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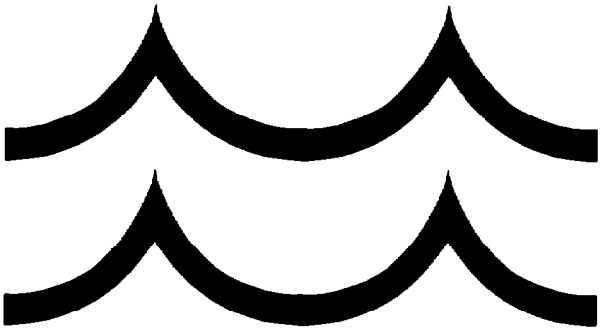
Guidance and Standards for Calculating Point Source Pollutant Loads Using the Permit Compliance System (PCS)

Point Source Load Reductions as an Indicator of Water Quality Improvements



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Office of Enforcement and Compliance Assurance
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United States Environmental Protection Agency

Washington, DC 20460

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CHAPTER 1
INTRODUCTION

1.1 BACKGROUND

Under the Clean Water Act (CWA), all states, tribes, and territories establish water quality standards that include "designated uses" of surface water (e.g., drinking water supply, swimming, and habitat for fish and other aquatic life) and water quality criteria to protect human health and aquatic life. Section 305(b) of the CWA requires each state to submit a biennial report to EPA describing the quality of its navigable waters. The *National Water Quality Inventory* (a report to Congress) assesses and summarizes the quality of waters in the United States.

Federal and state agencies have programs designed to protect navigable waters (including wetlands). Many of these programs are administered by EPA in conjunction with the states. Measuring the success of water programs is critical in determining water quality improvements.

EPA has developed environmental indicators that will demonstrate improvements to the Nation's surface water quality due to the CWA and National Pollutant Discharge Elimination System (NPDES) regulations. One of these indicators is designed to measure pollutant loadings from point source discharges. EPA's Office of Water (OW) has formed a series of workgroups designed to identify ways to measure progress based on these indicators. One of these workgroups is the Guidance and Standards for Load Estimations (GSLE) Workgroup, which was developed to establish standards for measuring point source mass load reductions to waters. Mass load reductions serve as a surrogate indicator of water quality improvements.

The GSLE Workgroup was formed specifically to identify and highlight those areas where potential problems might or do exist and to recommend solutions for handling those problems. The workgroup's recommendations range from simple data quality assurance procedure changes to Permit Compliance System (PCS) enhancement changes.

1.2 PURPOSE OF THIS GUIDANCE

PCS is the primary repository of data used to determine reductions in pollutant loads to the waters of the United States. This effort falls under the umbrella of EPA's National Goals Project, which has developed a series of milestones for measuring improvements to the waters of the United States over the next 10 years. Measuring point

source load reductions using PCS is one way to monitor improvements. The purpose of this guidance is to establish guidelines for consistent coding of NPDES permits in a manner that facilitates load reduction estimation through the use of PCS.

While PCS data are not perfect, they are the best source of national loadings data. Environmental indicators are used to show changes in environmental conditions, and they are only as good as the quality of the measurements that support them. The indicators presented in *Environmental Indicators of Water Quality in the United States* (USEPA, 1996) contain measurements of varying quality. These measurements might differ in precision, accuracy, representativeness, and completeness. Data of varying quality are used for two reasons: (1) the indicator describes an important, if as yet imperfect, way to measure a national objective, and
(2) efforts are under way to improve indicator measurements in future reports.

Since PCS data are being used for purposes other than compliance monitoring, this guidance explains to permit writers and PCS coders how data will be used to calculate loads. It also presents instances to be avoided, such as inconsistencies in permit writing and PCS data coding, which lead to improper load calculations.

