



Abt Associates Inc.

MEMORANDUM

TO: Paul Borst, USEPA

FROM: Hilary Eustace, David Cooper, Susan Day

DATE: July 16, 2004

RE: TRI Reporting Burden Estimates

1. INTRODUCTION

EPA currently relies on previously developed OMB approved TRI reporting burden estimates that reflect the total time required by facilities to complete activities such as rule familiarization, compliance determination, form completion, record keeping/ mailing, and supplier notification. While form completion reporting burden estimates have been prepared for completion of the full Form R, the total time is not broken down by the individual data elements that make up the form. Data element specific burden estimates would allow for informed assessments and comparisons of proposed TRI burden reduction methods as well as any future proposed Form R modifications. In this memo, burden estimates are derived for every data element on the Form R based on the activities TRI reporters undertake to complete each data element as well as the time estimates for technical, managerial, and clerical staff at a *typical* facility to conduct these activities. During the last TRI ICR renewal, EPA referenced industry data suggesting that TRI reporting burden is lower than previously estimated. While the newly negotiated burden estimates were revised downward for non-PBT chemicals, they were not lowered by as much as EPA proposed. Furthermore, PBT chemical reporting burden was not lowered at all. The OMB approved reporting estimates are presented in Table 1. The data element specific burden estimates presented in this memo are estimated first to reflect the time it actually takes the typical facility to fill out each data element. This burden is referred to as the “realistic burden.” Second, the data element specific realistic burden estimates are scaled up so that summing them yields the OMB approved burden estimate of form completion. Several sets of burden estimates were prepared, including times for both electronic and paper form preparation for every category outlined below:

- **Realistic Burden Estimates for Every Form R Data Element:** Realistic burden estimates were prepared for every data element on the Form R based on best engineering judgement for both management and technical time. Under the realistic scenario, no clerical time is spent on form completion. Separate realistic burden estimates were prepared for non-PBT and PBT chemicals.
- **Realistic Burden Estimates for Total Form R Completion:** The realistic data element burden estimates were weighted by the incidence rate, which is the total percentage of forms containing information other than “NA” for the data element, in order to reflect the fact that not all data elements will be completed on all forms. The incidence rate was calculated using the frozen RY 2002 TRI data. This analysis was conducted separately for non-PBT and PBT chemicals.
- **Scaled Burden Estimates for Every Form R Data Element for non-PBT Chemicals:** The realistic burden estimates generated for every data element for non-PBT chemicals were scaled up to meet the current OMB-approved time estimate for calculations and form completion for a Form R for a non-PBT chemical.
- **Scaled Burden Estimates for Every Form R Data Element for PBT Chemicals:** The realistic burden estimates generated for every data element for PBT chemicals were scaled up to meet the current OMB-approved time estimate for calculations and form completion for a Form R for a PBT chemical. Since the current OMB-approved time estimate for calculations and form completion for a PBT chemical assumes that all data elements are completed, these scaled data element time estimates were not multiplied by the incidence rate for PBT chemicals.

TABLE 1
OMB-APPROVED TIME ESTIMATES FOR FORM R
CALCULATIONS/FORM COMPLETION

Activity	Management	Technical	Clerical	Total Hours
First year				
Calculations and report completion - non-PBT chemicals	11.3	24.1	1.6	37.0
Calculations and report completion - PBT chemicals	20.9	45.2	2.9	69.0
Subsequent years				
Calculations and report completion - non-PBT chemicals	7.7	16.4	1.1	25.2
Calculations and report completion - PBT chemicals	14.3	30.8	2.0	47.1
Source: Rice, Cody Memo: Terms of Clearance for TRI ICR Renewal. Jan 20, 2004. An OMB-approved estimate for first time non-PBT filers does not exist; however, the RIA for the original Section 313 rulemaking estimated the time required to complete a report in the first year to be 147% of the time required in subsequent years. This factor was applied to the OMB approved subsequent year non-PBT report completion times to calculate the first year non-PBT completion times. (U.S. EPA Regulatory Impact Analysis in Support of Final Rulemaking under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (1988)).				

Realistic estimates, based on best engineering judgment, are presented in Section 2; Section 3 presents the realistic estimate scaled to the OMB approved Form R completion times. Within each section, PBT and non-PBT reporting burden is examined separately due to differences in methodology. The PBT and non-PBT chemical sub-sections are further divided into electronic and paper methodology and results sub-sections.

2. REALISTIC REPORTING BURDEN ESTIMATES

2.1.A. Methodology for Electronic Submission

The basis for all of the burden estimates presented in this memo start with a realistic burden estimate for a typical facility to prepare a Form R in the first year and all subsequent reporting years. To generate this realistic burden estimate, the method described below was utilized. First, the steps required for completion of each data element (field) on the Form R were identified. Best engineering judgement was used to estimate the time to complete each step based on a reasonable and likely scenario for conducting the needed steps a typical facility. Best engineering judgement was provided by a team of three staff with nearly 40 years of combined experience working with facilities on environmental issues. These staff have worked with hundreds of facilities on TRI

reporting and other environmental requirements by conducting inspections and providing technical assistance to hundreds of facilities, serving as TRI trainers, conducting technical review on hundreds of TRI data withdrawal requests, conducting hundreds of TRI data quality calls, working for two of the Massachusetts Toxics Use Reduction Act agencies, and working as environmental staff at large manufacturing facilities.) Next, the total time to complete each data element was estimated by summing together the labor hours required to complete the set of steps necessary for each data element.

Best and worst-case scenarios of activities were considered when estimating the time required to complete each step. The time estimates presented here reflect the most typical/likely scenario. For example, scenarios to identify average discharge water flow rate range from transcribing dozens of hand-written entries from manual meter observation to simply pulling this piece of data from a fully-automated system. The likely scenario selected is that the typical facility will have at least partial automation on data capture from their flow meter, but technical staff will likely have to pull multiple pieces of information, interpret this information, and perform a few calculations. Several Form R data elements will require the same or similar activities. To ensure consistency, times were standardized for these activities. These standard times are presented in Table 2.

For Form R data elements requiring a quantitative estimate of release or other waste management quantities, the steps a facility would take to fill in the data elements were derived based on the most common basis of estimate code reported for that field in the RY 2002 TRI data. The basis of estimate code analysis is presented in Table 3. For example, monitoring data was the most common basis of estimate code for off-site transfers to POTWs; therefore, the steps required to make engineering calculations based on monitoring data were used as the basis for the time estimate for this data element. In actuality, each facility would use their best available data for completing each field. As a final check, estimated times for data elements were compared with one another based on expected relative degree of difficulty.

The total realistic form completion burden was calculated by combining the time required to complete each data element with the percent of times individual data elements are typically completed. As mentioned above, this adjustment was made by weighting the data element specific burden by the incidence rate for that element. For example, if a stack air release quantity (either "0" or an actual quantity) was reported on 50% of all non-PBT Form Rs, the time estimated to complete Part II, Section 5.2 of the Form R was multiplied by 50%. For data elements that are required, it was assumed that 100% of forms had the data element filled out. The final reporting burden is a realistic estimate of the total form completion time based on engineering judgement. A separate analysis was done for non-PBT and PBT chemicals.

As mentioned above, these burden estimates are based on the TRI reporting experiences of a *typical* facility. It was, therefore, necessary to make the following assumptions about a typical facility:

- The facility is reasonably modern and well-organized.

- The facility has internet access with reasonable connection speed.
- Through rule familiarization, the technical staff are aware that written EPA TRI guidance is available through the website.
- Unless otherwise noted, the set of activities listed for a release estimate need only be conducted once.
- Unless otherwise noted, there is no difference in completing a data element for non-PBT versus PBT chemicals. (Additional discussion on PBTs versus non-PBTs is provided below).
- Technical staff retain copies of the previous year's reports in a readily available format. Therefore, static information available from the previous year's reports, such as RCRA I.D., is assumed to require only typing time in subsequent years.
- For subsequent year reports, technical staff will be able to locate, review, and interpret information needed to prepare release and other waste management estimates more quickly since they have already gone through the process.
- For subsequent year reports, it is assumed that there are no significant changes to facility operations or waste management practices.
- Technical staff preparing the report will concurrently type this information into TRI-ME and will not require clerical assistance in entering information into TRI-ME.
- On the paper form estimates of reporting burden, clerical time consists entirely of typing hard copy Form Rs; no other activities are undertaken. For example, technical staff conduct all of the needed research for preparing the form.

Since more than 80% of Form Rs were filed electronically in RY 2002, it is assumed for the realistic burden estimate that technical staff prepare the electronic form; therefore, no clerical burden is estimated. Also, in the realistic burden estimate, management review time is based on the maximum perceived level of management involvement at reporting facilities and is lower than previous OMB approved management burden estimates. In the following sections, data elements are presented as they appear on the Form R. Reporting burden estimates are presented after each step for first year/subsequent years in minutes. If a step will take less time or does not need to be repeated in subsequent years, this will be reflected in the allotted time (i.e., a lower time or "0" will be given for subsequent years).

As mentioned above, the calculations/form completion burden for non-PBT chemicals was recently revised from 47.1 hours to 25.2 hours for non-PBT chemicals (Memo from Cody Rice to

Amy Newman: Terms of Clearance for TRI ICR Renewal. Jan 20, 2004). Reporting burden associated with PBT chemicals was not revised due to trade association comments suggesting that because range reporting and the *de minimis* exemption cannot be used for PBT chemicals, form completion takes longer for a PBT chemical than a non-PBT chemical. While there may be overall differences in TRI reporting burden between PBT and non-PBT forms, this difference is largely due to compliance determination activities, not form completion.

