (recycling)**" refers to the portion of the value for Section 6.2 that is recycled, while "**Section 6.2 (treatment)**" refers to the portion of the value for Section 6.2 that is treated.

8.1 On- and Off-Site Disposal and Other Releases

In Section 8.1, facilities report disposal and other releases. This includes on-site disposal and other releases reported in Section 5 and off-site disposal and other releases reported in Section 6, but excludes quantities reported in Section 5 and 6 due to remedial actions, catastrophic events, or non-production related one-time events (see the discussion on Section 8.8). Note that EPCRA Section 329(8) defines release as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment of barrels, containers, and other closed receptacles)."

Metals and metal category compounds reported in 1) Section 6.2 as sent off-site for stabilization/solidification (M41) or wastewater treatment (excluding POTWs) (M62) and/or 2) Section 6.1 – discharges to POTWs, should be reported in Section 8.1. These quantities should NOT be reported in Section 8.7 because the metals are not ultimately destroyed.

Beginning in the 2003 reporting year, Section 8.1 was divided into four Subsections (8.1a, 8.1b, 8.1c and 8.1d). Please refer to the following equations that show the relationship between Sections 5, 6, 8.8, and 8.1a through 8.1d.

Sections 8.1a and 8.1b. Toxic chemicals disposed of or otherwise released on-site are reported in 8.1a or 8.1b as appropriate. Toxic chemicals sent off-site for disposal are reported in 8.1c or 8.1d.

Section 8.1a (Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills) = Section 5.4.1 + Section 5.5.1A + Section 5.5.1B – Section 8.8 (on-site disposal to landfills or UIC Class I Wells) [2]

Section 8.1b (Total other on-site disposal or other releases) = Section 5.1 + Section 5.2 + Section 5.3 + Section 5.4.2 + Section 5.5.2 + Section 5.5.3A + Section 5.5.3B + Section 5.5.4 – Section 8.8 (on-site disposal or other releases, other than disposal to landfills or UIC Class I Wells) [2]

[2] § 8.8 includes quantities of toxic chemicals disposed of or otherwise released on-site or managed as a waste off-site due to remedial actions, catastrophic events, or one-time events not associated with the production process. In each equation, the parenthetical following "Section 8.8" indicates which portion of § 8.8 is subtracted.

Relationship between Form R Sections 8.1-8.7 and Sections 5, 6 and 7

Category	Section 8 Subsection	Corresponding Section 5, 6 or 7 Subsection
Disposal and Other Releases	**Section 8.1a:** Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Production related on-site disposal to: • **Section 5.4.1** (on-site Class I wells) • **Section 5.5.1A** (on-site RCRA wells) • **Section 5.5.1B** (on-site other landfills)
	Section 8.1b: Total other on-site disposal or other releases	Production related on-site releases and disposal to: • **Section 5.1** (Fugitive emissions) • **Section 5.2** (Stack or point emissions) • **Section 5.3** (Discharges to water bodies) • **Section 5.4.2** (Class II-V wells**)** • **Section 5.5.2** (Land treatment) • **Section 5.5.3A** (Subtitle C surface impoundments) • **Section 5.5.3B** (Other surface impoundments) • **Section 5.5.4** (Other disposal)
	Section 8.1c: Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Production related off-site transfers to: • **Section 6.1** (portion of transfer that is *not* treated for destruction and is ultimately disposed of in landfills or UIC Class I Wells) • **Section 6.2** (quantities associated with M codes M64, M65 and M81)
	Section 8.1d: Total other off-site disposal or other releases	Production related transfers to: • **Section 6.1** (portion of transfer that is *not* treated for destruction and is ultimately disposed of or otherwise released, other than disposal to landfills or UIC Class I Wells) • **Section 6.2** (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, and M99)
Energy Recovery	**Section 8.2:** Quantity used for energy recovery on-site	All quantities used for on-site energy recovery associated with methods reported in **Section 7B (**on-site energy recovery processes)
	Section 8.3: Quantity used for energy recovery off-site	Production related off-site transfers to: • **Section 6.2** (off-site energy recovery)
Recycling	**Section 8.4:** Quantity recycled on-site	All quantities recycled on-site associated with methods reported in **Section 7C (**on-site recycling processes)
	Section 8.5: Quantity recycled off-site	Production related off-site transfers to: • **Section 6.2** (recycling)
Treatment	**Section 8.6:** Quantity treated on-site	All quantities treated on-site associated with methods reported in **Section 7A (**on-site waste treatment methods and efficiency)
	Section 8.7: Quantity treated off-site	Production related off-site transfers to: • **Section 6.1** (portion of transfer that is ultimately treated) • **Section 6.2** (off-site treatment)

Sections 8.1c and 8.1d. Toxic chemicals transferred off-site to POTWs or other off-site locations and then disposed of or otherwise released should be reported in 8.1c or 8.1d as appropriate. For example, quantities of a toxic chemical sent to a landfill, or sent to a POTW and subsequently sent to a landfill are reported in Section 8.1c, while quantities of a toxic chemical sent to a surface impoundment, or sent to a POTW and subsequently released to a stream, are reported in Section 8.1d. Metals and metal category compounds sent to POTWs should be reported in one of these two sections and should not be reported as treated for destruction in Section 8.7.

Section 8.1c (Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills) = Section 6.1 (portion of transfer that is not treated for destruction and is ultimately disposed of in landfills or UIC Class I Wells) + Section 6.2 (quantities associated with M codes M64, M65 and M81) – Section 8.8 (off-site disposal to landfills or UIC Class I Wells)[3]

Section 8.1d (Total other off-site disposal or other releases) = Section 6.1 (portion of transfer that is not treated for destruction and is ultimately disposed of or otherwise released, other than disposal to landfills or UIC Class I Wells) + Section 6.2 (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, and M99) – Section 8.8 (off-site disposal or other releases, other than disposal to landfills or UIC Class I Wells) [3]

Some chemicals in addition to metals and metal category compounds might not be treated for destruction at a POTW. If you know that some or all of a chemical is not treated for destruction at the POTW, you should report that quantity in Section 8.1 (as indicated in the equations above) instead of Section 8.7 (which is the quantity treated off-site). In such cases, you may report using up to two decimal places.

Removal and destruction rates for toxic chemicals sent to POTWs, based on experimental and estimated data, can be found in Table IV.

