# TRI Data Quality Activities
## -- An Overview

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Toxics Release Inventory Program

# Best Readily Available Information

- Use readily available data (including monitoring data) collected pursuant to other provisions of law

- Where such data are not readily available, use reasonable estimates

- If available data known to be non-representative, facilities must make reasonable estimates using the best readily available information

- Base reasonable estimates using published emission factors, material balance calculations, or engineering calculations

- Do not use emission factors or calculations if more accurate data available

- TRI does not require additional monitoring or measurement beyond what other laws/regulations require or are part of routine plant operations

- What is readily available can change over time (e.g., new information)


- **Recommendation:** Carefully document decision making used (e.g., assumptions & calculations)
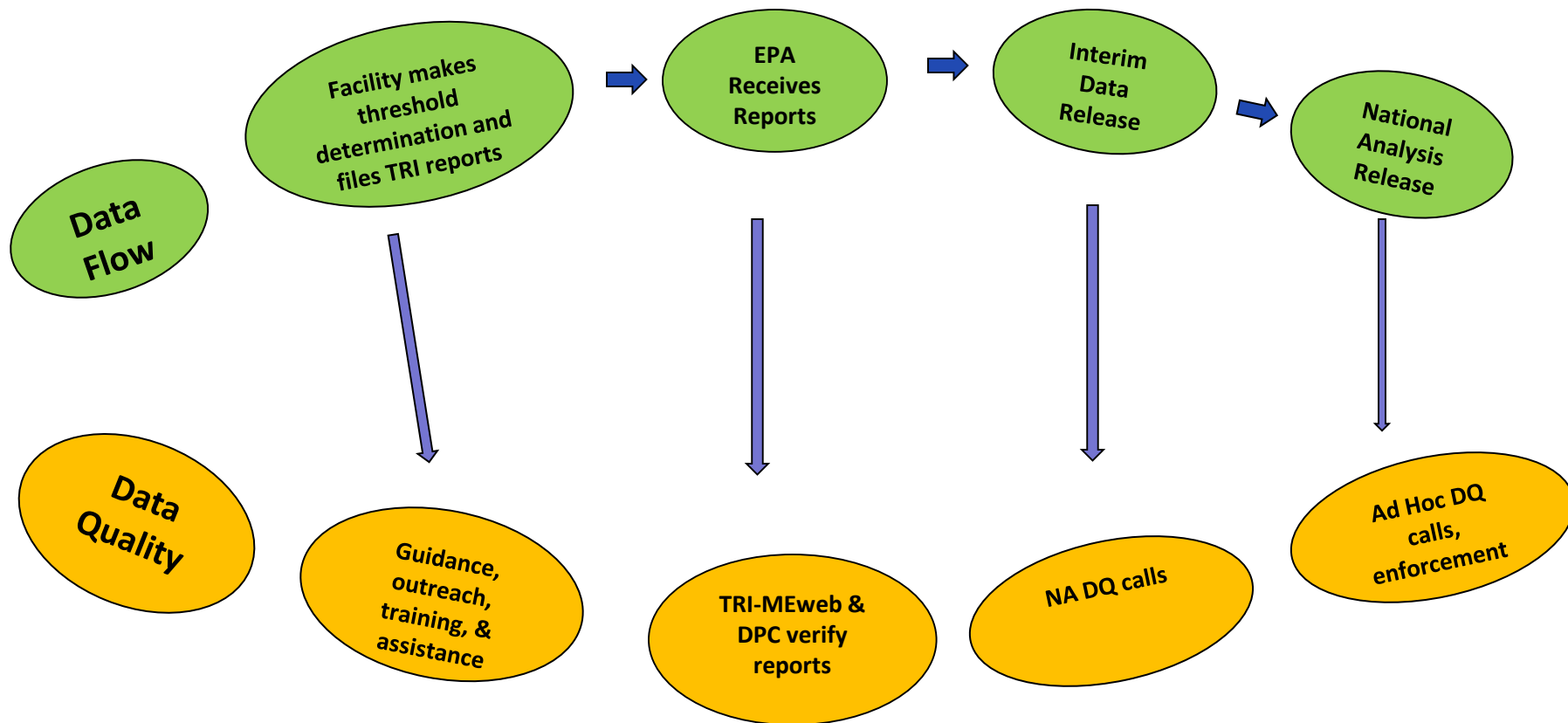
# How Does EPA Help to Ensure the Quality of TRI Data?