Specifically, the *de minimis* exemption is not allowed for PBT chemicals. Therefore, compliance determination may take longer for PBT chemicals, as additional mixtures may need to be assessed for threshold quantity. It does not appear, however, that the lack of the *de minimis* exemption will increase the burden associated with making release estimates due to a need to assess additional waste streams. An analysis of the RY 2002 TRI data indicated that the average number of reported “M” codes for off-site transfers was slightly lower for PBTs than for non-PBTs (2.55 versus 2.64, respectively). Assuming that different waste streams are indicated by different waste management methods, as indicated by the “M” code, it appears that there were slightly fewer differing waste streams for PBT chemicals than for non-PBT chemicals.

Also, not being able to use range reporting does not actually increase the reporting burden for PBT filers. Range reporting is allowed for non-PBT chemicals in Part II, Sections 5 and 6 of the Form R (on-site releases and off-site transfers of wastes), but is not allowed in Part II, Section 8 of the Form R. All release and other waste management quantities from Sections 5 and 6 are also recorded in Section 8 of the Form R, therefore, actual estimates (versus range estimates) for Sections 5 and 6 must be made to complete Section 8. As a result, no fewer calculations are necessary to complete a Form R for non-PBTs versus PBTs due to range reporting. In addition, range reporting is only allowed for releases less than 1,000 pounds, and calculations are needed to determine which range is applicable.

As shown below, using best engineering judgment, there does not appear to be a significant difference between calculations/form completion activities and burden for PBT versus non-PBT chemicals. In fact, it is estimated that the calculations/form completion time for PBT chemicals is slightly lower, primarily due to the fact that more EPA-published quantitative guidance is available for PBT chemicals, such as emission factors. Analysis of RY 2002 TRI data shows the following:

- The most commonly reported basis of estimate codes were nearly identical for PBTs versus non-PBTs.
- The percent of data elements filled out by RY 2002 filers was nearly the same for PBT and non-PBT forms, with the difference being the percent was slightly lower for PBTs.
- For data elements where multiple occurrences were reported (e.g., off-site transfer locations, number of “M” codes for off-site transfers, number of reported on-site treatment waste streams), the incidence rates were nearly identical for PBT and non-PBT

forms.

The derivation of the data element specific burden estimates is presented below. Only one complete set of steps reflecting expected activities for both PBT and non-PBT chemicals is provided for each data element (with a few minor exceptions) as there are no significant differences in form completion activities. Minor differences expected between non-PBT and PBT chemicals are noted in the individual data element discussions where they occur.

Data Element Specific Reporting Burden

Form R, Part I. Facility Identification Information

Section 1: Reporting Year

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will have knowledge of this information and will report it in Part I, Section 1 of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part I, Section 1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.25	0.25
Total	0.33	0.33

Section 2: Trade Secret Information

2.1 Are you claiming the toxic chemical identified on page 2 trade secret?

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will have knowledge of this information and will check yes or no in Part I, Section 2.1 of the Form R. (0.08 min/0.08 min)

Reporting Burden Associated with Part I, Section 2.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.08	0.08
Total	0.16	0.16

2.2 Is this copy sanitized or unsanitized?

Facilities must meet rigorous standards as outlined in 40 CFR 350 in order to claim trade secret status; therefore, it is assumed a typical facility will check “no” in Part I, Section 2.1 of the Form R, and subsequently Part I, Section 2.2 of the Form R will be left blank.

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will have knowledge of this information and will check yes or no in Part I, Section 2.2 of the Form R. (0.08 min/0.08 min)

Reporting Burden Associated with Part I, Section 2.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.08	0.08
Total	0.16	0.16

Section 3: Certification

In RY 2002, more than 80% of Form R reports were filed via diskette or CDX submission. Electronic signature occurs as part of the CDX submission process and with diskette submission a separate signed letter is sent. Burden for this effort is allocated under “Record keeping/Mailing” and therefore is not included in the “Calculations/Form Completion” burden estimate outlined in this report. Thus, no management, technical, nor clerical burden associated with this element of the Form R will be allocated for this analysis.

Section 4.1: Facility Identification (Name, Address)

Management burden includes proofreading this section as part of an overall review of the Form R. (0.67 min/0.67 min)

Technical staff will have knowledge of this information and will report it in Part I, Section 4.1 of the Form R. (2.0 min/0 min)

Reporting Burden Associated with Part I, Section 4.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.67	0.67
Technical	2.00	0.00
Total	2.67	0.67

Section 4.2: Reporting by Part

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

4.2a or 4.2b

Technical staff will have knowledge of this information, and will check off if this Form R is for an entire facility or part of a facility in Part I, Section 4.2a or 4.2b, respectively, of the Form R. (0.08 min/0.08 min)

Reporting Burden Associated with Part I, Section 4.2a or 4.2b

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.08	0.08
Total	0.16	0.16

4.2c or 4.2d

This section is only filled out if the Form R is from a federal facility or a government-owned, contractor-operated (GOCO) entity conducting work on behalf of the federal government. Since fewer than 5% of Form Rs are filled out by these facilities, this section will typically be left blank.

Technical staff will have knowledge of this information, and will check off if this Form R is for a federal facility or a GOCO in Part I, Section 4.2c or 4.2d, respectively, of the Form R. No time is included for this step because it is filled out less than 5% of the time.

Section 4.3: Technical Contact Information (Name, Address, E-mail, Telephone)

Management burden includes proofreading this section as part of an overall review of the Form R. (0.25 min/0.25 min)

Technical staff will have knowledge of this information and will report it in Part I, Section 4.3 of the Form R. (0.75 min/ 0 min)

Reporting Burden Associated with Part I, Section 4.3

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.25	0.25
Technical	0.75	0.00
Total	1.00	0.25

Section 4.4: Public Contact Information (Name, Telephone)

Management burden includes proofreading this section as part of an overall review of the Form R. (0.17 min/0.17 min)

Technical staff will have knowledge of this information and will report it in Part I, Section 4.4 of the Form R. (0.50 min/0 min)

Reporting Burden Associated with Part I, Section 4.4

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.17	0.17
Technical	0.50	0.00
Total	0.67	0.17

Section 4.5: SIC Code(s)

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

As an integral part of compliance determination, a facility will have determined which SIC codes apply to the facility. Technical staff simply record this information in Part I, Section 4.5 of the Form R. (0.25 min/0 min)

Reporting Burden Associated with Part I, Section 4.5

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.25	0.00
Total	0.33	0.08

Section 4.6: Latitude/Longitude

Management burden includes proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Technical staff will go to the TRI facility siting tool available on the EPA Web site and type in their facility address. The tool will then report back the latitude and longitude. The technical staff will record this information in Part I, Section 4.6 of the Form R. (4.5 min/0 min)

Reporting Burden Associated with Part I, Section 4.6

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.50	0.50
Technical	4.50	0.00
Total	5.00	0.50

Section 4.7: Dun & Bradstreet Number

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will obtain this information from elsewhere in the company by making a phone call, checking files, or making an in-person information request. Once obtained, technical staff will record this information in Part I, Section 4.7 of the Form R. (10.0 min/0 min)

Reporting Burden Associated with Part I, Section 4.7

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	10.00	0.00
Total	10.08	0.08

Section 4.8: EPA Identification Number (RCRA ID)

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Unless hazardous waste manifests are stored with the technical staff preparing the report, they will need to obtain this information from elsewhere in the company by making a phone call, checking files, or making an in-person information request. For the purposes of this estimate, it is assumed that technical staff will need to obtain this information from elsewhere. Once

obtained, technical staff will record this information in Part I, Section 4.8 of the Form R. (10.0 min/0 min)

Reporting Burden Associated with Part I, Section 4.8

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	10.00	0.00
Total	10.08	0.08

Section 4.9: Facility NPDES Permit Number

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Unless NPDES permit documents are stored with the technical staff preparing the report, they will need to obtain this information from elsewhere in the company by making a phone call, checking files, or making an in-person information request. For the purposes of this estimate, it is assumed that technical staff will need to obtain this information from elsewhere. Once obtained, technical staff will record this information in Part I, Section 4.9 of the Form R. (10.0 min/0 min)

Reporting Burden Associated with Part I, Section 4.9

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	10.00	0.00
Total	10.08	0.08

Section 4.10: Underground Injection Well Code (UIC I.D.)