Sections 8.2 and 8.3: Energy Recovery

These relate to an EPCRA Section 313 chemical or a mixture containing an EPCRA Section 313 chemical that is used for energy recovery on-site or is sent off-site for energy recovery, unless it is a commercially available fuel (e.g., fuel oil no. 6). For the purposes of reporting on Form R, reportable on-site and off-site energy recovery is the combustion of a waste stream containing an EPCRA Section 313 chemical when:

(a) The combustion unit is integrated into an energy recovery system (i.e., industrial furnaces, industrial kilns, and boilers); and

(b) The EPCRA Section 313 chemical is combustible and has a significant heating value (e.g., 5000 BTU)

Note: Metals and metal category compounds cannot be combusted for energy recovery. For metals and metal category compounds, you should enter NA in Sections 8.2 and 8.3.

Quantities used for energy recovery off-site that are reported in Section 8.8 are excluded from Section 8.3.

Section 8.2 (Energy recovery on-site) = All quantities used for on-site energy recovery associated with methods reported in Section 7B (on-site energy recovery processes)
Section 8.2 is not related to Sections 5 or 6.

Section 8.3 (Energy recovery off-site) = Section 6.2 (energy recovery) – Section 8.8 (off-site energy recovery, not related to production) [3]

Sections 8.4 and 8.5: Recycling

These relate to an EPCRA Section 313 chemical in a waste that is recycled on-site or is sent off-site for recycling. Quantities recycled off-site that are reported in Section 8.8 are excluded from Section 8.5.

Section 8.4 (Recycling on-site) = All quantities used for on-site recycling associated with methods reported in Section 7C (on-site recycling processes)
Section 8.4 is not related to Sections 5 or 6.

Section 8.5 (Recycling off-site) = Section 6.2 (recycling) - Section 8.8 (off-site recycling) [4]

[3] § 8.8 includes quantities of toxic chemicals disposed of or otherwise released on-site or managed as a waste off-site due to remedial actions, catastrophic events, or one-time events not associated with the production process. In each equation, the parenthetical following "Section 8.8" indicates which portion of § 8.8 is subtracted.

Sections 8.6 and 8.7: Treatment

These relate to an EPCRA Section 313 chemical (except for most metals and metal category compounds) or a waste containing an EPCRA Section 313 chemical that is treated for destruction on-site or is sent to a POTW or other off-site location for treatment for destruction. Most metal and category compounds are not reported in this section because they cannot be destroyed (see Appendix B). Quantities treated off-site that are reported in Section 8.8 are excluded from Section 8.7.

Section 8.6 (Treatment on-site) = All quantities used for on-site treatment associated with methods reported in Section 7A (on-site waste treatment methods and efficiency)
Section 8.6 is not related to Sections 5 or 6.

Section 8.7 (Treatment off-site) = Section 6.1 (portion of transfer that is ultimately treated) + Section 6.2 (treatment) – Section 8.8 (off-site treatment) [4]

Some chemicals in addition to metals and metal category compounds might not be treated for destruction at a POTW. If you know that some or all of a chemical is not treated for destruction at the POTW, you should report that quantity in Section 8.1 instead of Section 8.7. Facilities should use their best readily available information to determine the final disposition of the toxic chemical sent to the POTW, and then distribute the amount reported in Section 6.1 among Sections 8.1c, 8.1d, and 8.7, as appropriate. Removal and destruction rates for toxic chemicals sent to POTWs, based on experimental and estimated data, can be found in Table IV.

Example 20: Avoiding Double-Counting Quantities in Sections 8.1 through 8.7

5,000 pounds of an EPCRA Section 313 chemical enters a treatment operation. Three thousand pounds of the EPCRA Section 313 chemical exits the treatment operation and then enters a recycling operation. Five hundred pounds of the EPCRA Section 313 chemical are in residues from the recycling operation that is subsequently sent off-site to a landfill for disposal. These quantities would be reported as follows in Section 8:

Section 8.1c: 500 pounds disposed of

Section 8.4: 2,500 pounds recycled

Section 8.6: 2,000 pounds treated (5,000 that initially entered - 3,000 that subsequently entered recycling)

To report that 5,000 pounds were treated, 3,000 pounds were recycled, and that 500 pounds were sent off-site for disposal would result in over-counting the quantities of EPCRA Section 313 chemical recycled, treated, and disposed of by 3,500 pounds.

8.8 Non-Production-Related Waste

In Section 8.8, enter the total quantity of the EPCRA Section 313 chemical disposed of or released directly into the environment or sent off-site for recycling, energy recovery, treatment, or disposal during the reporting year due to any of the following events:

(1) remedial actions;
(2) catastrophic events such as earthquakes, fires, or floods; or
(3) other one-time events not associated with normal or routine production processes.

These quantities should not be included in Sections 8.1, 8.3, 8.5, or 8.7.

The purpose of this section is to separate quantities recycled, used for energy recovery, treated, or released (including disposals) that are associated with normal or routine production operations from those that are not. While all quantities released, recycled, combusted for energy recovery, or treated may ultimately be preventable, this section separates the quantities that are more likely to be reduced or eliminated by process oriented source reduction

[4] § 8.8 includes quantities of toxic chemicals disposed of or otherwise released on-site or managed as a waste off-site due to remedial actions, catastrophic events, or one-time events not associated with the production process. In each equation, the parenthetical following "Section 8.8" indicates which portion of § 8.8 is subtracted.

activities from those releases that are largely unpredictable and are less amenable to such source reduction activities. For example, spills that occur as a routine part of production operations and could be reduced or eliminated by improved handling, loading, or unloading procedures are included in the quantities reported in Section 8.1 through 8.7 as appropriate. A total loss of containment resulting from a tank rupture caused by a tornado would be included in the quantity reported in Section 8.8.

Similarly, the amount of an EPCRA Section 313 chemical cleaned up from spills resulting from normal operations during the reporting year would not be included in Section 8.8. However, the quantity of the reported EPCRA Section 313 chemical disposed of from a remedial action (e.g., RCRA corrective action) to clean up the environmental contamination resulting from past practices should be reported in Section 8.8 because they cannot currently be addressed by source reduction methods. A remedial action for purposes of Section 8.8 is a waste cleanup (including RCRA and CERCLA operations) within the facility boundary. Most remedial activities involve collecting and treating contaminated material.

Also, releases caused by catastrophic events are to be incorporated into the quantity reported in Section 8.8. Such releases may be caused by natural disasters (e.g., hurricanes and earthquakes) or by large scale accidents (e.g., fires and explosions). In addition, releases due to other one-time events not associated with production (e.g., terrorist bombing) are to be included in Section 8.8. These amounts are generally unanticipated and cannot be addressed by routine process oriented accident prevention techniques. By checking your documentation for calculating estimates made for Part II, Section 5, "Quantity of the Toxic Chemical Entering Each Environmental Medium On-site," you may be able to identify disposal and release amounts from the above sources. Emergency notifications under CERCLA and EPCRA as well as accident histories required under the Clean Air Act may provide useful information. You should also check facility incident reports and maintenance records to identify one time or catastrophic events.