1.3 PERMIT COMPLIANCE SYSTEM

The Permit Compliance System is a database maintained by EPA's Office of Enforcement and Compliance Assurance (OECA) to track the permit, compliance, and enforcement status of facilities regulated by the NPDES program under the CWA. Permittees are required to submit effluent monitoring data to the permitting authority on the Discharge Monitoring Report (DMR) form. These data are then entered into PCS and evaluated for compliance with the NPDES permit requirements. Historically, EPA has relied on PCS to contain accurate data for its compliance and enforcement efforts. More recently, PCS data have been used for other purposes. For example, in the late 1980s, there was an interest in using the DMR data residing in PCS to calculate wastewater loads. As a result, the Effluent Data Statistics (EDS) PCS retrieval option was developed. To ensure that reliable mass load totals are calculated, EDS incorporates specific routines that thoroughly evaluate the PCS effluent data. Appendix A provides an overview of the EDS process.

Some permit writers use PCS data to develop effluent limits based on their best professional judgment. In the near future, it is expected that PCS data will be used for two new purposes: environmental indicators (as discussed in this guidance) and watershed support.

1.4 WATERSHED SUPPORT

The NPDES watershed strategy is an OW-wide initiative that promotes integrated solutions to address surface water, ground water, and habitat concerns on a watershed basis. EPA and states use PCS data to support watershed-based decisions. Comprehensive data are imperative for the success of watershed management, and water quality problems are difficult to address if regulatory authorities do not have the data needed to understand the problems. EPA and other federal agencies are working on improving the quality of environmental data to help determine the overall health of watersheds. PCS is the best current source of point source discharge data and plays an important role in this effort. This guidance is a critical component of a larger effort to improve the ability of PCS to track pollutant loadings.

1.5 WET WEATHER DISCHARGES

EPA is committed to supporting the states in a collaborative effort to generate improved data to track national pollutant loadings from wet weather discharges. Guidance for estimating pollutant loadings from wet weather discharges (combined sewer overflows, sanitary sewer overflows, and storm water discharges) will, therefore, be developed in the future.

EPA intends to track the frequency of occurrence and total annual flow from combined sewer overflows (CSOs) on a permit-by-permit basis in PCS. An appropriate method for PCS coding of CSO data needs to be developed. CSO loadings estimation procedures might rely on the use of typical pollutant concentrations (TPC). The use of TPC is discussed further in section 2.1 of this guidance. One area that EPA will be evaluating with respect to using TPC is how to designate differences in PCS between CSOs and publicly owned treatment works.

The potential capability of the EDS retrieval option to calculate estimated pollutant loadings from CSOs, sanitary sewer overflows (SSOs), and storm water discharges needs to be evaluated by EPA. Because it is EPA's intention to include wet weather flow data in PCS, pollutant loadings estimations from CSOs, SSOs, and storm water discharges should be possible in the future. Determination of how to estimate pollutant concentrations and the frequency, duration, and total volume of wet weather flows is as area of ongoing evaluation.

1.6 ORGANIZATION OF THIS GUIDANCE DOCUMENT

This manual is organized as follows:

- Section 1 is the introduction.

- Section 2 presents several PCS data problems identified by the GSLE workgroup, along with suggested guidance on how to correct the problems so that PCS data can provide more accurate estimations of pollutant load reductions.

- Section 3 lists references used in writing this manual.

- The Appendix is a summary of the EDS system.

- Important terms are defined throughout by using boldface type.

CHAPTER 2
GUIDANCE FOR PERMIT WRITERS AND PCS CODERS

The following issues are presented from two perspectives—the permit writer's perspective and the PCS coder's perspective. This document is intended to provide guidance that, if followed, will allow PCS effluent load estimation programs to provide results that are accurate to the extent practicable. Note that this is only guidance. In the process of permit writing, situations will arise where this guidance might not be appropriate. In such instances, the permit writer should use judgment and discuss the chosen approach with the PCS coder.