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Unless NPDES permit documents are stored with the technical staff preparing the report, they will need to obtain this information from elsewhere in the company by making a phone call, checking files, or making an in-person information request. Once obtained, technical staff will record this information in Part I, Section 4.10 of the Form R. (10.0 min/0 min)

Reporting Burden Associated with Part I, Section 4.10

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	10.00	0.00
Total	10.08	0.08

Section 5.1: Name of Parent Company

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will need to obtain this information from elsewhere in the company by making a phone call, checking files, or making an in-person information request. Once obtained, technical staff will record this information in Part I, Section 5.1 of the Form R. (10.0 min/0 min)

Reporting Burden Associated with Part I, Section 5.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	10.00	0.00
Total	10.08	0.08

Section 5.2: Parent Company's Dun & Bradstreet Number

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will need to obtain this information from elsewhere in the company by making a phone call, checking files, or making an in-person information request. Once obtained, technical staff will record this information in Part I, Section 5.2 of the Form R. (10.0 min/0 min)

Reporting Burden Associated with Part I, Section 5.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	10.00	0.00
Total	10.08	0.08

Form R, Part II. Chemical-Specific Information

Section 1.1: CAS Number

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will have the CAS Number readily available from activities conducted during compliance determination, such as review of Material Safety Data Sheets (MSDSs) or review of the EPCRA Section 313 chemical list, and report it in Part II, Section 1.1 of the Form R. (0.25 min/0 min)

Reporting Burden Associated with Part II, Section 1.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.25	0.00
Total	0.33	0.08

Section 1.2: Toxic Chemical or Chemical Category Name

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff will have the chemical name readily available from activities conducted during compliance determination, such as review of Material Safety Data Sheets (MSDSs) or review of the EPCRA Section 313 chemical list, and report it in Part II, Section 1.2 of the Form R. (0.25 min/0 min)

Reporting Burden Associated with Part II, Section 1.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.25	0.00
Total	0.33	0.08

Section 1.3: Generic Chemical Name

Facilities must meet rigorous standards as outlined in 40 CFR 350 in order to claim trade secret status; therefore, this section of the Form R is not typically used. If a facility meets the standard for trade secret status, this section of the Form R is completed instead of Part II, Sections 1.1 and 1.2. If this section is used, management burden includes proofreading this section as part of an

overall review of the Form R. (0.08 min/0.08 min)

Technical staff would create a generic, structurally descriptive chemical name and report it in Part II, Section 1.3 of the Form R. (0.50 min/0 min)

Reporting Burden Associated with Part II, Section 1.3

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.50	0.00
Total	0.58	0.08

Section 1.4: Distribution of Each Member of the Dioxin and Dioxin-Like Compounds Category

This section of the Form R is left blank unless the chemical is dioxin and dioxin-like compounds. Therefore, for Form Rs for all other chemicals there is no management, technical, nor clerical burden associated with this element. If the Form R is for dioxin and dioxin-like compounds, management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

Technical staff would most likely obtain the distribution of each member of the dioxin and dioxin-like compounds category for the appropriate activity from EPA's document "EPCRA Section 313 Guidance for Reporting Toxic Chemicals Within the Dioxin and Dioxin-like Compounds Category" and report it in Part II, Section 1.4 of the Form R. (5 min/2 min)

Reporting Burden Associated with Part II, Section 1.4

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	5.00	2.00
Total	5.08	2.08

Section 2.1: Generic Chemical Name Provided by Supplier

This section of the Form R is only completed if the facility's chemical supplier meets the standard for trade secret status and is therefore not typically used. If the material supplied meets the standard for trade secret status, this section of the Form R is completed instead of Part II, Sections 1.1 and 1.2. If this section is used, management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/ 0.08 min)

Technical staff would have the generic chemical name provided by the supplier readily available

from activities conducted during compliance determination, such as review of Material Safety Data Sheets (MSDSs), and report it in Part II, Section 2.1 of the Form R. (0.25 min/0 min)

Reporting Burden Associated with Part II, Section 2.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.25	0.00
Total	0.33	0.08

Section 3.1: Manufacture the Toxic Chemical

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

As an integral part of compliance determination, the facility becomes familiar with the EPCRA Section 313 threshold activities that the chemical was involved in during the reporting year. Therefore, technical staff simply check off the relevant descriptions of manufacturing activities for the chemical presented in Part II, Section 3.1 of the Form R. (0.08 min/0 min)

Reporting Burden Associated with Part II, Section 3.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.08	0.00
Total	0.16	0.08

Section 3.2: Process the Toxic Chemical

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

As an integral part of compliance determination, the facility becomes familiar with the EPCRA Section 313 threshold activities that the chemical was involved in during the reporting year. Therefore, technical staff simply check off the relevant descriptions of processing activities for the chemical presented in Part II, Section 3.2 of the Form R. (0.08 min/0 min)

Reporting Burden Associated with Part II, Section 3.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.08	0.00
Total	0.16	0.08

Section 3.3: Otherwise Use the Toxic Chemical

Management burden includes proofreading this section as part of an overall review of the Form R. (0.08 min/0.08 min)

As an integral part of compliance determination, the facility becomes familiar with the EPCRA Section 313 threshold activities that the chemical was involved in during the reporting year. Therefore, technical staff simply check off the relevant descriptions of otherwise use activities for the chemical presented in Part II, Section 3.3 of the Form R. (0.08 min/0 min)

Reporting Burden Associated with Part II, Section 3.3

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.08	0.08
Technical	0.08	0.00
Total	0.16	0.08

Section 4.1: Maximum Amount of the Toxic Chemical On-Site at any Time During the Calendar Year

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.08 min/ 0.91 min)

The maximum amount of toxic chemical on-site at any point during the year is reported as a range code, with each range representing one order of magnitude. To determine the range estimate for the maximum amount of the toxic chemical in storage, in process, and in on-site wastes at any one point during the year, it is assumed the technical staff performs the steps outlined below. The estimate is needed to identify a quantity within a very broad range, not to identify a more exact quantity. For this reason, steps outlined here will take less time than when conducted for a data element requiring a more precise estimate.

- Determine the maximum quantity of the toxic chemical in storage at any point during the calendar year by either reviewing inventory records or talking with operations staff. (9.00 min/9.00 min)

- Determine the maximum quantity of the toxic chemical in process at any point during the calendar year by either reviewing operations records or talking with operations staff. (9.00 min/9.00 min)
- Determine the maximum quantity of the toxic chemical in on-site wastes at any point during the calendar year by either reviewing waste records, such as hazardous waste manifests, or talking with operations staff. (9.00 min/9.00 min)
- Sum together the storage, process, and waste quantities to calculate the maximum amount of the toxic chemical on-site at any one point during the year. (3.00 min/3.00 min)
- Locate the appropriate 2-digit code from the TRI Reporting Forms and Instructions and report it in Part II, Section 4.1 of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 4.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.08	0.91
Technical	30.25	30.25
Total	31.33	31.16

Section 5.1: Fugitive or Non-Point Air Emissions

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.08 min/2.58 min)

The most commonly reported basis of estimate code for fugitive air releases for both non-PBT and PBT chemicals is “O,” other approaches. It is assumed the most typical approach would involve an estimate based on use of physical and chemical properties and process operating conditions. To estimate fugitive or non-point air emissions, technical staff would perform the following steps:

- Identify all fugitive release points for the chemical through review of air permits, discussions with operations staff, review of process flow diagrams, or a visual inspection of operations. (30.00 min/5.00 min)
- Identify physical and chemical property data for the chemical, including volatility, boiling point, etc. (5.00 min/5.00 min)
- Identify relevant process operating conditions, such as temperature, turbulence, etc., (45.00 min/30.00 min)

- Determine material usage quantity through a review of inventory records, purchase records, operation records, or discussions with operations staff. (30.00 min/30.00 min)
- Locate and review guidance from EPA, trade associations, or other sources, or air permit information that provides quantitative assistance for estimating fugitive loss (e.g., EPA’s Protocol for Equipment Leak Emission Estimates, air permit assumption of 1% loss of volatiles due to transfers in an otherwise closed system). (60.00 min/30.00 min)
- Make the best estimate of fugitive or non-point air emissions based upon the physical and chemical properties and process operating conditions and report the value in Part II, Section 5.1 of the Form R. (25.00 min/15.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.1.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.08	2.58
Technical	195.25	115.08
Total	198.33	117.66

Section 5.2: Stack or Point Air Emissions

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.08 min/1.75 min)

The most commonly reported basis of estimate code for stack air releases for non-PBT chemicals is “O,” other approaches. It is assumed the most typical approach uses non-published emission factors. The most commonly reported basis of estimate code for stack air releases for PBT chemicals is “E,” published emission factors. Using these emission factors, technical staff would perform the following steps:

- Identify all of the stack release points for the chemical. The process for identifying these releases requires technical staff to perform any or all of the following steps: review air permits or process flow diagrams, consult with operational/environmental staff, or conduct a visual inspection of the facility. (30.00 min/5.00 min)
- For each stack air release, locate the most applicable emission factor. For PBT chemicals, EPA-published emission factors are obtained from numerous EPA sources, including a chemical or industry specific guidance, AP-42, or the technology transfer network (for

TANKS program). (10/9 minutes) For non-PBT chemicals, emission factors are obtained from sources such as trade associations and university research. (30.00 min/15.00 min)

- Determine the annual quantity of input material by reviewing purchase records, inventory records, and/or operational records. (30.00 min/30.00 min)
- Multiply this material usage quantity by the emission factor to determine the amount of material released from each point during the year. If needed, convert the amount of material released to pounds (or grams for dioxins) by applying the appropriate conversion factor. (6.00 min/6.00 min)

It is assumed that there will be an average of two unique types of stack releases for each chemical at a typical facility (i.e., two different emission factors would be applied). There are economies of scale in quantifying the second release type due to concurrent activities, such as searching the same sources to locate emission and conversion factors (4.00 min/4.00 min) and reviewing the same sources to determine the annual quantity of input material. Technical staff would perform the following steps:

- Multiply this material usage quantity by the emission factor to determine the amount of material released from each point during the year. If needed, convert the amount of material released to pounds (or grams for dioxins) by applying the appropriate conversion factor. (5.00 min/5.00 min)
- Sum all of the quantified stack air releases for the given chemical to quantify the total stack or point air emissions (lb/yr) and report the value in Part II, Section 5.2 of the Form R. (1.00 min/1.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.2.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.08	1.75
Technical	106.25	66.25
Total	109.33	68.00

Section 5.3: Discharges to Receiving Streams or Water Bodies

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.33 min/2.83 min)

The most commonly reported basis of estimate code for discharges to receiving streams or water bodies is “M,” use of monitoring data, for both non-PBTs and PBTs. To estimate discharges to receiving streams or water bodies, technical staff would perform the following steps:

Release Quantity from Process Water

1. Locate and review the facility’s monitoring results for process water outfall(s) to determine the chemical concentration for each monitoring point. (35.00 min/25.00 min)
2. Obtain flow rate data from the NPDES permit or a flow meter. If neither is available, estimate the volume of wastewater generated by reviewing water usage data. The estimated flow is calculated by dividing the volume of wastewater by the usage time (e.g., days). (15.00 min/10.00 min)
3. Identify the number of discharge days by talking with operations staff. (15.00 min/15.00 min)
4. Multiply the identified chemical concentration (for one monitoring data point) by the daily water flow rate to calculate the daily release for this point. Repeat this step for all monitoring points, averaging the results together to calculate the average daily release. Multiply the average daily release by the number of release days to calculate the total annual release quantity. Apply any needed conversion factors to get the result in pounds. (10.00 min/10.00 min)

Release Quantity from Storm Water

5. Locate and review the facility’s monitoring results from storm water outfall(s) to determine the chemical concentration for each monitoring point, and average them together. Apply needed conversion factors to obtain the total annual release from storm water in pounds. (45.00 min/35.00 min)
6. Locate the annual rainfall for the facility’s area, assuming 12 inches of snow is equivalent to 1 inch of rain. (4.00 min/3.00 min)
7. Estimate the percent of land at the facility covered by asphalt, concrete, and unimproved vegetation/soil. Technical staff generate a weighted-average runoff coefficient by multiplying the percent of land area by the runoff coefficient for that land type. (30.00 min/5.00 min)
8. Multiply the total annual rainfall by the weighted-average runoff coefficient, the total area of the facility, and the conversion factor for gallons per cubic foot to calculate the total annual storm water runoff in gallons. (5.00 min/5.00 min)

9. Multiply the total volume (gallons) of storm water by the chemical concentration to calculate the total mass (pounds) of the chemical contained in the annual storm water runoff. If needed, apply a conversion factor. (4.00 min/4.00 min)

Total Release Quantity

10. Sum together the annual release quantity from process water with the annual release quantity from storm water to obtain the total annual release quantity to water. Report the total release (lb/yr) in Part II, Section 5.3.1.A of the Form R as the total releases to a water body for a specific chemical. (2.00 min/2.00 min)

Basis of Estimate

11. Report whether the release estimate was based on monitoring data, mass balance, a published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.3.1.B of the Form R. (0.25 min/0.25 min)

Percent from Stormwater

12. Divide the quantity of the chemical contained in the storm water by the total quantity of the chemical released to water in order to calculate the percent of the chemical released from storm water. Report this percentage in Part II, Section 5.3.1.C of the Form R. (2.00 min/2.00 min)

Note: Many facilities will not need to assess storm water in order to calculate release to water as many TRI chemicals will not typically be found in storm water run-off, but will instead only be found in process water. In order to reasonably estimate how much time should be allocated to a typical facility for assessing storm water, a data analysis was conducted on the RY 2002 TRI data. First, all form Rs for which 5.3A had a value of greater than or equal to zero were identified. Second, within that set, the percentage of these forms that had a value of greater than zero in 5.3C were identified. This analysis was conducted separately for non-PBTs and for PBTs, with identified values of 39.3% and 44.4%, respectively. The total estimated burden for identifying annual release quantity from storm water (steps 5 through 9 above) was then multiplied by 39.3% for non-PBTs and by 44.4% for PBTs. This calculation is shown below:

Total percent from storm water burden multiplied by incidence rate for a value greater than zero in 5.3.C when there was a value of greater than or equal to zero in 5.3.A:

non-PBTs: (88.00 min/52.00 min) x 39.3% incidence = (34.58/20.44)

PBTs: (88.00 min/52.00 min) x 44.4% incidence = (39.07/23.09)

This incidence-weighted value was added with the total estimated burden for identifying the annual release quantity from process water to obtain the total calculation time estimate for 5.3.A. The table below reflects the incidence-weighted value for storm water assessment.

Reporting Burden Associated with Part II, Section 5.3

Personnel Type	First Year Burden (minutes)		Subsequent Year Burden (minutes)	
	Non-PBT	PBT	Non-PBT	PBT
Management	3.33	3.33	2.83	2.83
Technical	113.83	118.32	84.69	87.34
Total	117.16	121.65	87.52	90.17

Section 5.4.1: Underground Injection On-Site to Class I Wells

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (2.08 min/1.75 min)

The most commonly reported basis of estimate code for releases to underground injection Class I wells is “M,” use of monitoring data for both non-PBT and PBT chemicals. To estimate quantities injected underground or on-site to Class I wells, the technical staff would perform the following steps:

13. Locate and review monitoring data for the facility, and then, for each monitoring event, identify the concentration of the specific chemical in the waste stream. The chemical concentrations from all monitoring events are then averaged. (35.00 min/25.00 min)
14. Either talk to operations staff, review production records and estimate waste generation, review well operations records, or review well permit data/required injection well reports to determine the total quantity of waste disposed via Class I wells for the reporting year. (30.00 min/30.00 min)
15. Multiply the total quantity of waste disposed via Class I wells by the average concentration of the specific chemical in the waste stream to calculate the total pounds of the chemical released to Class I wells during the reporting year. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.4.1.A of the Form R. (8.00 min/8.00 min)
16. Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.4.1.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.4.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	2.08	1.75

Technical	73.25	63.25
Total	75.33	65.00

Section 5.4.2: Underground Injection On-Site to Class II-V Wells

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (2.08 min/1.75 min)

The most commonly reported basis of estimate code for releases to underground injection Class II-V wells is “M,” use of monitoring data for both non-PBT and PBT chemicals. To estimate quantities injected underground or on-site to Class II-V wells, the technical staff would perform the following steps:

17. Locate and review monitoring data for the facility. Then, for each monitoring point, identify the concentration of the specific chemical in the waste stream. The chemical concentrations from all monitoring data points (events) are then averaged. (35.00 min/25.00 min)
18. Either talk to the operations staff, review production records and estimate waste generation, review well operations records, or review well permit data/required injection well reports to determine the total quantity of waste disposed via Class II-V wells for the reporting year. (30.00 min/30.00 min)
19. Multiply the total quantity of waste disposed via Class II-V wells by the average concentration of the specific chemical in the waste stream to calculate the total pounds of the chemical released to Class II-V wells during the reporting year,. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.4.2.A of the Form R. (8.00 min/8.00 min)
20. Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.4.2.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.4.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	2.08	1.75
Technical	73.25	63.25
Total	75.33	65.00

Section 5.5.1A: On-site Land Disposal via RCRA Subtitle C Landfills

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.08 min/1.75 min)

The most commonly reported basis of estimate code for releases to RCRA landfills is “O,” other approaches, for both non-PBT and PBT chemicals. It is assumed technical staff would track the generation and on-site disposal of these wastes as follows:

21. Identify all waste streams containing the chemical of interest disposed of in RCRA landfills. (30.00 min/5.00 min)
22. Review RCRA records (manifests and biennial reports) to determine the total quantity of waste disposed of in RCRA landfills for the reporting year; or talk to operations staff, review production records and estimate waste generation, or review on-site disposal tracking records. (30.00 min/30.00 min)
23. Review RCRA waste characterization data, talk to operations staff, review any non-RCRA waste characterization information, or review production/activity Standard Operating Procedures (SOPs) and process flow diagrams to determine the concentration of a specific chemical disposed of in a RCRA landfill. (30.00 min/25.00 min)
24. Multiply the total quantity of waste disposed of in RCRA landfills by the average concentration of the specific chemical in the waste stream to calculate the total pounds of the chemical disposed of in RCRA landfills during the reporting year,. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.5.1A.A of the Form R. (6.00 min/6.00 min)
25. Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.1A.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.5.1A

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.08	1.75
Technical	96.25	66.25
Total	99.33	68.00

Section 5.5.1B: On-site Land Disposal via Other Landfills

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.08 min/1.75 min)

The most commonly reported basis of estimate code for releases to on-site non-RCRA landfills is “O,” other approaches, for both non-PBT and PBT chemicals. It is assumed the technical staff would track the generation and on-site disposal of these wastes as follows:

26. Identify all waste streams containing the chemical of interest disposed of in on-site non-RCRA landfills. (30.00 min/5.00 min)
27. Talk to operations staff, review production records and estimate waste generation, or review on-site disposal tracking records to determine the total quantity of waste disposed of in non-RCRA landfills for the reporting year. (30.00 min/30.00 min)
28. Talk to operations staff, review any waste characterization information, or review production/activity SOPs and process flow diagrams to determine the concentration of a specific chemical disposed of in non-RCRA landfills. (30.00 min/25.00 min)
29. Multiply the total quantity of waste disposed via non-RCRA landfills by the average concentration of the specific chemical in the waste stream to calculate the total pounds of the chemical disposed of in non-RCRA landfills during the reporting year. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.5.1B.A of the Form R. (6.00 min/6.00 min)
30. Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.1B.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.5.1B