Note: While the information reported in Section 8.8 represents only remedial, catastrophic, or other one-time events not associated with production processes, Section 5 of Form R (on-site disposal and other releases to the environment) and Section 6 (off-site transfers for further waste management) must include all on-site disposal and other releases and transfers for disposal as appropriate, regardless of whether they arise from catastrophic, remedial, or routine process operations.

Avoid Double Counting in Sections 8.1 Through 8.8

Do not double or multiple count quantities in Sections 8.1 through 8.8. The quantities reported in each of those sections should be mutually exclusive. In TRI-MEweb, any amounts that you designate as non-production-related-waste (Section 8.8) will be automatically excluded from production-related-waste (Sections 8.1-8.7).

Example 21: Non-Production-Related Waste Managed (Quantity Released to the Environment or Transferred Off-Site as a Result of Remedial Actions, Catastrophic Events, or Other One-Time Events Not Associated with Production Processes).

A chemical manufacturer produces an EPCRA Section 313 chemical in a reactor that operates at low pressure. The reactants and the EPCRA Section 313 chemical product are piped in and out of the reactor at monitored and controlled temperatures. During normal operations, small amounts of fugitive emissions occur from the valves and flanges in the pipelines.

Due to a malfunction in the control panel (which is state-of-the-art and undergoes routine inspection and maintenance), the temperature and pressure in the reactor increase, the reactor ruptures, and the EPCRA Section 313 chemical is released. Because the malfunction could not be anticipated and, therefore, could not be reasonably addressed by specific source reduction activities, the amount released is included in Section 8.8. In this case, much of the EPCRA Section 313 chemical is released as a liquid and pools on the ground. It is estimated that 1,000 pounds of the EPCRA Section 313 chemical pooled on the ground and was subsequently collected and sent off-site for treatment. In addition, it is estimated that another 200 pounds of the EPCRA Section 313 chemical vaporized directly to the air from the rupture. The total amount reported in Section 8.8 is the 1,000 pounds that pooled on the ground (and subsequently sent off-site), plus the 200 pounds that vaporized into the air, a total of 1,200 pounds. The quantity sent off-site must also be reported in Section 6 (but not in Section 8.7) and the quantity that vaporized must be reported as a fugitive emission in Section 5 (but not in Section 8.1b).

8.9 Production Ratio or Activity Ratio

For Section 8.9, you must provide either a production or activity ratio and indicate which type of ratio you reported using the checkboxes provided. The production or activity ratio allows year-to-year changes in release and other waste management quantities to be viewed within the context of production. For example, your production ratio lets data users know whether your releases per unit of output have gone up or down.

What Variable is Used to Calculate the Production or Activity Ratio?

To calculate a production or activity ratio, you must first select the variable(s) on which the ratio will be based. In all cases, the production or activity_ratio must be based on the variable(s) that best reflect the output or outcome of the process(es) in which the EPCRA Section 313 chemical is involved. Examples of production or activity variables selected by various industries can be found in Example 25. Instructions for calculating a production or activity ratio based on either a single variable or multiple variables can be found below.

Production Ratio

A production ratio is a ratio of reporting year production to prior year production. Calculate a production ratio when the chemical is involved in production processes. The equation for production ratio is as follows:

$$\textit{Production Ratio} = \frac{[\text{Production Variable}]_{\text{Current Year}}}{[\text{Production Variable}]_{\text{Prior Year}}}$$

A production ratio may be based on production levels for either the facility's end product or on the intermediate product of the process in which the chemical is manufactured, processed, or otherwise used. If an EPCRA Section 313 chemical is used in the production of refrigerators, for example, the production ratio would be based on the number of refrigerators produced. This is shown in Example 22 and in the sample equation below:

$$\textit{Example P.R.} = \frac{\#\text{ of refrigerators produced}_{\text{Current Year}}}{\#\text{ of refrigerators produced}_{\text{Prior Year}}}$$

If the EPCRA Section 313 chemical is itself the final product, the production ratio would be based on the amount of the chemical manufactured. Generally, however, the production ratio would be based on a variable other than the quantity of the EPCRA Section 313 chemical manufactured, processed, or otherwise used.

Activity Ratio

An activity ratio is also a ratio of current year to prior year values, but is reported when a chemical is involved in an activity not directly related to production or production levels. An activity ratio is appropriate if a chemical is used in an auxiliary activity such as cleaning or pollution control, for example, and is calculated as follows:

$$\textit{Activity Ratio} = \frac{[\text{Activity Variable}]_{\text{Current Year}}}{[\text{Activity Variable}]_{\text{Prior Year}}}$$

In all cases, the variable used to calculate an activity ratio should represent the intended outcome of the activity in which the chemical is used or produced, not the inputs of throughputs for the activity. If the EPCRA Section 313 chemical is used to clean molds, for example, the activity ratio could be based on the number of cleanings or the number of molds cleaned. It would not be based on the usage of the EPCRA Section 313 chemical or the total volume of cleaning solution used. This is shown in Example 23 and in the sample equation below:

$$\textit{Example A.R.} = \frac{\#\text{ of Molds Cleaned}_{\text{Current Year}}}{\#\text{ of Molds Cleaned}_{\text{Prior Year}}}$$

Production or Activity Ratios Based on Multiple Variables

In some cases, your facility may use the same EPCRA Section 313 chemical in more than one process. If there is no single variable that adequately reflects the output or outcome of the process(es) in which the reported EPCRA Section 313 chemical is involved, a production or activity ratio can be calculated by weighting the different production or activity variables for the different processes in which the chemical is involved. The procedure for this calculation is described in Example 26.

If the reported value is based on both production and activity variables, you would report the final value as a "production ratio" if the production ratio(s) were weighted more heavily than the activity ratio(s) in the calculations (and as an "activity ratio" if the opposite were true).