This guidance is part of a coordinated effort to improve effluent loadings estimations derived from PCS. Included in the effort are complementary improvements to the permit drafting process, improvements to the permit coding process, and improvements to the load estimation programs used in PCS. Currently, the permit writing/coding/PCS load estimation process can produce errors in several key areas. These key areas can be broadly classified as pipe-based issues and parameter-based issues. The issues are noted below along with the recommended improvements that permit writers, PCS coders, and system users should include in permit modification or renewal. Please note that when the document refers to Pipe Number or Discharge Number, these terms are also synonymous with the term Outfall Number. These terms will be used interchangeably throughout the document.

2.1 PIPE-BASED ISSUES

All outfalls should be identified in permits and in PCS. Flow should be reported for all outfalls. If flow is not monitored, estimated flow should be reported. Where pollutant parameters are not monitored, EDS will estimate loadings using the TPC's for these pollutants and the reported flow data (see Appendix A). If flow is neither monitored nor estimated, EDS will use the facility average design flow (FLOW) in PCS to estimate the average daily discharge flow from the facility. To ensure that flow data will be available to EDS for TPC estimation, the average design flow or the average estimated flow from the facility should always be entered in the PCS facility data field FLOW.

2.1.1 Consistent Reporting of Intermittent Flows

Guidance for Permit Writers:

All intermittent outfalls need to be identified in the permit even though monitoring will not be required for all of them. Intermittent outfall discharges should be labeled in the permit at both the outfall number and in the wastewater description. For intermittent outfalls, where monitoring will be required, the permit should be written to require the permittee to report total flow for the reporting period (monthly, quarterly, or annual) instead of the average flow. For outfalls where pollutant monitoring is not required, flow should be reported (whether estimated or measured) so that it can be entered into PCS. Alternatively, if monitoring total flow is not appropriate, total quantity of a pollutant can be reported for the period. For the outfall where monitoring will not be required, mass loads can be estimated by using the "typical pollutant concentration" (TPC) for the facility's industrial category (see Appendix A).

Guidance for PCS Coders:

All intermittent outfalls need to be entered into PCS and are identified as intermittent by entering **M** in the outfall type field (OUTT). For those outfalls where monitoring will be required, the total flow for the reporting period should be entered into PCS in the first quantity field (LQAV) or the first concentration field (LCMN) with a statistical base code that indicates reporting period total. An example would be **MP** for monthly total. **A statistical base code is a PCS code that describes how a monitoring result is to be reported (e.g., monthly average or daily maximum.)**

2.1.2 Pipe Number Identification - Discharge Designations

Background

To enter a pipe record, PCS requires that both a 3-digit discharge number (outfall number) field (DSCH) and a 1-digit discharge report designator field (DRID) be entered. **The DRID is used to designate a particular grouping of parameters for reporting purposes**. However, EDS uses only the 3-digit DSCH field to evaluate pipes for mass load calculations. This is consistent with how PCS evaluates pipes for significant non-compliance (SNC). For example, if two separate pipes are coded with one as 001A and the other as 001B, PCS assumes that there is only one discharge point, namely 001.

Proper Uses of the DRID

There are three proper uses of the DRID. These are summarized below:

- Tiered limits: Tiered limits are limits in effect only for certain conditions,

such as flow, production, or temperature. Multiple tiers are never in effect over the same period but are triggered by changes in flow, production, or temperature from an outfall.

- Multiple reporting cycles: **Multiple reporting cycles occur when parameters are required to be reported for the same pipe on a monthly, quarterly or annual basis**. Because PCS only allows one reporting cycle per pipe record, the DRID allows the parameters to be grouped for each of the multiple reporting cycles.

- Internal Monitoring: The DRID can be used to group parameters for the Discharge Monitoring Report (DMR) preprinting that are discharged through an external outfall but are monitored internally.

2.1.2.1 Pipe Number Identification

Guidance for Permit Writers:

As mentioned previously, EDS uses only the three-digit Discharge Number (outfall number) and ignores the single-digit Report Designator in selecting information to be processed for loadings. Permit writers should use only the Discharge Number in assigning outfall numbers in permits, leaving the use of Report Designator to PCS coders. Continuity of outfall numbers should also be maintained by permit writers whenever renewing or modifying permits. Even when there are physical changes at a facility, sequential numbering of outfalls is not necessary.