- TRI data quality efforts – year-around
- Guidance, outreach, training, assistance
- TRI-MEweb, Data Processing Center
- Electronic Facility data profiles
- Data quality calls
- Enforcement

# TRI Reporting Data Flow and Data Quality Activities

**Data Flow**

Facility makes threshold determination and files TRI reports → EPA Receives Reports → Interim Data Release → National Analysis Release

**Data Quality**

Guidance, outreach, training, & assistance

TRI-MEweb & DPC verify reports

NA DQ calls

Ad Hoc DQ calls, enforcement

CDX - Central Data Exchange    DQ - Data Quality    DPC - Data Processing Center    NA - National Analysis
TRI - Toxics Release Inventory    TRI-MEweb – Toxics Release Inventory Made Easy Web

# TRI Guidance

- Guidance
  - General
    - Reporting Forms and Instructions
  - Chemical Specific
  - Industry Specific
  - Questions & answers
  - Guide Me

# Training, Assistance and Outreach

- Online training
    - Basic
    - Advanced
- Classroom training
    - Some regions
    - Private parties
- TRI Assistance
    - Call center
    - Regional and HQ staff

# TRI ME web, TRI DPC, eFDP

- TRI ME web
- TRI DPC
- eFDP

# Why Data Quality Calls?

- Conduct Data Quality Calls bi-annually – Summer & Winter

  - National Analysis Data Quality Calls in Summer: focused on National Analysis

  - Ad Hoc Data Quality Calls in Winter: focused on specific issues

- Benefits of Data Quality Calls

  - Assures higher-quality National Analysis dataset

  - Delve directly into specific data quality issues

  - Identify enhancements for TRI-MEweb

  - Compare TRI data to other EPA datasets

# Analyses for Data Quality Calls

- Engineering Analysis
  - Industry-Specific
  - Chemical-Specific

- Increasers / Decreasers Analysis

- Other Data Quality Issues
  - Persistent Bioaccumulative Toxic (PBT) Chemicals
  - HAPs, Carcinogens, RSEI
  - TRI-MEweb Certification Issues, P2 issues

- Comparison of TRI Data with Other EPA & Non-EPA Data
  - National Emissions Inventory (NEI)
  - Discharge Monitoring Reports (DMR)
  - Chemical Data Reports (CDR)
  - Biennial Reporting System (BRS)
  - Risk Management Program (RMP)
  - Tier II Reports

# NEI Data

- Office of Air and Radiation (OAR) releases National Emissions Inventory (NEI) data once every 3 years

  - Hazardous air pollutants (HAPs) from industrial facilities

  - Use data from states, TRI and facilities' test data

  - Most of the HAPs are also listed on TRI chemical list

- *Hypothesis*: Certain facilities that report to NEI are also expected to report to TRI

  - Many TRI sectors are also covered in NEI

  - TRI listed HAPs

# Comparison of NEI-TRI Air Releases

- Downloaded NEI data from Emissions Inventory System (EIA) Portal

- Adjusted NEI and TRI CAS numbers

- Combined EIS-TRI crosswalk table with updated information

- Identified facilities with significant variations of air release values between TRI and NEI

# CDR Data

- Office of Chemical Safety and Pollution Prevention (OCSPP) collects chemical data reports (CDR) from manufacturing facilities

  – Manufacturing volumes, number of employees and other information

  – 5015 individually listed chemicals on TSCA Inventory

  – Approximately 770 chemicals reported to CDR

  – Overlaps with 271 TRI chemicals and chemical categories

- *Hypothesis*: Certain facilities that report to CDR are expected to report to TRI

  – Chemical manufacturing industry sectors

  – TRI listed chemicals

  – Exceeds employee threshold

# DMR Data

- Office of Waste Management (OWM) issues NPDES permits

- Facilities submit Discharge Monitoring Reports (DMRs) to states and EPA works with states to populate that data in ICIS-NPDES

  - Reporting frequency varies as specified in permits

- DMR tool pulls information from NPDES database

- *Hypothesis*: Certain facilities with NPDES permits are expected to report to TRI