Reporting Tips:

- TRI-MEweb includes a production or activity ratio wizard to help you calculate your ratio automatically.
- The ratio must be reported to the nearest tenths or hundredths place (i.e., one or two digits to the right of the decimal point) for all EPCRA 313 chemicals, including PBT chemicals. A zero is not an acceptable response unless the calculated value is less than 0.005, which can be rounded to zero.
- If the manufacture, processing, or other use of the reported EPCRA Section 313 chemical began during the current reporting year, select NA as the production or activity ratio. Otherwise, you must enter a value even if your facility did not exceed a reporting threshold for the chemical in the previous reporting year.
- The ratio is not to be reported as a percent change between years (i.e., for a 10 percent increase, you would report the ratio 1.10, not 10% or 10). A production ratio of 1 indicates no change in production from the prior year.
- It is important to realize that if your facility reports more than one reported EPCRA Section 313 chemical, the production or activity ratio may vary for different chemicals if the chemicals are used in different processes with different outputs.
- Details regarding the method used to calculate the Production or Activity Ratio can be included in Section 9.1, "Additional Information." This information will provide context for the production or activity ratio and may help TRI data users better understand changes in releases or other waste management quantities. In Example 22, the facility could report, "Used the number of refrigerators painted as the production variable, because our facility uses toluene to paint refrigerators" in order to provide more information in Section 9.1.

Example 22: Determining a Production Ratio

Your facility's only use of toluene is as a paint carrier for a painting operation. You painted 12,000 refrigerators in the current reporting year and 10,000 refrigerators during the preceding year. The production ratio for toluene in this case is 1.2 (12,000/10,000) because refrigerator production levels best reflect the output of the processes in which toluene is used.

A facility manufactures inorganic pigments, including titanium dioxide. Hydrochloric acid (acid aerosols) is produced as a waste byproduct during the production process. An appropriate production ratio for hydrochloric acid (acid aerosols) is the annual titanium dioxide production, not the amount of byproduct generated. If the facility produced 20,000 pounds of titanium dioxide during the reporting year and 26,000 pounds in the preceding year, the production ratio would be 0.77 (20,000/26,000).

Example 23: Determining an Activity Ratio

Your facility manufactures organic dyes in a batch process. Different colors of dyes are manufactured, and between color changes, all equipment must be thoroughly cleaned with solvent containing glycol ethers to reduce color carryover. During the preceding year, the facility produced 2,000 pounds of yellow dye in January, 9,000 pounds of green dye for February through September, 2,000 pounds of red dye in November, and another 2,000 pounds of yellow dye in December. This adds up to a total of 15,000 pounds and four color changeovers. During the reporting year, the facility produced 10,000 pounds of green dye during the first half of the year and 10,000 pounds of red dye in the second half. If your facility uses glycol ethers in this cleaning process only, an activity ratio of 0.5 (based on two color changeovers for the reporting year divided by four changeovers for the preceding year) is more appropriate than a production ratio of 1.33 (based on 20,000 pounds of dye produced in the current year divided by 15,000 pounds in the preceding year). In this case, an activity ratio is more appropriate than a production ratio because the process in which the glycol ethers are used is not directly related to production or to production levels.

A facility that manufactures thermoplastic composite parts for aircraft uses toluene as a wipe solvent to clean molds. The solvent is stored in 55-gallon drums and is transferred to 1-gallon dispensers. The molds are cleaned on an as-needed basis that is not necessarily a function of the parts production rate. Operators cleaned 5,200 molds during the reporting year, but only cleaned 2,000 molds in the previous year. An activity ratio of 2.6 (5,200/2,000) represents the outcome of the activities involving toluene usage in the facility.

A facility manufactures surgical instruments and cleans the metal parts with 1,1,1-trichloromethane in a vapor degreaser. The degreasing unit is operated in a batch mode and the metal parts are cleaned according to an irregular schedule. The activity ratio can be based upon the total time the metal parts are in the degreasing operation. If the degreasing unit operated 3,900 hours during the reporting year and 3,000 hours the prior year, the activity ratio is 1.3 (3,900/3,000).

Example 24: "NA" is Entered Instead of a Production Ratio or Activity Ratio

Your facility began production of semiconductor chips during this reporting year. Perchloroethylene is used as a cleaning solvent for this operation and this is the only use of the EPCRA Section 313 chemical in your facility. You would enter NA in Section 8.9 because you have no basis of comparison in the prior year for the purposes of developing the activity ratio.

Example 25: Selecting a Production or Activity Variable

The table below provides examples of production or activity variables used by facilities in various industries to calculate a production ratio or activity ratio.

Industry	Sample Production / Activity Variable
Agriculture, Construction, and Mining Machinery Manufacturing	Drill rigs produced
Cement and Concrete Product Manufacturing	Tons of clinker produced
Clay Product and Refractory Manufacturing	Tons of brick manufactured
Chemical and Allied Products Merchant Wholesalers	Total gallons of glycol ethers packaged
Coal Mining	Mine production in tons of coal
Fossil Fuel Electric Power Generation	Number of megawatt-hours of electricity produced
National Security and International Affairs	Man-days of training per year
Nitrogenous Fertilizer Manufacturing	Ammonium thiosulfate product produced (in tons)
Plastics Product Manufacturing	Pounds extruded
Synthetic Dye and Pigment Manufacturing	Number of color changeovers
Waste Treatment and Disposal	Tons of waste landfilled on-site
Petroleum Refineries	Gallons of gasoline repackaged

Example 26: Determining the Production Ratio Based on a Weighted Average

At many facilities, a reported EPCRA Section 313 chemical is used in more than one production process. In these cases, a production ratio or activity ratio can be estimated by weighting the production ratio for each process based on the respective contribution of each process to the quantity of the reported EPCRA Section 313 chemical managed as waste (recycled, used for energy recovery, treated, or disposed of).

Your facility paints bicycles with paint containing toluene. Sixteen thousand bicycles were produced in the reporting year and 14,500 were produced in the prior year. There were no significant design modifications that changed the total surface area to be painted for each bike. The production ratio for bicycles is 1.1 (16,000/14,500). You estimate 12,500 pounds of toluene was managed as waste (recycled, used for energy recovery, treated, disposed of or released) as a result of bicycle production processes.

Your facility also uses toluene as a solvent in a glue that is used to make components and add-on equipment for the bicycles. Thirteen thousand components were manufactured in the reporting year as compared to 15,000 during the prior year. The production ratio for the components using toluene is 0.87 (13,000/15,000). You estimate 1,000 pounds of toluene was managed as wasted as a result of components production processes. The reported production ratio can be calculated by weighting the ratios for the different variables based on the relative contribution each has to the total quantity of toluene managed as waste during the reporting year (13,500 pounds). The production ratio is calculated as follows:

Production ratio = 1.1 × (12,500/13,500) + 0.87 × (1,000/13,500) = 1.08

8.10 Did Your Facility Engage in Any Newly Implemented Source Reduction Activities for This Chemical During the Reporting Year?