Guidance for PCS Coders:

Not applicable.

2.1.2.2 Discharge Designations

Guidance for Permit Writers

Permit writers should properly associate the tiered limits, multiple reporting cycles, and internal monitoring locations with the appropriate pipe.

Guidance for PCS Coders:

- Tiered Limits: Tiered limits should not be coded into PCS as separate pipes. The

DRID should be used to group parameters as identified in the permit for tiered limits. For example, if there is one discharge point and there are two sets of flow-based limits, the first set of limits might be coded as 001A and the second set of limits might be coded as 001B.

- Multiple Reporting Cycles: PCS coders should use the DRID to split out monthly, quarterly, semiannual, and annual (yearly) reporting cycles. For example, 001M, 001Q, 001S, and 001Y, respectively, might be used. Where the reporting cycle covers multiple months, the appropriate reporting cycle NRPU (number of reporting units) should be entered. For example, with a quarterly reporting cycle (i.e., spanning 3 months) an NRPU of 003 should be entered.

- Internal Monitoring: Internal monitoring locations should not be coded into PCS as separate pipes. PCS coders should use monitoring location codes (MLOC) to identify internal monitoring locations. In addition, PCS coders can use the DRID along with MLOC to group parameters for the Discharge Monitoring Report (DMR) preprinting. If the DRID is used to group parameters for internal monitoring, **N** should be entered in OUTT to identify that this DRID is associated with internal monitoring. For example, non-contact cooling water is frequently mixed with process wastewater and subsequently discharged. Since this is only one discharge point, all internal monitoring locations should have the same discharge number. The final discharge might be coded as 001A, the process discharge might be coded as 001B, and the cooling water discharge might be coded as 001C.

2.1.3 External/Internal Pipe Locations

Guidance for Permit Writers:

To prevent over counting of loadings, permit writers should properly identify the internal monitoring location on the copy of the permit that goes to the PCS coder. This will involve minimal additional work for the permit writers and will greatly help the PCS coder in their efforts to enhance the loadings estimation capability of EDS. For parameters, where the monitoring results of the internal outfall will provide the most accurate monthly loadings, permit writers should label the internal monitoring parameter with the # symbol in parentheses. For example, if the parameter will be non-detectable at the external outfall, the internal waste stream should be labeled with the "(#)". The permit writer should note that if the internal monitoring locations are accurately identified in the permit, the PCS coder will assume that they are *not* to be used for load analysis

calculations unless identified with the "(#)" symbol.

Example 1 shows how to identify on the copy of the permit that goes to the PCS coder that the load estimations for mercury will be calculated at the internal point, and that the load estimations for BOD will be calculated at the external outfall.

EXAMPLE 1

Outfall Number and Effluent Parameter	Discharge Limitations		Units	Measurement Frequency	Sample Type
	Daily Average	Daily Maximum			
Outfall Number 001 Miscellaneous Plant Site Wastewater					
BOD	50	100	lb/d	Weekly	24-hr Comp.
Mercury	Monitor	Monitor	lb/d	Weekly	24-hr Comp.
Outfall Number 001 Internal Widget Process Wastewater Discharge					
BOD	5	10	lb/d	Weekly	24-hr Comp.
Mercury (#)	Monitor	0.005	lb/d	Weekly	24-hr Comp.

Guidance for PCS Coders:

The PCS coder should assume that the external monitoring location will be used for loading estimations unless an internal monitoring location is indicated by the "(#)" symbol. The **Monitoring Location simply describes at which point in the pipe the sample will be taken**. Each parameter at the external monitoring location should be given a monitoring location code (MLOC) of 1, 2, A, or B that designates the discharge as an effluent being discharged to the receiving waters (See Appendix A for a more detailed explanation of MLOC). *These codes should never be used for internal monitoring locations.*

The MLOC "#" should be used to identify an internal monitoring location point if it will be used by the EDS program for loadings estimations. When there is an external monitoring location for the same parameter that *should not be included* in the load calculation, the coder should use the MLOC "&". To provide for flexibility in using these symbols, the description for each on the DMR preprint will be "SEE COMMENTS BELOW." Therefore, the PCS coder will need to provide the appropriate comments.

