



# DMR Pollutant Loading Tool Version 1.0

## OVERVIEW OF LOADING TOOL ARCHITECTURE FOR THE EZ, TRI, AND ADVANCED SEARCH OPTIONS

Figure 1 presents a flow chart for the Loading Tool and the EZ, TRI, and Advanced search options. The Loading Tool pulls Discharge Monitoring Report (DMR) data from EPA's Permit Compliance System (PCS) and Integrated Compliance Information System for the National Pollutant Discharge Elimination System (ICIS-NPDES). The tool also pulls data from the Toxics Release Inventory (TRI). The data are processed through four calculation programs to calculate pollutant loads. The tool stores the calculated loads in an Oracle 10G database, which users can access using the tool's online search options. The following is a description of the Loading Tool components:

- DMR Data:
  - **ICIS-NPDES Data:** The Loading Tool pulls data from approximately 20 ICIS database tables and stores the data in the Loading Tool database.
  - **PCS Data:** The Loading Tool pulls data from four PCS data types, which are downloaded from EPA's Mainframe as a comma-delimited text files and uploaded to the Loading Tool database: Permit Facility, Pipe Schedule, Parameter Limits, and Measurement Violation.
- TRI Data: EPA obtains TRI water release data from EPA's Envirofacts database and stores the data in the Loading Tool database.
- Load Calculation Programs and Database Tables:
  - **Loading Tool Convert Program:** The Convert Program converts the ICIS-NPDES and PCS DMR data into standard units of milligrams per liter, kilograms per day, and millions of gallons per day. The converted ICIS-NPDES and PCS DMR data are stored in the DMR\_LOADINGS\_CONVERT\_DMR table in the Loading Tool Database.
  - **Loading Tool Load Calculator Program:** The Load Calculator Program pulls pollutant measurements and wastewater flows from the DMR\_LOADINGS\_CONVERT\_DMR table, and calculates pollutant loads and aggregated nitrogen and aggregated phosphorus loads. The Load Calculator Program creates the following tables:
    - **DMR\_LOADINGS\_WORK:** This database table stores the pollutant loadings per monitoring period (e.g., January 2007) calculated by the Load Calculator Program and the aggregated

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total nitrogen and total phosphorus loadings calculated by the Load Calculator Program.

- ***DMR\_LOADINGS\_ANNUAL:*** This database table stores the annual pollutant loads calculated by the Load Calculator Program and the aggregated total nitrogen and total phosphorus loadings calculated by the Load Calculator Program.

— ***Loading Tool EZ Search Load Program:*** To generate the loadings for the EZ Search, the EZ Search Load Program performs the following calculations:

- Sums the pollutant loads in the DMR\_LOADINGS\_ANNUAL table by NPDES permit and pollutant;
- Calculates toxic-weighted pollutant loads;
- Estimates loads for discharges reported as “non-detect;”
- Estimates loads for monitoring periods with no reported discharges; and
- Groups pollutant parameters that represent the same chemical.

The program stores the loads in the DMR\_LOADINGS\_EZ\_SRCH\_CALCS table.