Section 8.10 must be completed if a source reduction activity involving the reported EPCRA Section 313 chemical was newly implemented at your facility. An activity is considered newly implemented if it went into effect, in whole or in part, during this reporting year. Some activities may be multi-faceted or multi-phased and impact different facility processes or span across multiple years. For those activities, report on the discrete projects that went into effect entirely or in part during the reporting year. Accordingly, in successive reporting years, you may report on later facets or phases of the activity.

What Is Source Reduction?

Source reduction, as defined by the Pollution Prevention Act, means any practice that:

- Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, energy recovery, treatment, or disposal; and
- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term "source reduction" does not include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity that itself is not integral to and necessary for the production of a product or the providing of a service.

Source reduction activities include equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. Newly implemented source reduction activities include activities that were implemented, in whole or in part, during the reporting (e.g., improved loading procedures).

How Does Source Reduction Relate to the Quantities Reported in Sections 8.1-8.8?

Source reduction activities reduce the amount of the reported EPCRA Section 313 chemical disposed of or otherwise released (as reported in Section 8.1), used for energy recovery (as reported in Sections 8.2–8.3), recycled (as reported in Sections 8.4–8.5), or treated (as reported in Sections 8.6–8.7). Recycling, energy recovery, and treatment are not themselves considered source reduction activities because these practices occur *after* the chemical has entered a waste stream.

The focus of the section includes only those activities that are applied to reduce routine or reasonably anticipated releases or other quantities of the reported EPCRA Section 313 chemical managed as waste). Thus, you do not report in this section any activities taken to reduce or eliminate the quantities reported in Section 8.8.

Why Is Reporting on Source Reduction Activities Important?

The Pollution Prevention Act established the national policy "that pollution should be prevented or reduced at the source whenever feasible..." Reporting on source reduction activities provides important information for assessing progress towards this goal.

To promote pollution prevention, EPA has increased the prominence and accessibility of the pollution prevention information reported in Sections 8.10 and 8.11 of the Form R. For example, companies reporting source reduction are featured in the annual TRI National Analysis report and the popular TRI Pollution Prevention (P2) Search Tool. To learn more, visit: https://www.epa.gov/tri/p2.

How Do I Report Source Reduction Activities and Methods?

Instructions on how to report source reduction activities (as defined above) and the methods used to identify such activities are provided below.

- **If Your Facility Implemented Source Reduction Activities.** If your facility implemented a new source reduction activity for the reported EPCRA Section 313 chemical during the reporting year, report the activity or activities that were implemented by selecting the most relevant activity code(s) from the drop down list in TRI-MEweb (see W-codes listed below).

  For each source reduction code you enter in TRI-MEweb, a text box allows you to provide additional details on that source reduction practice. Similarly, to describe how each source reduction practice was identified, a text box allows you to enter additional information on the identification method(s) you selected.

Optional additional information about source reduction provided via these text boxes is then added to the next section of the Form R (Section 8.11, Optional Pollution Prevention Information) preceded by the W- or T-code to which it relates.

For each source reduction code you enter in TRI-MEweb, a button to the right of the entry opens a text box that allows you to provide additional details on that source reduction practice. Similarly, to describe how each source reduction practice was identified, a button to the right of the entry opens a text box that allows you to enter additional information on the identification method(s) you selected. Optional additional information about source reduction provided via these text boxes is then added to the next section of the Form R (Section 8.11, Optional Pollution Prevention Information) preceded by the W- or T-code to which it relates.

- **If Your Facility Did Not Implement Source Reduction Activities.** If your facility did not implement any new source reduction activity for the reported EPCRA Section 313 chemical, check the "NA" box in Section 8.10. TRI-MEweb then provides you with the option of selecting from one or more possible barriers that your facility might be facing with regard to the implementation of source reduction activities. A list of barrier codes is provided below. For each code, you also have the option to provide additional information in a text box. (This information is then added to your entry in Section 8.11; see Section 8.11 instructions for additional information on barriers to P2.)

How Do I Report Estimated Annual Reduction?

For each "Source Reduction Activity" reported, you have the option to provide an estimate of the resulting reduction in the annual amount of the chemical managed as waste (i.e., released, recycled, treated, or used for energy recovery). The estimated annual reduction can be calculated as follows:

$$\frac{(B - A)}{B} \times 100\%$$

where:

A = estimated amount of the EPCRA Section 313 chemical to be managed as waste in the year after the source reduction activity has been implemented and

B = estimated amount of the EPCRA Section 313 chemical that would have been managed as waste had the source reduction activity not been implemented.

If you choose to complete this field, the reductions associated with your pollution prevention efforts will be featured on EPA's website through the TRI Pollution Prevention Search Tool at https://www.epa.gov/tri/p2. The estimated annual reduction should be reported using the range codes listed beneath the source reduction method codes.

Reporting Tips:

- This estimate is based on the facility's best readily available information at the time the activity is reported and will not necessarily reflect the actual reduction once implementation of the activity is completed.
- The estimated annual reduction only accounts for the impact of the particular source reduction activity. For example, if production is expected to double, but chemical quantities are expected to remain constant (when they also would have doubled if not for the source reduction activity), then the estimated annual reduction for the activity is 50%.

Source Reduction Activity Codes

Source reduction activity codes are listed below. In recent years many facilities have implemented green chemistry and green engineering practices to prevent pollution. In order to more closely represent these practices, EPA has developed six new source reduction codes. These codes are represented as: W15; W43; W50; W56; W57; and W84 and are provided in the list of source reductions below. Scenarios as to when these codes should be used are provided in Example 28.

Good Operating Practices

W13	Improved maintenance scheduling, record keeping, or procedures
W14	Changed production schedule to minimize equipment and feedstock changeovers
W15	Introduced in-line product quality monitoring or other process analysis system
W19	Other changes made in operating practices

Inventory Control

W21 Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life
W22 Began to test outdated material — continue to use if still effective
W23 Eliminated shelf-life requirements for stable materials
W24 Instituted better labeling procedures
W25 Instituted clearinghouse to exchange materials that would otherwise be discarded
W29 Other changes made in inventory control

Spill and Leak Prevention

W31 Improved storage or stacking procedures
W32 Improved procedures for loading, unloading, and transfer operations
W33 Installed overflow alarms or automatic shut-off valves
W35 Installed vapor recovery systems
W36 Implemented inspection or monitoring program of potential spill or leak sources
W39 Other changes made in spill and leak prevention

Raw Material Modifications

W41 Increased purity of raw materials
W42 Substituted raw materials
W43 Substituted a feedstock or reagent chemical with a different chemical
W49 Other raw material modifications made