2.1.4 Sum of Facility Outfalls1

Guidance for Permit Writers:

To facilitate loading estimations when both individual and summed monitoring results are required, the copy of the permit that goes to the PCS coder should be drafted

as previously mentioned using the # symbol in parentheses to indicate if the sum of facility outfalls is to be used for loading estimations. **Example 2** shows how the permit writer indicates to the PCS coder that the summed monitoring result for BOD and the individual monitoring result for nickel are coded for loading estimations.

EXAMPLE 2

Outfall Number and Effluent Parameter	Discharge Limitations		Units	Measurement Frequency	Sample Type
	Daily Average	Daily Maximum			
Outfall Number 001 Miscellaneous Plant Site Wastewater					
BOD	5	10	lb/d	Weekly	24-hr Comp.
Nickel	Monitor	.005	lb/d	Weekly	24-hr Comp.
Outfall Number 002 Miscellaneous Plant Site Wastewater					
BOD	50	100	lb/d	Weekly	24-hr Comp.
Outfall Number SUM Of Outfalls 001 and 002					
BOD (#)	50	100	lb/d	Weekly	24-hr Comp.

Guidance for PCS Coders:

The PCS coder should assume that the summary of facility outfalls should not be coded for loadings estimation unless marked with a "(#)". For each parameter, the PCS coder should enter an MLOC "&" to indicate that the parameter will not be used for loading estimations. Where the summary of facility outfalls is to be used for load estimations for a parameter, an MLOC "#" should be entered for that outfall and an MLOC "&" entered for the same parameter at individual outfalls.

2.1.5 Pipe Description and Type of Effluent Waste

Guidance for Permit Writers

Permit writers should always provide a pipe description, which identifies the type of effluent waste being discharged, for each permitted discharge on the copy of the permit that goes to the PCS coder. This description should be as detailed as necessary to give the PCS coder sufficient information to enter the PCS pipe description (PIPE) and type of effluent waste (WAST) data fields.

Guidance for PCS Coders:

PCS coders should always enter the pipe description in the PCS data field PIPE (pipe description) and the effluent waste type code in the PCS data field WAST (type of effluent waste) for each permitted discharge from the copy of the permit received from the permit writer.

2.2 PARAMETER-BASED ISSUES

2.2.1 Mass vs. Concentration

Guidance for Permit Writers:

Permit writers should express limitations and monitoring requirements in terms of mass except when, in accordance with 40 CFR 122.45(f), it is not feasible or appropriate. Where permit limits are written in terms of concentration only, the permit writer should consider requiring monitoring in terms of mass but at a minimum require flow data so that loadings can be derived if mass-based limitations and monitoring are not required. Reporting the mass value for parameters is more accurate than using reported flow and multiplying by the concentration.

Guidance to PCS Coders:

Not Applicable

2.2.2 Consistent Parameter Code Use

Guidance for Permit Writers:

To minimize potential loadings estimation errors, permit writers should always provide parameter codes to PCS coders. In PCS, some pollutants have several parameter codes associated with them, typically because different codes correspond to different analytical methods in 40 CFR Part 136. Permit writers should be consistent when providing the parameter code to the PCS coder for each parameter that has permit limits. If a permit writer **MUST** change an analytical method (and therefore change the parameter code) EDS has an option that will allow for the grouping of parameter codes for the same or similar pollutants.

Guidance for PCS Coder:

PCS coders should be consistent when assigning parameter codes for permitted parameters as stated above in the permit writer's guidance.