  - Covered industry sector

  - TRI listed chemicals

  - Exceeds activity threshold amounts

# TRI-Tier 2 Comparison-1

**Background on Tier 2 and TRI**

- States maintain Tier 2 Reports
- Several TRI Chemicals are reported under Tier 2 Reporting
- What is Included in this Analysis?
  - Approximately **25 states**

**R1:** CT, MA, NH, VT, ME, & RI

**R2:** NJ, & NY

**R3:** VA

**R4:** AL, FL, GA, MS, NC, SC, & TN

**R5:** MI, MN, & WI

**R6:** AR, & TX

**R7:** IA, & NE

**R8:** ND, MT, & UT

**R9:** AZ, & NV

**R10:** ID & WA

# TRI-Tier2 Comparison-2

- Most States do not give access to their Tier 2 Reports

- *Hypothesis*: Certain facilities that report Tier 2 Reports are expected to report directly to TRI (under section 313 of EPCRA)

  - Manufacturing industry sectors

  - TRI listed chemicals

  - Exceeds employee threshold

# TRI-Tier 2 Comparison-3

**Analytical Approach**

- Downloaded Tier 2 data from E-Plan, individual states and regional Tier 2 coordinators

- Confirmed chemical identity between Tier 2 and TRI chemicals using Chemical Abstracts Service (CAS) numbers

- Obtained NAICS and number of Employees for Tier 2 facilities

- Matched Tier 2 facilities with FRS and TRI database

- Identified possible TRI non-reporters and never-reporters

- Double-checked  facilities' operational status

# TRI-RMP Comparison

- *Hypothesis*: Certain facilities that report RMP Reports are expected to report directly to TRI (under section 313 of EPCRA)

  - RMP industry sectors also be covered under TRI

  - TRI listed chemicals and RMP chemicals

  - Exceeds employee threshold

- Quantities in-Process

- Identified non-reporters and never-reporters

# Results and Follow Up

## **Results**

- Under-Reporters / Over-Reporters
- Non-Reporters
  - Chemical
  - Facility
- Never-Reporters