Process Modifications

W50 Optimized reaction conditions or otherwise increased efficiency of synthesis
W51 Instituted re-circulation within a process
W52 Modified equipment, layout, or piping
W53 Used a different process catalyst
W54 Instituted better controls on operating bulk containers to minimize discarding of empty containers
W55 Changed from small volume containers to bulk containers to minimize discarding of empty containers
W56 Reduced or eliminated use of an organic solvent
W57 Used biotechnology in manufacturing process
W58 Other process modifications made

Cleaning and Degreasing

W59 Modified stripping/cleaning equipment
W60 Changed to mechanical stripping/cleaning devices (from solvents or other materials)
W61 Changed to aqueous cleaners (from solvents or other materials)
W63 Modified containment procedures for cleaning units
W64 Improved draining procedures
W65 Redesigned parts racks to reduce drag out
W66 Modified or installed rinse systems
W67 Improved rinse equipment design
W68 Improved rinse equipment operation
W71 Other cleaning and degreasing modifications made

Surface Preparation and Finishing

W72 Modified spray systems or equipment
W73 Substituted coating materials used
W74 Improved application techniques
W75 Changed from spray to other system
W78 Other surface preparation and finishing modifications made

Product Modifications

W81 Changed product specifications
W82 Modified design or composition of product
W83 Modified packaging
W84 Developed a new chemical product to replace a previous chemical product
W89 Other product modifications made

Methods to Identify Source Reduction Activities

T01 Internal pollution prevention opportunity audit(s)
T02 External pollution prevention opportunity audit(s)
T03 Materials balance audits
T04 Participative team management
T05 Employee recommendation (independent of a formal company program
T06 Employee recommendation (under a formal company program
T07 State government technical assistance program
T08 Federal government technical assistance program
T09 Trade association/industry technical assistance program
T10 Vendor assistance
T11 Other

Estimated Annual Reduction Range Codes

R1 = 100% (elimination of the chemical)

R2 = greater than or equal to 50%, but less than 100%

R3 = greater than or equal to 25%, but less than 50%

R4 = greater than or equal 15%, but less than to 25%

R5 = greater than or equal 5%, but less than to 15%

R6 = greater than 0%, but less than 5%

Example 27: Source Reduction

At a facility that manufactures and paints wood furniture various processes contain EPCRA Section 313 chemicals. Below are examples of the activities considered for reporting in Section 8.10.

A. *Source Reduction initiated during the reporting year*. By examining the gluing process, the facility discovered that a new drum of glue is opened at the beginning of each shift, whether or not the old drum is empty. By adding a mechanism that prevents the drum from being changed before it is empty, the facility eliminated the need for disposing unused glue (W54). This activity eliminates the glue at its source and is considered source reduction.

B. *Source Reduction implemented over multiple years*. With the assistance of a vendor and through a team assessment of the processes and chemicals used, the facility identified several changes and planned for their implementation over a three-year span. The first year the facility installed internal stop-loss valves and leak detection to finishing processes (W33); the second year they substituted coating materials for a table top finish from an acetone to a water based finish (W73); and the third year they modified their in-line product quality monitoring system (W15). The activities all reduce or eliminate quantities of a chemical entering the waste stream and released into the environment and are considered source reduction, each reported for the year implementation commenced.

C. *An activity that is NOT considered Source Reduction*. The painting process at the facility generates a solvent waste that is collected and recovered. The recovered solvent is recycled and used to clean the painting equipment. This activity does not reduce the amount of EPCRA Section 313 chemical from entering the waste stream, and therefore is not considered a source reduction activity.

Example 28: Green Chemistry

Six codes that describe green chemistry and green engineering practices were added to the list of source reduction activity codes in Reporting Year 2012 These codes are listed below with a description of when to use each to report a green chemistry or engineering activity.

W15 *Introduced in-line product quality monitoring or other process analysis system.* Select this code if the introduction of such a system led to a reduction in the amount of the EPCRA Section 313 chemical generated as waste.

W43 *Substituted a feedstock or reagent chemical with a different chemical.* Select this code if the EPCRA Section 313 chemical was a feedstock or reagent chemical and you replaced it (in whole or in part) with a different chemical.

For raw material substitutions not at the level of the individual chemical (e.g., the substitution of natural gas for coal), select instead W42 *Substituted raw materials*.

If use of a feedstock or reagent chemical was reduced or eliminated because of a change in the final product, select instead one of the codes listed under *Product Modifications.*

W50 *Optimized reaction conditions or otherwise increased efficiency of synthesis.* Select this code if the amount of the EPCRA Section 313 chemical generated as waste was reduced by increasing the overall efficiency of the synthesis.

If efficiency of syntheses was improved by using of a different catalyst, select instead W53 *Used a different process catalyst.*

W56 *Reduced or eliminated use of an organic solvent.* Select this code if the EPCRA Section 313 chemical was used as a solvent in the process and the process was modified such that the EPCRA Section 313 chemical was either replaced or no longer used in as large a quantity.

W57 *Used biotechnology in manufacturing process*. Select this code if the use of biotechnology in the process reduced or eliminated the use of the TRI chemical.

W84 *Developed a new chemical product to replace previous chemical product.* Select this code if the EPCRA Section 313 chemical had been produced at the facility but was replaced it (in whole or in part) with the production of a different chemical or chemicals.

8.11 Optional Pollution Prevention Information

In Section 8.11, you have the opportunity to provide more detail about activities your facility undertook to reduce releases of the EPCRA Section 313 chemical, including source reduction, recycling, energy recovery, treatment or other pollution controls. EPA encourages you to provide detail in Section 8.11, as it offers your organization the opportunity to showcase its achievements in preventing pollution.

You can use the provided text boxes in TRI-MEweb to describe your source reduction, recycling, or pollution control activities.

While EPA welcomes submissions about recycling and pollution control activities, the Agency is most interested in collecting information about innovative and effective source reduction activities, such as green chemistry or green engineering practices. In addition, the Agency wishes to encourage reporters to provide enough detailed information about their most effective source reduction activities to spur other facilities to adopt similar practices, as well as to inform the public about such activities being implemented in their communities.

To encourage submissions with additional pollution prevention information, EPA is increasing the prominence and accessibility of this information. Visit https://www.epa.gov/tri/p2 to learn how to access this information (e.g., through the P2 Search Tool tool) and to view examples of optional pollution prevention information highlighted in EPA's annual TRI National Analysis report.

The following tips can help you provide meaningful additional information.

Be Specific:

- Which processes and products were affected?
- Which technologies and materials were used?
- Which release (to air, water land) or waste management quantities changed?
- Were there other benefits (e.g., costs, product quality?)
- Who provided the idea or assisted with implementation?
- Why did you implement this activity?