2.2.3 Permit Modifications Where Parameter Monitoring Has Been Eliminated

Guidance for Permit Writers:

Not Applicable

Guidance for PCS Coders:

NPDES permits may occasionally be modified to eliminate reporting requirements. For example, a State or Region might require annual or quarterly metals monitoring when a new permit is issued. After some time, the State or Region might

decide that further metals monitoring is not required and therefore might modify the NPDES permit. In the past, it has often been the practice to delete the units from these limits rather than to modify the limits in PCS. This procedure will prevent the parameter from printing on the DMR and will maintain the limit record for historical information. However, this practice can cause serious problems with load estimations. If the permittee is reporting metals in micrograms per liter, for example, and the units are deleted, the EDS software assumes that standard units apply (for most metals, milligrams per liter). This assumption results in loads being overestimated by a factor of 1,000.

Although eliminating the units might be a quick way to effect this change, it should not be done. To effect this change properly, a modification for the permit limit record should be done by the PCS coder. When a parameter that was originally present in the permit is no longer required because of a permit modification, the PCS coder should enter a new transaction. The modification is essentially empty except for the key data elements and the effective date of the modification. *The unit codes and limits fields must be left blank.* Following this procedure will result in the parameter dropping off the next time DMRs are preprinted but will leave the units on the previous limit record so that proper loads can be calculated or estimated.

2.2.4 Monthly Monitoring Data

Guidance for Permit Writers:

Permit writers should require monthly average numeric limits for all limited parameters except when, in accordance with 40 CFR §122.45(d), it is impracticable. Even if monthly average numeric limits are not required, the permit writer should require monthly average monitoring and reporting of parameters, where possible, to enhance the accuracy of loading estimations by the EDS software. As described in Appendix A, EDS first searches for monthly average fields to estimate total loads. If there is no monthly average data, EDS will use the non-monthly average data to estimate total loads which introduces inaccuracies. Permits that require the reporting of monthly average data will allow EDS to provide the most accurate load analysis available through PCS.

Guidance for PCS Coders:

PCS coders should identify the monthly average limit fields with the appropriate statistical base code (see Appendix A for details).

2.2.5 Combined Parameters

There is no guidance for this issue because the EDS software cannot segregate the individual parameters. It can only calculate loadings from the parameter codes for the combined limits. The permit writer, as well as the PCS coder, needs to be aware of this situation.

Having both combined and segregated permit limits (and monitoring data) is desirable from a data quality perspective. However, with the recent emphasis on minimizing the regulatory and cost burden, the reduced expense of combined analyses is attractive.

CHAPTER 3
REFERENCES

U.S. Environmental Protection Agency, 1996a. Environmental Indicators of Water Quality in the United States. Document Number EPA-841-R-96-002.

U.S. Environmental Protection Agency, 1996b. Permit Compliance System - Data Element Dictionary. Document Number PCS-DD96-1.00.

APPENDIX A
OVERVIEW OF THE EFFLUENT DATA STATISTICS (EDS) SYSTEM

The EDS process starts by extracting the reported DMR data that have been entered into PCS. These data are then processed through a software program to add the flow data to each record so that loadings can be calculated using flow and concentration whenever mass loading data have not been reported for a monitoring period. The effluent data are then converted into PCS standard units since the data can be reported in various units. After the data have been converted, they are processed by the EDS routines to calculate mass load totals.

Before being processed by the EDS routines, the data are screened. Since internal monitoring may be required in the NPDES permit, EDS uses only DMR data for discharge points that discharge directly into the receiving stream, as identified by monitoring location codes (MLOC) 1 (effluent gross) and 2 (effluent net). Additionally, monitoring location codes A (after disinfection) and B (prior to disinfection) have been identified by the PCS user community as codes that should be processed by EDS as effluent gross. Last, if both gross and net (i.e., gross minus intake) values are reported, EDS will process the net value and ignore the gross value since the intent is to determine the net impact to the receiving waterway.

The general logic used by EDS for calculating mass load totals is to multiply the reported daily average mass loading by 30 days and the number of reporting period units (NRPU) in months to obtain the total mass load for that reporting period. Specifically, EDS uses the statistical base code to determine which mass quantity field is defined as average. If the average field contains non-zero data, the data will be used for the mass load totaling calculations. Otherwise, the program will calculate a mass loading by using reported concentration and flow data.