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.08	1.75
Technical	96.25	66.25
Total	99.33	68.00

Section 5.5.2: On-Site Land Disposal via Land Treatment/Application Farming

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (2.08 min/1.75 min for non-PBT filers; 3.08 min/1.75 min for PBT filers)

The most commonly reported basis of estimate code for releases via land treatment is “M,” use of monitoring data, for non-PBT chemicals. To estimate the quantity going to on-site land disposal via land treatment/application farming for non-PBT chemicals, the technical staff would perform the following steps:

31. Locate monitoring data and determine the chemical concentration in the waste stream for each monitoring point. Then calculate an average chemical concentrations across all monitoring data points (events). (35.00 min/ 25.00 min)
32. Talk to operations staff, review production records, and estimate waste generation, or review on-site disposal tracking records (i.e., the number of land applications multiplied by the average load size) to determine the total quantity of waste disposed via land treatment/application farming for the reporting year. (30.00 min/30.00 min)
33. Multiply the total quantity of waste disposed via land treatment by the average concentration of the specific chemical in the waste stream to calculate the total pounds of the chemical disposed of on-site for land treatment/application farming during the reporting year. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.5.2.A of the Form R. (8 min/8 min)
34. Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.2.B of the Form R. (0.25 min/0.25 min)

The most commonly reported basis of estimate code for releases via land treatment is “O,” other approaches, for PBT chemicals. To estimate the quantity going to on-site land disposal via land treatment/application farming for PBT chemicals, the technical staff would perform the following steps:

- Identify all waste streams disposed of via land treatment that contain the chemical of

interest. (30.00 min/5.00 min)

- Determining the total quantity of waste disposed of via land treatment for the reporting year requires the technical staff to either talk to operations staff, review production records and estimate waste generation, or review on-site disposal tracking records. (30.00 min/30.00 min)
- Talk to operations staff, review any waste characterization information, or review production/activity SOPs and process flow diagrams to generate chemical concentration estimates of a specific chemical disposed of via land treatment. (30.00 min/25.00 min)
- Multiply the total quantity of waste disposed via land treatment by the average concentration of the specific chemical in the waste stream to calculate the total pounds of the chemical disposed of via land treatment during the reporting year. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.5.2.A of the Form R. (6.00 min/6.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.2.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.5.2

Personnel Type	First Year Burden (minutes)		Subsequent Year Burden (minutes)	
	Non-PBT	PBT	Non-PBT	PBT
Management	2.08	3.08	1.75	1.75
Technical	73.25	96.25	63.25	66.25
Total	75.33	99.33	65.00	68.00

Section 5.5.3A: RCRA Subtitle C Surface Impoundments

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.08 min/1.75 min)

The most commonly reported basis of estimate code for releases via RCRA surface impoundments is “C,” mass balance, for both non-PBT and PBT chemicals. To estimate TRI chemical quantities sent to RCRA landfills, technical staff would track the loss of this chemical using a mass balance approach as follows:

- Identify all waste streams disposed of via RCRA Subtitle C surface impoundments that contain the chemical of interest. (30.00 min/5.00 min)

- Determine the total annual chemical usage quantity through a review of production records, a review of inventory records, or conversations with operations staff. (30.00 min/30.00 min)
- Estimate the quantity of the chemical that goes out with the product through a review of product QA/QC data or product specifications, or conversations with operations staff. (30.00 min/25.00 min)
- Subtract the quantity of the chemical in the product from the total chemical usage quantity to determine the total waste quantity via mass balance. If the total waste quantity is not disposed of via RCRA surface impoundment, the total waste quantity is multiplied by the percentage of waste going to RCRA surface impoundments. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.5.3A.A of the Form R. (6.00 min/6.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.3A.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.5.3A

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.08	1.75
Technical	96.25	66.25
Total	99.33	68.00

Section 5.5.3B: Other Surface Impoundments

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.08 min/1.75 min)

The most commonly reported basis of estimate code for releases via other surface impoundments is “C,” mass balance, for both non-PBT and PBT chemicals. To estimate TRI chemical quantities sent to other surface impoundments, technical staff would track the loss of this chemical using a mass balance approach as follows:

- Identify all waste streams disposed of via other surface impoundments that contain the chemical of interest through a review of process flow diagrams, conversations with operations staff, or a visual inspection of the process area. (30.00 min/5.00 min)
- Determine the total annual chemical usage quantity through a review of production records, a review of inventory records, or conversations with operations staff. (30.00 min/30.00 min)

min/30.00 min)

- Estimate the quantity of chemical that goes out with the product through a review of product QA/QC data or product specifications, or conversations with operations staff. (30.00 min/25.00 min)
- Subtract the quantity of the chemical in the product from the total chemical usage quantity to determine the total waste quantity via mass balance. If the total waste quantity is not disposed of via non-RCRA surface impoundment, the total waste quantity is multiplied by the percentage of waste going to non-RCRA surface impoundments. If needed, apply a conversion factor. Report the value (lb/yr) in Part II, Section 5.5.3B.A of the Form R. (6.00 min/6.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.3B.B of the Form R. (0.25 min/0.25 min)

Reporting Burden Associated with Part II, Section 5.5.3B

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.08	1.75
Technical	96.25	66.25
Total	99.33	68.00

Section 5.5.4: Other On-Site Land Disposal

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.08 min/0.91 min)

Other on-site land disposal can include intentional storage of wastes on land (other than in landfills, surface impounds or via land treatment/application farming), or unplanned releases to land from spills and accidents. Best engineering judgement indicates that reporting in this category is primarily due to unplanned releases from spills and accidents. While time estimates are provided for both scenarios, the time allotted to this data element for the overall Form R realistic burden estimate is from the unplanned release scenario only.

The most commonly reported basis of estimate code for other on-site land disposal is “O,” other approaches, for both non-PBT and PBT chemicals. It is assumed that the approach used by technical staff would be to track the generation and on-site disposal of these wastes as follows:

For planned other on-site disposal to land:

- Identify all waste streams disposed of via other land disposal that contain the chemical of interest. (30.00 min/5.00 min)
- Talk to operations staff, review production records and estimate waste generation, or review on-site disposal tracking records to determine the total quantity of waste disposed of via other land disposal for the reporting year. (30.00 min/30.00 min)
- Talk to operations staff, review any waste characterization information, or review production/activity SOPs and process flow diagrams to generate chemical concentration estimates of a specific chemical disposed of via other land disposal. (30.00 min/25.00 min)
- For planned releases, multiply the total quantity of waste disposed via surface impoundment by the average concentration of the specific chemical in the waste stream to calculate the total release pounds of the chemical disposed of via other land disposal during the reporting year. If needed, apply a conversion factor. (6.00 min/6.00 min)

For unplanned other on-site disposal to land:

- For unplanned releases, determine the total quantity of the chemical released to land during unplanned events, such as spills and accidents, by either reviewing spill reports, contacting spill responders, or conducting a mass balance estimate based upon the quantity of materials in storage tanks before and after the event. Report the value (lb/yr) in Part II, Section 5.5.4.A of the Form R. (35.00 min/35.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 5.5.4.B of the Form R. (0.25 min/0.25 min)

Best engineering judgment indicates that most reporting in this section will come from unplanned (accidental) releases. As such, the following table only provides time estimates relevant to the reporting of these releases.

Reporting Burden Associated with Part II, Section 5.5.4

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.08	0.91
Technical	35.25	35.25
Total	36.33	36.16

Section 6.1: Discharges to Publicly Owned Treatment Works

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (3.58 min/2.25 min)

The most commonly reported basis of estimate code for discharges to POTWs is “M,” use of monitoring data, for both non-PBTs and PBTs. To estimate the total quantity of a TRI chemical discharged to a POTW, technical staff would perform the following steps:

- Locate and review monitoring data in order to identify the necessary chemical concentration information. The monitoring data could be obtained by either reviewing internal files or speaking directly with the pre-treatment coordinator at the POTW. (35.00 min/25.00 min)
- Review flow meter data to locate flow rate data. If flow meter data are not available, technical staff estimate the quantity of wastewater generated by reviewing water usage data. This quantity is then divided by usage time (e.g., days) in order to calculate the estimated flow. Alternatively, technical staff might request flow rate data directly from the POTW. (15.00 min/10.00 min)
- Talk with operations staff or contact the POTW to determine the number of days wastewater was sent to the POTW. (15.00 min/15.00 min)
- Multiply the identified chemical concentration (for one monitoring data point) by the daily water flow rate to calculate the total mass of the chemical transferred to the POTW on a daily basis. If needed, locate a conversion factor in order to report the final result in units of pounds per day. Repeat the above steps for every monitoring result, then average together all of the results. Multiply the pound per day release value by the total number of discharge days per year to calculate the total annual transfers to POTWs in pounds. Report the value (lb/yr) in Part II, Section 6.1.A.1 of the Form R. (8.00 min/8.00 min)
- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Part II, Section 6.1.A.2 of the Form R. (0.25 min/0.25 min)

An analysis of the RY 2002 showed that an average of one POTW per Form R was listed for both non-PBT and PBT chemicals. For subsequent year reporting, it is assumed the facility will be using the same POTW.