Enter useful URLs:

- For equipment manufacturers
- To other information sources related to the activity described

A tip-sheet with additional guidance and sample entries can be found at https://www.epa.gov/sites/production/files/documents/tri_p2_tipsheet.pdf. If you wish to provide additional information that is not related to pollution prevention or other environmentally friendly practices, use Section 9.1.

When completing this section in TRI-MEweb, you may indicate that you have submitted information pertaining to one or more of the following topics by checking a box next to the topic to which your information pertains:

- Source Reduction
- Recycling
- Energy Recovery
- Waste Treatment
- General Environmental Management
- Methods for Identifying P2 Opportunities
- Ways P2 Was Incorporated in Original Process Design

If you do so, each topic you have selected will be included in your Section 8.11 entry, followed by the information you have provided about that topic. Using these checkboxes will facilitate searches for information about P2 and other environmentally-friendly practices by users of the TRI database.

Barriers to Implementing Pollution Prevention Activities

You may also provide details on any barriers your facility faces in implementing additional source reduction, recycling or pollution control activities. If you choose to provide this information, EPA encourages you to select one or more of the following barrier categories from the checklist provided in TRI-MEweb and describe specifically how one of these barrier categories applies to your facility:

B1. Insufficient capital to install new source reduction equipment or implement new source reduction activities/initiatives.

B2. Require technical information on pollution prevention techniques applicable to specific production processes.

B3. Concern that product quality may decline as a result of source reduction.

B4. Source reduction activities were implemented but were unsuccessful.

B5. Specific regulatory/permit burdens

B6. Pollution prevention previously implemented- additional reduction does not appear technically or economically feasible.

B7. No known substitutes or alternative technologies.

B8. Reduction does not appear to be technically feasible.

B99. Other barriers.

Each category you select in TRI-MEweb will be included in your Section 8.11 entry, followed by the additional details you provided on that topic (if any).

EPA believes this information is valuable in giving a full picture of the source reduction activities your facility engages in and what barriers you face in the implementation of source reduction activities. EPA also believes this information may allow for an exchange between those that have knowledge of source reduction practices, such as the EPA P2 Program, and those that are seeking additional help. In addition, it will better enable EPA to identify those technological areas for which EPA can support basic research to identify alternative technologies that are less polluting.

Section 9. *Miscellaneous Information (Form R & A)*

9.1 Miscellaneous, Optional, and Additional Information for Your Form R Report

Your facility may provide additional information pertaining to any portion of your Form R submission in the box provided in the free text box provided in TRI-MEweb. Your submissions to Section 9.1 regarding miscellaneous, additional, optional information may provide the Agency and/or the public with useful data that helps explain why your facility submitted data in one or more data elements that might appear unusual or inconsistent with previous TRI Form R submissions or with other data supplied by your facility during this reporting year. Such additional data may help EPA reduce the need for additional data quality control as well as additional TRI-related enforcement and compliance efforts. **Do not submit information you consider to be CBI or otherwise protected on your Form R.**

When completing this section in TRI-MEweb, you may indicate that you have submitted information pertaining to one or more of the following topics by checking a box next to the topic to which your information pertains:

- Changes in Production Levels
- Calculation Methods, e.g., Emission Factors
- One-time or Intermittent Events Impacting Reported Quantities
- Issues or Difficulties Encountered in Submitting Form
- Other Regulatory Requirements Related to This Chemical
- No TRI Reports Expected for This TRIFID Next Year
- No TRI Report Expected for This Chemical Next Year

If you do so, each topic you have selected will be included in your Section 9.1 entry, followed by the information you have provided about that topic (if any). Using these checkboxes will ensure that EPA and other TRI data users understand the factors that have contributed to any apparent data quality issues. Note that if you select one of the last two topics above, it is helpful to include the reason you will not be submitting a report next year (e.g., facility closure, move, temporary shutdown, etc.).

9.2 Optional Pollution Prevention and Additional Information for This Toxic Chemical on Your Form A Certification Statement

Your facility may provide additional information pertaining to pollution prevention or other topics for each Toxic Chemical or Mixture Component included on your Form A submission. Information provided in this section may provide the Agency and/or the public with useful data that helps explain your use of Form A. For example, your facility could include information on steps it has taken to reduce its manufacture, process, or otherwise use of the chemical. Do not submit information you consider to be CBI or otherwise protected.

TRI-MEweb allows you to categorize optional information provided by checking a box next to the topic to which your information pertains:

- Changes in Production Levels
- Source Reduction Activity Reduced Activity Involving this Chemical

- One-Time or Intermittent Events Involving this Chemical
- No TRI Report Expected for this Chemical Next Year

If you do so, each topic you have selected will be included in your Section 9.2 entry, followed by the information you have provided about that topic (if any). Using these checkboxes will ensure that EPA and other TRI data users understand useful factors related to how your facility deals with any chemicals included on the Form A Certification Statement. Note that if you select the last topic listed above, it is helpful to include the reason you will not be submitting a report next year (e.g., facility closure, move, temporary shutdown, etc.).

E. Instructions for Completing Form R Schedule 1 (Dioxin and Dioxin-like Compounds)

E.1 What is the Form R Schedule 1?

The Form R Schedule 1 is an adjunct to the Form R that mirrors the data elements from Form R Part II Chemical-Specific Information sections 5, 6, and 8 (current year only) and requires the reporting of the individual grams data for each member of the dioxin and dioxin-like compounds category present. Facilities that file Form R reports for the dioxin and dioxin-like compounds category are required to determine if they have any of the information required by the Form R Schedule 1. Facilities that have any of the information required by Form R Schedule 1 must submit individual member data via the Form R Schedule 1 in addition to the Form R.

E.2 Who is required to file a Form R Schedule 1?

Only facilities that file reports for the dioxin and dioxin-like compounds category may be required to file a Form R Schedule 1. Facilities that have any of the data required by Form R Schedule 1 for the individual members of the dioxin and dioxin-like compounds category must submit a Form R Schedule 1, in addition to the Form R. EPA notes that dioxin and dioxin-like compounds are not measured as a total quantity; the measurements are based on the individual compounds within the category. Emission factors for dioxin and dioxin-like compounds are also based on emission factors for the individual compounds within the category. EPA's guidance document for dioxin and dioxin-like compounds (Emergency Planning And Community Right-To-Know Act - Section 313: Guidance for Reporting Toxic Chemicals within the Dioxin and Dioxin-like Compounds Category, EPA-745-B-00-021, December 2000) includes tables that contain the emission factors for the individual members of the dioxin and dioxin-like compounds category. Since measured data and emission factor data are based upon data for the individual members of the dioxin and dioxin-like compounds category, the information required by Form R Schedule 1 should be available to facilities that file Form R reports for the dioxin and dioxin-like compounds category.