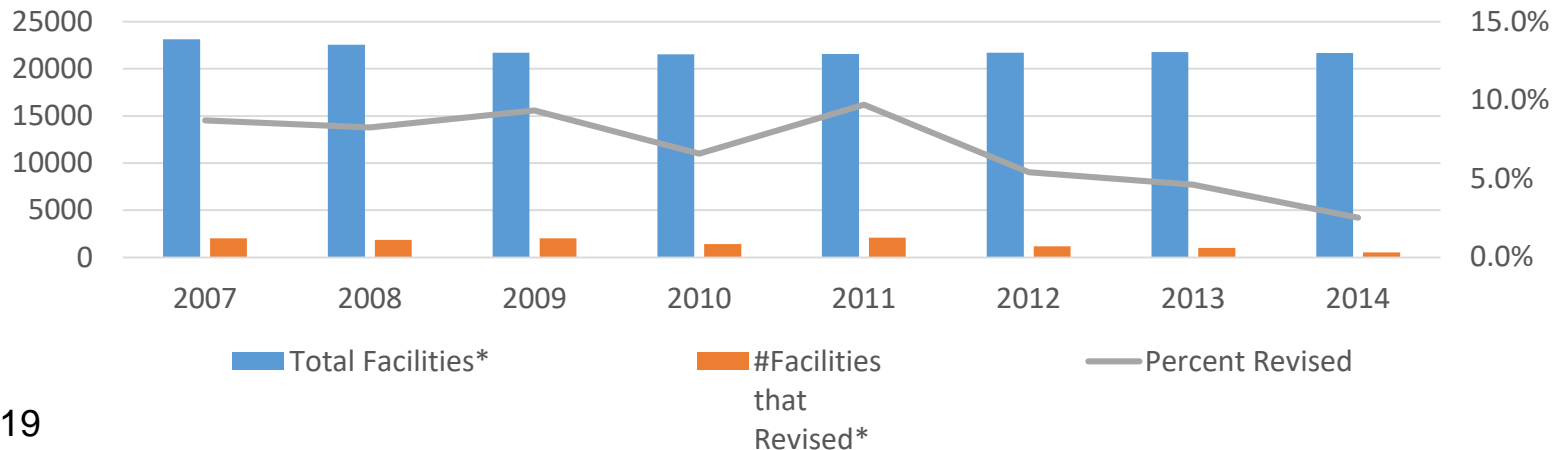## **Follow Up**

- Data Quality Calls
- Enforcement

# TRI Facilities Revisions – RY07-14

| RY | Total Facilities | Total Facilities* | #Facilities that Revised* | Percent Revised |
|---|---|---|---|---|
| 2007 | 23359 | 23126 | 2015 | 8.7% |
| 2008 | 22769 | 22555 | 1864 | 8.3% |
| 2009 | 21894 | 21698 | 2026 | 9.3% |
| 2010 | 21737 | 21542 | 1423 | 6.6% |
| 2011 | 21742 | 21562 | 2094 | 9.7% |
| 2012 | 21847 | 21708 | 1178 | 5.4% |
| 2013 | 21897 | 21772 | 1005 | 4.6% |
| 2014 | 21783 | 21657 | 546 | 2.5% |
| * - These counts omitted multi-establishment facilities | | | | |



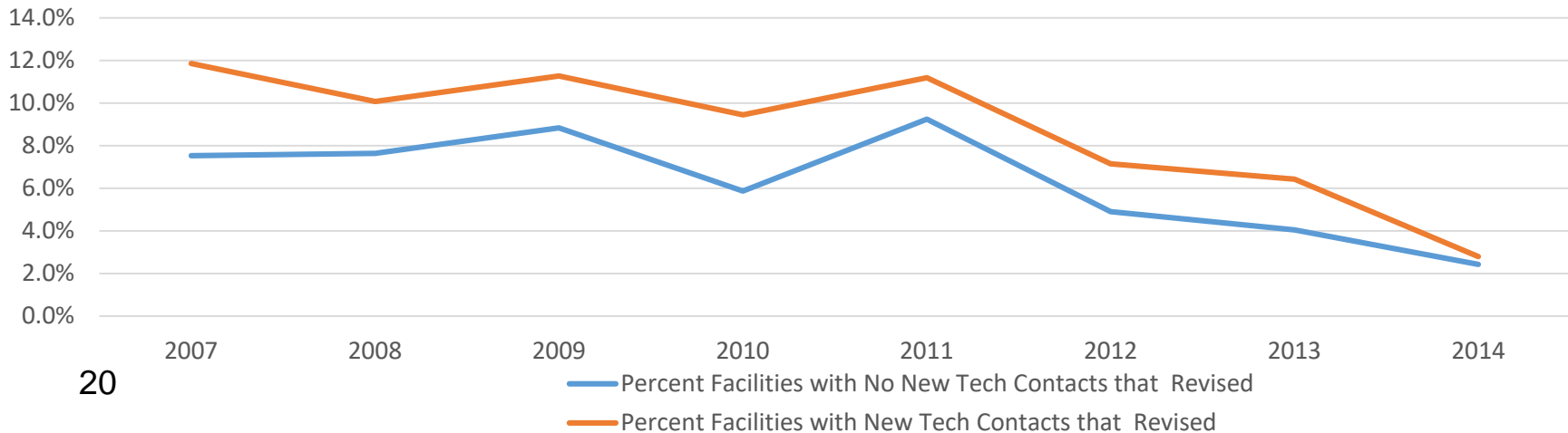TRI Facilities Revision Rate - RY07-14

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# Revisions of Facilities with New and Existing Tech Contacts – RY07 - 14

| RY | Total Facilities* | #Facilities that Revised* | Percent Facilities with No New Tech Contacts that Revised | Facilities with no new Tech. Contacts* | Facilities with atleast one new Tech. Contact* | # Facilities that revised and had a new Tech. Contact* | Percent Facilities with New Tech Contacts that Revised |
|---|---|---|---|---|---|---|---|
| 2007 | 23126 | 2015 | 7.5% | 16805 | 6321 | 749 | 11.8% |
| 2008 | 22555 | 1864 | 7.6% | 16796 | 5759 | 580 | 10.1% |
| 2009 | 21698 | 2026 | 8.8% | 17200 | 4498 | 507 | 11.3% |
| 2010 | 21542 | 1423 | 5.9% | 17120 | 4422 | 418 | 9.5% |
| 2011 | 21562 | 2094 | 9.2% | 16425 | 5137 | 575 | 11.2% |
| 2012 | 21708 | 1178 | 4.9% | 16661 | 5047 | 361 | 7.2% |
| 2013 | 21772 | 1005 | 4.0% | 16562 | 5210 | 335 | 6.4% |
| 2014 | 21657 | 546 | 2.4% | 16589 | 5068 | 142 | 2.8% |
| * - These counts omitted multi-establishment facilities | | | | | | | |