- Technical staff will have the POTW name and location information readily available from document review conducted for the release estimate. Technical staff will report this information in Part II, Section 6.1.B.1 of the Form R. (1.50 min/0 min)

Reporting Burden Associated with Part II, Section 6.1

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	3.58	2.25
Technical	74.75	58.25
Total	78.33	60.50

Section 6.2: Transfers to Other Off-Site Locations

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (4.83 min/3.42 min)

The most commonly reported basis of estimate code for transfers to other off-site locations is “O,” other approaches, for both non-PBT and PBT chemicals. It is assumed that the approach used by technical staff would be to track the off-site transfer of these wastes primarily using waste characterization and waste transfer documentation as outlined below:

- Identify all off-site transfers of unique waste streams containing the chemical of interest. (30.00 min/ 5.00 min)
- For the first unique waste stream, determine the concentration of the chemical in the stream by either reviewing waste characterization profiles, contacting the facility’s hazardous waste shipper to obtain their waste characterization information, or conducting a mass balance evaluation. (30.00 min/30.00 min)
- Determine the total quantity of the first unique waste stream that the facility ships off-site during the reporting year by reviewing hazardous waste manifests, invoices from waste vendors, or talking to operations staff. (30.00 min/30.00 min)
- For the first waste stream, multiply the chemical concentration by the total quantity of waste shipped off-site to calculate the total quantity of the chemical shipped off-site for the year. If needed, multiply by a conversion factor to obtain a final result in pounds. (6.00 min/6.00 min)

An analysis of RY 2002 TRI data indicates that there was an average of approximately two off-site transfer locations and an average of approximately two reported “M” codes. Therefore, it is assumed that on average, two unique waste streams are being transferred off-site. There are economies of scale in estimating the quantity of the TRI chemical in the second waste stream due to the concurrent activities of reviewing the same sources to determine the chemical concentration in the waste and to estimate the annual quantity of waste transferred off-site. To estimate the additional time needed to quantify the off-site transfer of the second waste stream technical staff would perform the following:

- For the second waste stream, determine the concentration of the chemical in the stream by either reviewing waste characterization profiles, contacting the facility's hazardous waste shipper to obtain their waste characterization information, or conducting a mass balance evaluation. Determine the total quantity of each unique waste stream that the facility ships off-site during the reporting year. (5.00 min/5.00 min)
- For the second waste stream, multiply the chemical concentration by the total quantity of waste shipped off-site to calculate the total quantity of the chemical shipped off-site for the year. If needed, multiply by a conversion factor to obtain a final result in pounds. Calculate the total quantity of the chemical shipped off-site for all waste streams by summing together the annual quantity of the chemical shipped off-site in each waste stream. Report this result (lb/yr) in Part II, Section 6.2.A of the Form R. (6.00 min/6.00 min)

For both waste streams, technical staff would perform the following steps:

- Report whether the release estimate was based on monitoring data, mass balance, published emission factor, or other engineering calculations by recording the code M, C, E, or O, respectively, in Section 6.2.B of the Form R. (0.25 min/0.25 min)
- Report the type of waste treatment/disposal/recycling/energy recovery code by recording the appropriate M-code in Section 6.2.C of the Form R. (0.25 min/0.25 min)

As indicated above, an analysis of RY 2002 TRI data showed that for off-site transfers, there was an average of approximately two off-site transfer locations. For subsequent year reporting, it is assumed the facility will not necessarily use the same off-site transfer locations. Due to the competitive nature of the hazardous waste removal industry, market fluctuations, the search for better pricing, and the fact that facilities can readily change vendors (unlike piping changes needed to use a different POTW, for example), it is possible that facilities may be using different off-site transfer locations from year-to-year. For this reason, it is not assumed that only one off-site transfer facility name and location will be pre-populated from loading last year's forms, and typing time is allotted to enter the second off-site transfer name and location information.

- Technical staff will have the off-site transfer name and location information readily available from document review conducted for the release estimate and will report this information in Part II, Section 6.2.1 and 6.2.2 of the Form R. (4.17 min/2.08 min)

Reporting Burden Associated with Part II, Section 6.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	4.83	3.42
Technical	112.17	84.58
Total	117.00	88.00

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

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (5.17 min/3.50min)

To complete Section 7A, technical staff perform the following steps:

- Review process diagrams, review air or NPDES permits, or talk to the operations staff to identify any on-site waste treatment activities. For the first waste stream, technical staff perform the following steps:
 - Identify the type of waste stream (gaseous, wastewater, liquid waste, or solid waste) and report the appropriate code in Part II, Section 7A.1a. (10.00 min/5.00 min)
 - Identify all of the treatment steps this waste stream passes through and the order of occurrence. Locate the appropriate treatment codes representing the treatment activity in the TRI Reporting Forms and Instructions and report them in the actual order of occurrence in Part II, Section 7A.1b of the Form R.. (20.00 min/5.00 min)
- Locate and review monitoring data, or talk with operations staff to determine the range of influent concentration. Report the appropriate range code for this concentration in Part II, Section 7A.1.c of the Form R. (30.00 min/15.00 min)
- Technical staff apply one of the approaches listed below to quantify the treatment efficiency:
 - Review equipment manuals for manufacturer reported efficiencies.
 - Use pre- and post-treatment analytical data to calculate treatment efficiency by subtracting the post-treatment chemical concentration from the pre-treatment chemical concentration and then divide the result by the pre-treatment chemical concentration.
 - Technical staff can also obtain the information by talking to operations staff.

- Report the treatment efficiency in Part II, Section 7A.1.d of the Form R (15.00 min/5.00 min).
- Report whether the efficiency was calculated using monitoring data by checking yes or no in Part II, Section 7A.1e of the Form R. (0.08 min/0.08 min)

An analysis of RY 2002 TRI data indicates that there was an average of approximately two waste streams listed under on-site treatment in Section 7A. The additional steps technical staff would take in identifying and reporting on-site treatment activities are outlined below. There are some economies of scale in identifying on-site treatment activities for the second waste stream as a full facility operations review was conducted as part of identifying if there are any waste streams undergoing on-site treatment.

- No additional time would be needed to identify types of waste streams undergoing on-site treatment as the necessary review was already conducted to identify the first waste stream. Therefore, no additional time is needed in Part II, Section 7A.2a for the second waste stream (0.00min/0.00min).
- Only incremental additional time would be needed to identify waste treatment activity steps for the second waste stream as document review and discussions with operations staff were already conducted to identify steps for the first waste stream. Therefore, the following additional time is needed in Part II, Section 7A.2b for the second waste stream (5.00min/2.00min).
- Determining the range of the influent concentration for the second waste stream would require the same time effort as for the first waste stream because technical staff would be reviewing a different set of information, such as different laboratory reports. Therefore, the following additional time is needed in Part II, Section 7A.2c for the second waste stream (30.00min/15.00min).
- Determining the treatment efficiency for the second waste stream would require the same time effort as for the first waste stream because technical staff would be reviewing a different set of information, such as different equipment manuals. Therefore, the following additional time is needed in Part II, Section 7A.2d for the second waste stream (15.00min/5.00min).
- Report whether the efficiency for the second waste stream was calculated using monitoring data by checking yes or no in Part II, Section 7A.2e of the Form R., (0.08 min/0.08 min)

Reporting Burden Associated with Part II, Section 7A

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	5.17	3.50
Technical	125.16	52.16
Total	130.33	55.66

Section 7B: On-Site Energy Recovery Processes

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.0 min/0.83 min)

It is assumed that technical staff either review process flow diagrams or talk to operations staff in order to identify any on-site energy recovery activities. For each waste stream that is undergoing treatment for on-site energy recovery, technical staff locate the appropriate code for the activity in the TRI Reporting Forms and Instructions. The codes are reported in descending order by quantity of energy recycled in Part II, Section 7B of the Form R. (32.00 min/24.00 min)

Reporting Burden Associated with Part II, Section 7B

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.00	0.83
Technical	32.00	24.00
Total	33.00	24.83

Section 7C: On-Site Recycling Processes

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.0 min/0.83 min)

It is assumed that technical staff either review process flow diagrams or talk to operations staff in order to identify any on-site recycling activities. For each waste stream that is undergoing treatment for on-site recycling, technical staff locate the appropriate code for the activity in the TRI Reporting Forms and Instructions. The codes are reported in descending order by quantity of waste recycled in Part II, Section 7C of the Form R. (38.00 min/27.00 min)

Reporting Burden Associated with Part II, Section 7C

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.00	0.83
Technical	38.00	27.00
Total	39.00	27.83

Section 8.1a: Total On-Site Disposal to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.1a, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.1a, Column A of the Form R. (0.25 min/0.25 min)
- Column B: Sum together the quantities calculated in Part II, Sections 5.4.1, 5.5.1A, and 5.5.1B and then subtract any on-site release or disposal quantities due to catastrophic events. Report the total quantity disposed of on-site via Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills in Part II, Section 8.1a, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.1a, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.1a, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.1a

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.50	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.1b: Total Other On-Site Disposal or Other Releases