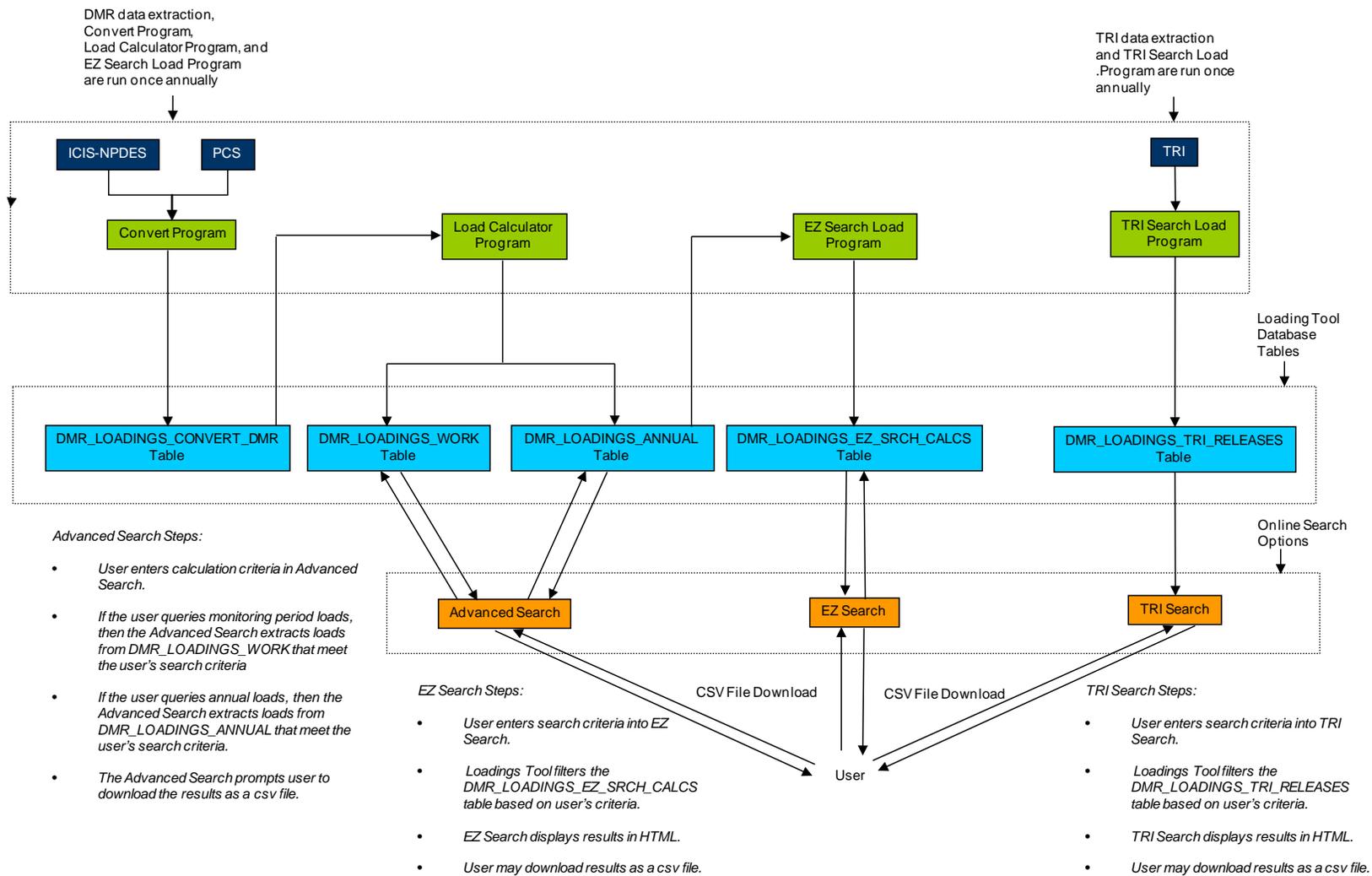
— ***Loading Tool TRI Search Load Program:*** To generate TRI releases for the TRI Search, the TRI Search Load Program converts all TRI water releases into standard units of pounds per year and calculates toxic-weighted releases. The program stores the TRI releases in the DMR\_LOADINGS\_TRI\_RELEASES table.

- Online Search Options:

— ***Advanced Search:*** The Advanced Search allows users to conduct a customized query and alter the loading calculation methodology. The Advanced Search provides the results to the user as a down-loadable CSV file.

— ***EZ Search:*** The EZ search provides a simple interface to query pollutant loads by location, watershed, industry, and pollutant/pollutant category. Based on the user-entered search criteria, the EZ Search filters the loads in DMR\_LOADINGS\_EZ\_SRCH\_CALCS and displays the results in an HTML view. Users can also download results as a comma-separated value (CSV) file.

— ***TRI Search:*** The TRI Search provides a simple interface to query TRI releases by location, watershed, industry, and pollutant. Based on the user-entered search criteria, the TRI Search filters the loads in DMR\_LOADINGS\_TRI\_RELEASES and displays the results in an HTML view. Users can also download results as a comma-separated value (CSV) file.



**Figure 1. DMR Pollutant Loading Tool Data Flow Chart**