E.3 What information is reported on the Form R Schedule 1?

The only data reported on the Form R Schedule 1 is the mass quantity information required in sections 5, 6, and 8 (current year only) of the Form R. All of the other information required in sections 5, 6, and 8 of the Form R (off-site location names, stream or water body names, etc.) would be the same so this information is not duplicated on Form R Schedule 1. For example, if a facility reported 5.3306 grams on Form R Section 5.1 for fugitive or non-point air emissions for the dioxin and dioxin-like compounds category then the facility would report on the Form R Schedule 1 the grams data for each individual member of the category that contributed to the 5.3306 gram total. The sum of the gram quantities reported for each individual member of the category should equal the total gram quantity reported for the category on Form R for each data element (see examples in Figure 8). The NA box has the same meaning on Form R Schedule 1 as it does on the Form R and should only be marked if it is marked on the Form R.

It is extremely important that facilities enter their grams data for the individual members of the category based on the order shown in the **Individual Members of the Dioxin and Dioxin-like Compounds Category** table on page Error: Reference source not found. This information will be used to calculate toxic equivalency values using toxic equivalency factors that are specific to each member of the category. As with reporting on the Form R, facilities should report on the Form R Schedule 1 to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision to seven digits to the right of the decimal.

Form R Section 5 Example

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE					
			A. Total Release (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)	C. Percent from Stormwater
5.1	Fugitive or non-point air emissions	NA ☐	5.3306	M2	

Form R Schedule 1 Section 5 Example

SECTION 5. QUANTITY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE								
		5.1 NA ☐		5.2 NA ☐		5.3 Discharges to receiving streams or water bodies (Enter data for one stream or water body per box) NA ☐		
		Fugitive or non-point air emissions		Stack or point air emissions		5.3.1	5.3.2	5.3.3
D. Mass (grams) of each compound in the category (1-17)	1	0.0035						
	2	0.0059						
	3	0.0071						
	4	0.0008						
	5	0.0065						
	6	0.0923						
	7	0.5720						
	8	0.0723						
	9	0.0695						
	10	0.0399						
	11	0.3562						
	12	0.1309						
	13	0.0132						
	14	0.0815						
	15	1.4625						
	16	0.3126						
	17	2.1039						
If additional pages of Section 5.3 are attached, indicate the total number of pages in this box ☐ and indicate the Section 5.3 page number in this box ☐ (Example: 1, 2, 3, etc.)								

The Form R Schedule 1 provides boxes for recording the gram quantities for all 17 individual members of the dioxin and dioxin-like compounds category. The boxes on the Form R Schedule 1 for each release type are divided into 17 boxes. Each of the boxes (1-17) corresponds to the individual members of the dioxin category as presented in Table I.

Figure 8. Hypothetical Form R, Section 5.1 and Form R Schedule 1, Section 5.1

Individual Members of the Dioxin and Dioxin-like Compounds Category

Box #	CAS#	Chemical Name	Abbreviation
1.	01746–01–6	2,3,7,8-Tetrachlorodibenzo- p-dioxin	2,3,7,8-TCDD
2.	40321–76–4	1,2,3,7,8-Pentachlorodibenzo- p-dioxin	1,2,3,7,8-PeCDD
3.	39227–28–6	1,2,3,4,7,8-Hexachlorodibenzo- p-dioxin	1,2,3,4,7,8-HxCDD
4.	57653–85–7	1,2,3,6,7,8-Hexachlorodibenzo- p-dioxin	1,2,3,6,7,8-HxCDD
5.	19408–74–3	1,2,3,7,8,9-Hexachlorodibenzo- p-dioxin	1,2,3,7,8,9-HxCDD
6.	35822–46–9	1,2,3,4,6,7,8-Heptachlorodibenzo- p-dioxin	1,2,3,4,6,7,8-HpCDD
7.	03268–87–9	1,2,3,4,6,7,8,9-Octachlorodibenzo- p-dioxin	1,2,3,4,6,7,8,9-OCDD
8.	51207–31–9	2,3,7,8-Tetrachlorodibenzofuran	2,3,7,8-TCDF
9.	57117–41–6	1,2,3,7,8-Pentachlorodibenzofuran	1,2,3,7,8-PeCDF
10.	57117–31–4	2,3,4,7,8-Pentachlorodibenzofuran	2,3,4,7,8-PeCDF
11.	70648–26–9	1,2,3,4,7,8-Hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF
12.	57117–44–9	1,2,3,6,7,8-Hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF
13.	72918–21–9	1,2,3,7,8,9-Hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF
14.	60851–34–5	2,3,4,6,7,8-Hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF
15.	67562–39–4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF
16.	55673–89–7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF
17.	39001–02–0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	1,2,3,4,6,7,8,9-OCDF

E.4 How do I report Form R Schedule 1 Data?

The Electronic Reporting of Toxics Release Inventory Data rule requires that all Dioxin and Dioxin-like Compound data must be submitted electronically via TRI-MEweb. For each data element in Sections 5, 6, and 8 (current year only), TRI-MEweb has a clickable button labeled "**Schedule 1**" that loads a separate page *Release/Transfer Quantities by Category Member*. In this page, you can enter the individual quantities for each category member. TRI-MEweb will automatically calculate the category total. If any releases or transfer were due to non-production-related wastes (see Chapter 2, Part II, Section 8.8), enter those values on the same page. If your facility does not have individual member data, you can select the checkbox labeled "I would like to enter total grams of Dioxin and Dioxin-like Compounds" and the "**Next**" button to enter total quantities.

F. Optional Facility-Level Information and Non-Reporting

Although there is no requirement to inform the EPA of updates to a facility's contact and location information outside of what is required on a TRI reporting form, each year some facilities voluntarily elect to provide this information to the EPA. Additionally, each reporting year some facilities contact EPA to indicate that they will no longer be reporting to TRI or will not be submitting

a form for one or more specific TRI-listed chemicals.

Facilities can use TRI-MEweb to provide optional facility-level information for the following categories:

- Facility name has changed
- Facility technical contact has changed
- Facility public contact has changed
- Facility has relocated to a new physical address
- Facility merged with another location
- Facility has closed
- Facility was temporarily shut down
- Facility did not have 10 or more full-time employee equivalents
- Facility is not in a covered NAICS sector
- Facility fell below reporting threshold for one or more chemicals due to source reduction
- Facility fell below reporting threshold for one or more chemicals due to exemption
- Facility fell below reporting threshold for one or more chemicals due to reason(s) other than source reduction or use of an exemption