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.1b, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.1b, Column A of the Form R. (0.25 min/0.25 min)
- Column B: Sum together the quantities calculated in Part II, Sections 5.1, 5.2, 5.3, 5.4.2, 5.5.2, 5.5.3A, 5.5.3B, and 5.5.4 and then subtract any on-site release or disposal quantities due to catastrophic events. Report the total quantity disposed of on-site via other disposal or other releases in Part II, Section 8.1b, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.1b, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.1b, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.1b

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.5	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.1c: Total Off-Site Disposal to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.1c, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.1c, Column A of the Form R. (0.25 min/0.25 min)
- Column B: Sum together the quantities calculated in Part II, Sections 6.1 (portion of transfer that is untreated and ultimately disposed of in UIC Class I Wells, RCRA Subtitle C landfills and other landfills) and 6.2 (quantities associated with M codes M64, M65, and M81) and then subtract any off-site disposal quantities due to catastrophic events. Report the total quantity disposed of off-site via Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills in Part II, Section 8.1c, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.1c, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.1c, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.1c

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.5	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.1d: Total Other Off-Site Disposal or Other Releases

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.1d, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.1d, Column A of the Form R. (0.25 min/0.25 min)
- Column B: Sum together the quantities calculated in Part II, Sections 6.1 (portion of transfer that is untreated and ultimately disposed of in UIC Class II-V Wells, and land disposal other than to landfills) and 6.2 (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, and M99) and then subtract any off-site disposal quantities due to catastrophic events. Report the total quantity disposed of off-site via other disposal or other releases in Part II, Section 8.1d, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.1d, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.1d, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.1d

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.50	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.2: Quantity Used for Energy Recovery On-Site

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.25 min/1.08 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.2, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.2, Column A of the Form R. (0.25 min/0.25 min)
- Column B: To estimate the quantity of the chemical used annually for actual energy recovery on-site, refer to the recovery processes reported in Section 7B and either review operations records or speak with operations staff. Report the total quantity used for energy recovery on-site in Part II, Section 8.2, Column B of the Form R. (30.00 min/30.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.2, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.2, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.2

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.25	1.08
Technical	32.25	32.25
Total	33.50	33.33

Section 8.3: Quantity Used for Energy Recovery Off-Site

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading of this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.3, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.3, Column A of the Form R. (0.25 min/0.25 min)
- Column B: To estimate the quantity of the chemical used annually for energy recovery off-site, subtract Section 8.8 (off-site energy recovery due to catastrophic events) from Section 6.2 (quantities associated with energy recovery) and report the value in Part II, Section 8.3, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.3, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.3, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.3

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.5	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.4: Quantity Recycled On-Site

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.25 min/1.08 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.4, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.4, Column A of the Form R. (0.25 min/0.25 min)
- Column B: Estimate the quantity of the chemical actually recycled on-site annually by reviewing the information identified for Section 7C and either review operations records or speak with operations staff. Report the total quantity recycled on-site in Part II, Section 8.4, Column B of the Form R. (30.00 min/30.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.4, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.4, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.4

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.25	1.08
Technical	32.25	32.25
Total	33.50	33.33

Section 8.5: Quantity Recycled Off-Site

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.5, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.5, Column A of the Form R. (0.25 min/0.25 min)
- Column B: To estimate the quantity of the chemical recycled annually off-site, subtract Section 8.8 (off-site recycling due to catastrophic events) from Section 6.2 (quantities associated with recycling) and report the value in Part II, Section 8.5, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.5, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.5, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.5

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.5	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.6: Quantity Treated On-Site

Management burden includes review of data, methods, and assumptions used to develop the estimate. In some cases it also includes data quality activities such as comparing the values with previous years. (1.25 min/1.08 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.6, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.6, Column A of the Form R. (0.25 min/0.25 min)
- Column B: Estimate the quantity of the chemical actually treated on-site annually by reviewing the information identified for Section 7A and either review operations records or speak with operations staff. The total quantity treated on-site is reported in Part II, Section 8.6, Column B of the Form R. (30.00 min/30.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.6, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.6, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.6

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.25	1.08
Technical	32.25	32.25
Total	33.50	33.33

Section 8.7: Quantity Treated Off-Site

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.50 min/0.50 min)

Four columns must be completed in this section, requiring technical staff to perform the following steps:

- Column A: Record "NA" in Part II, Section 8.7, Column A of the Form R if the facility is a first time filer. For subsequent reporting years, locate the release estimate from the "Column B, Current Reporting Year" column from the previous year's form and record this quantity in Part II, Section 8.7, Column A of the Form R. (0.25 min/0.25 min)
- Column B: To estimate the quantity of the chemical treated off-site, sum together the quantities from Section 6.1 (excluding most metal/metal category compounds) and Section 6.2 (the quantities associated with treatment) and then subtract any portion of Section 8.8 associated with off-site treatment due to catastrophic events. Report the total quantity treated off-site in Part II, Section 8.7, Column B of the Form R. (5.00 min/5.00 min)
- Column C: Make the best projection for the following year's release quantity and record it in Part II, Section 8.7, Column C of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the following year. If source reduction activities are planned, make the best estimate for how much this will reduce the release quantity for the following year. (1.00 min/1.00 min)
- Column D: Make the best projection for the second following year's release quantity and record it in Part II, Section 8.7, Column D of the Form R. If no source reduction activities are planned, multiply the current year release estimate by the expected percentage change in production for the second following year. If source reduction activities are planned, make the best estimate of how much this will reduce the release quantity for the second following year. (1.00 min/1.00 min)

Reporting Burden Associated with Part II, Section 8.7

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.50	0.50
Technical	7.25	7.25
Total	7.75	7.75

Section 8.8: Quantity released to the Environment as a Result of Remedial Actions, Catastrophic Events, or One-Time Events not Associated with Production Processes

Management burden includes an assessment of whether quantities previously calculated for Sections 5 and 6 have been recorded in the correct subsection of Section 8 as well as proofreading this section as part of an overall review of the Form R. (0.25 min/0.25 min)

Technical staff sum together the relevant quantities already estimated and record them in Part II, Section 8.8, Column B of the Form R. (5.00 min/5.00 min)

Reporting Burden Associated with Part II, Section 8.8

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.25	0.25
Technical	5.00	5.00
Total	5.25	5.25

Section 8.9: Production Ratio or Activity Index

Management burden includes review of data, methods, and assumptions used to develop the production ratio; and in some cases, data quality activities such as comparing the values with previous years. (0.83 min/0.83 min)

Technical staff would perform the following steps to calculate the production ratio or activity index:

- Determine the annual production or activity level for the reporting year by either reviewing production records or maintenance logs, or talking with the operations staff. (30.00 min/30.00 min)
- Determine the annual production or activity level for the previous year by reviewing maintenance records or talking with operations staff. (5.00 min/5.00 min)
- Divide the current year's production or activity level by the prior year's production or activity level. Alternatively, review the waste minimization section of the RCRA report.

Report the production ratio or activity index in Part II, Section 8.9 of the Form R. (1.00 min/1.00 min)

For facilities reporting for the first year, a production ratio is required if the facility manufactured, processed or otherwise used the TRI chemical in the previous year, even if no thresholds were exceeded. While some first year reports will be for completely new operations, others will be for facilities that have exceeded threshold for the first time. For this reason, it was assumed that calculation of the production ratio would be required for first year reports.

Reporting Burden Associated with Part II, Section 8.9

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0.83	0.83
Technical	36.00	36.00
Total	36.83	36.83

Section 8.10: Did Your Facility Engage in any Source Reduction Activities?

Management burden includes review of data and methods used to identify source reduction activities. (1.08 min/0.92 min)

To identify whether or not any source reduction activities were implemented, technical staff either review SOPs; review any process, equipment, or material input changes; review the waste minimization section of the RCRA report; or talk with operations staff. If source reduction activities were implemented, technical staff locate the source reduction codes in the Reporting Forms and Instructions and enter the codes in Section 8.10.1 of the Form R. Technical staff enter the appropriate codes for Methods to Identify Activity in Section 8.10.1.a. (35.25 min/35.25 min)

Reporting Burden Associated with Part II, Section 8.10

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	1.08	0.92
Technical	35.25	35.25
Total	36.33	36.17

Section 8.11: Is Additional Information on Source Reduction, Recycling or Pollution Control Activities Included with this Report?

Provision of additional information on source reduction, recycling, or pollution control activities is optional; therefore, there is no management, technical, nor clerical burden associated with this element of the Form R.

Reporting Burden Associated with Part II, Section 8.11

Personnel Type	First Year Burden (minutes)	Subsequent Year Burden (minutes)
Management	0	0.00
Technical	0	0.00
Total	0.00	0.00

2.1.B. Results for Electronic Submission

Table 4 summarizes the total reporting burden associated with electronic submissions of PBT and non-PBT forms. Tables 5 and 6 present the realistic and incidence weighted reporting burden for every data element on the Form R for first year electronic submissions of PBT and non-PBT reports. Tables 7 and 8 present the realistic and incidence weighted reporting burden for every data element on the Form R for subsequent year electronic submissions of PBT and non-PBT reports.