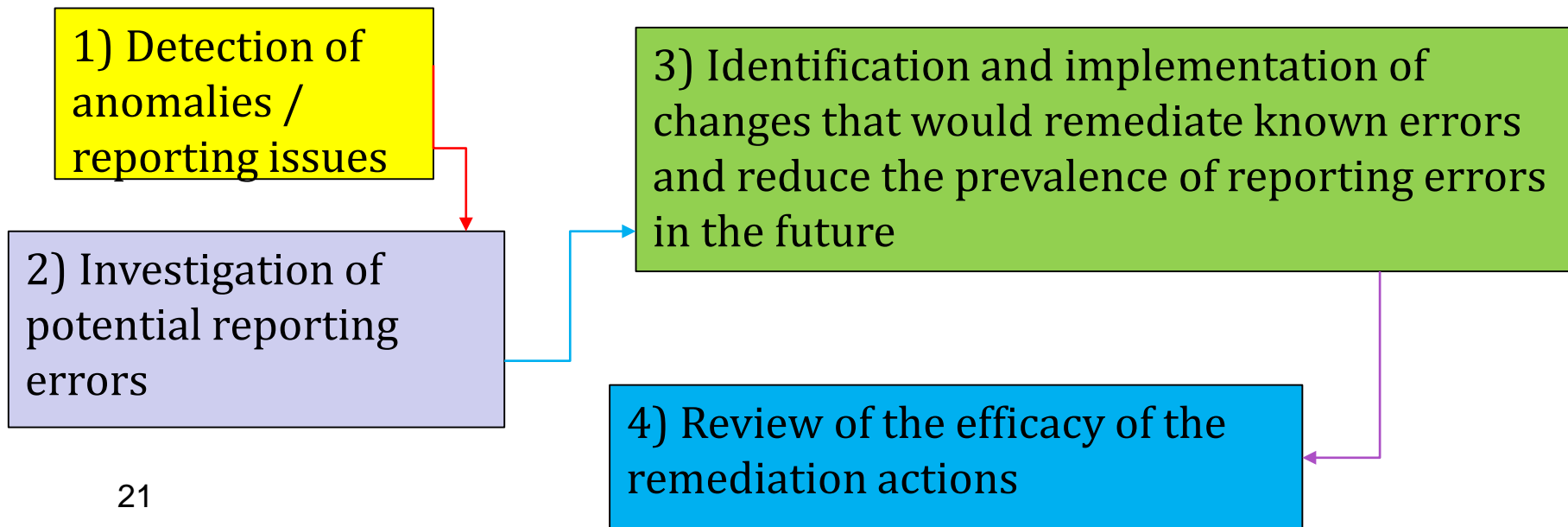TRI Facilities with New and Exixsting Tech Contacts Revisions - RY07-14

❖ EPA undertakes a range of data quality efforts so that EPA can assure TRI data users that published TRI information is of known quality and of sufficient quality to meet the needs of intended end uses.

## TRI Data Quality Assurance and Control Model

1) Detection of anomalies / reporting issues

2) Investigation of potential reporting errors

3) Identification and implementation of changes that would remediate known errors and reduce the prevalence of reporting errors in the future

4) Review of the efficacy of the remediation actions

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# Enforcement

- Data Quality
  - Over-reporting
  - Under-reporting

- Non-Reporters
  - Facility
  - Chemical(s)

- Never Reporters

# Summary

- TRI Program is committed to helping facilities submit high quality TRI data:

    - Data Quality Calls
    - Guidance
    - TRI-MEweb
    - Training
    - TRI Information Center
    - Outreach

# Contact Information

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