**TABLE 4
TOTAL REPORTING BURDEN FOR ELECTRONIC SUBMISSIONS**

	Estimated realistic time per form (hr)			Incidence weighted time per form (hr)		
	Management	Technical	Total	Management	Technical	Total
First year						
PBT	0.99	29.51	30.50	0.34	9.20	9.54
Non-PBT	0.98	29.38	30.36	0.37	10.49	10.86
Subsequent years						
PBT	0.77	20.98	21.75	0.29	6.17	6.46
Non-PBT	0.77	20.97	21.74	0.32	6.89	7.21

2.1.C. Methodology for Paper Submission

The only difference between electronic and paper submissions for first year and subsequent year Form R reporting burden is clerical time. To generate a paper copy, clerical staff would take the information prepared by the technical staff and type it onto a paper copy of the Form R. Therefore, for both PBT and non-PBT chemicals, clerical times were estimated by dividing the currently approved OMB clerical times (Table 1) by the total number of fields on the Form R. While it may not take the exact same amount of time to line up each data element for typing, there is no reasonable way to estimate this, so giving equal time to each element was determined to be the best method. The clerical time allotted to each element was then added to the estimate for the electronic form (including management and technical time) for that element to generate time estimates for every data element for PBT and non-PBT first and subsequent year reporting via a paper Form R.

2.1.D. Results for Paper Submission

Table 9 summarizes the total reporting burden for paper submission of PBT and non-PBT forms. Tables 10 and 11 present the realistic and incidence weighted reporting burden for every data element on the Form R for first year paper submissions of PBT and non-PBT reports. Tables 12 and 13 present the realistic and incidence weighted reporting burden for every data element on the Form R for subsequent year paper submissions of PBT and non-PBT reports.

**TABLE 9
TOTAL REPORTING BURDEN FOR PAPER SUBMISSIONS**

	Estimated realistic time per form (hr)				Incidence weighted time per form (hr)			
	Management	Technical	Clerical	Total	Management	Technical	Clerical	Total
First year								
PBT	1.01	29.51	2.90	33.42	0.35	9.20	1.59	11.14
Non-PBT	0.99	29.38	1.62	31.99	0.38	10.49	0.93	11.80
Subsequent years								
PBT	0.78	21.17	2.00	23.95	0.30	6.33	1.10	7.73
Non-PBT	0.78	21.17	1.10	23.05	0.33	7.05	0.63	8.01

3. SCALED REPORTING BURDEN ESTIMATES

3.1 Scaled Estimate for PBT Chemicals

In this section, the realistic technical reporting burden estimates developed for PBT chemicals are used in combination with the currently-approved OMB form completion reporting burden estimates to generate burden estimates for each data element consistent with the OMB total. Four individual reporting burden scenarios are scaled up: first year electronic, subsequent year electronic, first year paper, and subsequent year paper. The incidence weighted values are not used for PBT chemicals because the OMB burden estimate assumes all Form R fields are filled out by all reporters.

3.1.A. Methodology for Scaled PBT Chemical Electronic Submissions

The OMB-approved form completion burden estimates for PBT first and subsequent year technical burden are 45.2 and 30.8 hours, respectively. The following procedure was used to scale the realistic electronic PBT data element burden estimates to these OMB-approved burden estimates. Reporting burden is estimated for both first and subsequent years.

- Technical reporting burden for data elements requiring only typing or typing plus a quick information look-up (such as locating the facility's D&B number) was estimated (86.25 min, 13.42 min). The times for these steps were assumed static and, therefore, were not scaled up.
- Total static time was subtracted from both the OMB approved technical burden (2712.0 min, 1848.0 min) and the total realistic technical burden (1770.32 min, 1258.51 min) to estimate the total OMB (2625.75 min, 1834.58 min) and realistic (1684.07 min, 1245.09 min) times for those Form R data elements that require more complex information gathering and calculations.
- The OMB approved technical burden for nonstatic data elements was divided by the PBT realistic burden for nonstatic data elements (i.e., 2625.75/1770.32; 1834.58/1258.71) to calculate a scaling factor (1.56, 1.47). (Note that the PBT realistic estimates used here were not incidence-weighted, as the OMB assumption for the current estimate for PBT chemicals is that all data elements are completed).
- The scaling factor was applied to all of the nonstatic realistic data element burden estimates.
- Realistic management burden estimates were generated by multiplying the scaled up realistic technical burdens by the 20.9/45.2 or 14.3/30.8 hr ratio of management to technical burden in the current OMB-approved burden estimate for first and subsequent year reporting for PBT chemicals, respectively.
- Scaled up management and technical times were added together for each data element to estimate a total time for that data element.

3.1.B. Results for PBT Chemical Electronic Submissions

Table 14 presents scaled management and technical burden estimates for completing each data element of the Form R for first and subsequent year electronic submissions of PBT reports.

3.1.C. Methodology for PBT Chemical Paper Submissions

The only difference between electronic and paper submission for Form R reporting burden is the clerical time needed for typing. To generate a paper copy, clerical staff would take the information prepared by the technical staff and type it onto a paper copy of the Form R. The time required to type information into one data element on the Form R was considered to be static and unrelated to the relative degree of difficulty in determining the information to be entered into the field. For this reason, clerical time was not determined by scaling from the realistic estimates generated for technical time. Instead, clerical times were estimated by dividing the currently approved OMB clerical burden (Table 1) for PBT chemical submission by the total number of data elements on the Form R.

While it may not take the exact same amount of time to line up each data element for typing, there is no reasonable way to estimate this, so giving equal time to each element was determined to be the best method. The clerical time allotted to each element was then added to the estimate for the electronic form (including management and technical time) for that element to generate scaled time estimates for every data element for PBT first and subsequent year reporting via a paper Form R.

3.1.D. Results for PBT Chemical Paper Submission

Table 15 presents scaled management, technical, and clerical burden estimates for completing each data element of the Form R for first and subsequent year submissions of paper PBT chemical reports.

3.2 Scaled Estimate for non-PBT Chemicals

In this section, the realistic technical reporting burden estimates developed for non-PBT chemicals are used in combination with the currently-approved OMB form completion reporting burden estimates to generate burden estimates for each data element consistent with the OMB total. Four individual reporting burden scenarios are scaled up: first year electronic, subsequent year electronic, first year paper, and subsequent year paper. The incidence weighted values are used for non-PBT chemicals because the OMB burden estimates for non-PBT chemicals are based on actual reporting burden data from facilities.

3.2.A. Methodology for non-PBT Chemical Electronic Submissions

The OMB-approved form completion burden estimate for non-PBT subsequent year technical burden is 16.4 hours. A first-year estimate for non-PBT technical burden of 24.1 hours was estimated by multiplying the subsequent year estimate by 147 percent.¹ The following procedure was used to scale the realistic electronic non-PBT burden estimates to these OMB-approved burden estimates. Reporting burden is estimated for both first and subsequent years.

- Technical reporting burden for data elements requiring only typing or typing plus a quick information look-up (such as locating the facility's D&B number) was estimated (59.0 min, 6.4min). The times for these steps were assumed static and, therefore, were not scaled up.
- Total static time was subtracted from both the OMB approved technical burden (1446.48

¹An OMB-approved estimate for first time non-PBT filers does not exist; however, the RIA for the original Section 313 rulemaking estimated the time required to complete a report in the first year to be 147% of the time required in subsequent years. This factor was applied to the OMB approved subsequent year non-PBT report completion times to calculate the first year non-PBT completion times. (U.S. EPA Regulatory Impact Analysis in Support of Final Rulemaking under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (1988).

min, 984.0 min) and the total incidence-weighted realistic technical burden (629.49 min, 413.18 min) to estimate the total OMB (1387.48 min, 977.60 min) and realistic (570.49 min, 406.79 min) times for those Form R data elements that require more complex information gathering and calculations.

- The OMB approved technical burden for nonstatic data elements was divided by the non-PBT realistic burden for nonstatic data elements (i.e., 1387.48/570.49; 977.60/406.79) to calculate a scaling factor (2.43, 2.40).
- The scaling factor was applied to all of the nonstatic realistic data element burden estimates.
- Realistic management burdens were generated by multiplying the scaled up realistic technical burdens by the 11.3/24.1 or 7.7/16.4 hr ratio of management to technical burden in the current OMB-approved burden estimate for first and subsequent non-PBT chemicals, respectively.
- Scaled up management and technical times were added together for each data element to estimate a total time for that data element.

3.2.B. Results for non-PBT Chemical Electronic Submissions

Table 16 presents scaled management and technical burden estimates for completing each field of the Form R for first and subsequent year electronic submissions of non-PBT reports.

3.2.C. Methodology for non-PBT Chemical Paper Submissions

The only difference between electronic and paper submission for Form R reporting burden is the clerical time needed for typing. To generate a paper copy, clerical staff would take the information prepared by the technical staff and type it onto a paper copy of the Form R. The time required to type information into one data element on the Form R was considered to be static and unrelated to the relative degree of difficulty in determining the information to be entered into the field. For this reason, clerical time was not determined by scaling from the realistic estimates generated for technical time. Instead, clerical times were estimated by dividing the currently approved OMB clerical burden (Table 1) for non-PBT chemicals by the total number of fields on the Form R.

While it may not take the exact same amount of time to line up each data element for typing, there is no reasonable way to estimate this, so giving equal time to each element was determined to be the best method. The clerical time allotted to each element was then added to the estimate for the electronic form (including management and technical time) for that element to generate time estimates for every data element for non-PBT first and subsequent year reporting via a paper Form R.

3.2.D. Results for non-PBT Chemical Paper Submissions

Table 17 presents realistic management, technical, and clerical burden estimates for completing each data element of the Form R for first and subsequent year paper submissions of non-PBT reports.