Again, EDS uses the statistical base code
to find the average concentration and flow fields respectively. If the statistical base average field
does not contain data, EDS searches for the first measurement field with data based upon the hierarchial lookup specified in the accompanying table. The field names in the lookup table are the PCS measurement data element (field) acronyms defined in Appendix B. Finally, if EDS cannot calculate loadings based upon concentration and flow because of insufficient data, EDS tests the non-average or alternate quantity field (see accompanying table) for data before assuming zero for that reporting period.

If there is no average statistical base code for a parameter, EDS searches for the

first measurement field with data based upon the following hierarchial lookup: MQAV, MQMX, MCAV, MCMX, MCMN.

EDS has an option that allows the data for a pollutant with multiple PCS parameter codes to be grouped when data for the different codes are reported for the same reporting period. "Grouped" means that the loads for the different parameter codes are either added or the load of one replaces the load of another based upon a hierarchy. The hierarchy is based upon which parameter code will provide the most reliable load estimate. The following example illustrates how "parameter grouping" works for the pollutant copper which has six parameter codes.

CODE	DESCRIPTION
01040	COPPER, DISSOLVED (AS CU)
01041	COPPER, SUSPENDED (AS CU)
01042	COPPER, TOTAL (AS CU)
01119	COPPER TOTAL RECOVERABLE
01256	COPPER
01306	COPPER POTENTIALLY DISSOLVED

The "grouping" hierarchy is as follows:

- The data for parameter code 01042 (total copper) has precedence over the data for parameter code 01256 (copper);
- The data for parameter code 01256 (copper) has precedence over the data for parameter code 01119 (total recoverable copper);
- The data for parameter code 01119 (total recoverable copper) has precedence over the data for parameter code 01306 (potentially dissolved copper);
- The data for parameter code 01306 (potentially dissolved copper) has precedence over the data for either parameter code 01040 (dissolved copper) or parameter code 01041 (suspended copper);
- The data for parameter code 01040 (dissolved copper) and parameter code 01041 (suspended copper) are added to give total copper, if both are reported.

The result of this is that one load value is calculated and reported for copper.

There is an EDS enhancement under development that will establish factors to convert the data for lower parameter codes in the hierarchy to be equivalent to the data for the parameter code at the top in order to provide improved pollutant loadings estimates.

There is also an EDS enhancement under development to incorporate the TPC

(Typical Pollutant Concentration) concept developed by NOAA (National Oceanic and Atmospheric Administration) for estimating pollutant loadings for pollutants that are not reported or otherwise available in PCS. TPC provides the typical concentrations for selected pollutants in discharges based on the type of process, effluent, and industrial category.

APPENDIX B
ACRONYMS LIST

BOD	Biochemical Oxygen Demand
CSO	Combined Sewer Overflow
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DRID	1-digit Discharge Report Designator field - PCS Code
DSCH	3-digit Discharge Number - PCS Code
EDS	Effluent Data Statistics - PCS Retrieval Option
FLOW	Average Design Flow - PCS Code
GSLE	Guidance and Standards for Load Estimations
LCMN	Concentration Minimum Limit - PCS Code
LQAV	Quantity Average Limit - PCS Code
MCAV	Measurement Concentration Average - PCS Code
MCMN	Measurement Concentration Minimum - PCS Code
MCMX	Measurement Concentration - PCS Code
MLOC	Monitoring Location Code - PCS Code
MQAV	Measurement Quantity Average - PCS Code
MQMX	Measurement Quantity Maximum - PCS Code

NPDES	National Pollutant Discharge Elimination System
NRPU	Number of Reporting Units - PCS Code
OECA	Office of Enforcement and Compliance Assurance
OUTT	Outfall Type Identifier - PCS Code
OW	Office of Water
PCS	Permit Compliance System
PIPE	Pipe Description
SNC	Significant Non-Compliance
TPC	Typical Pollutant Concentration
WAST	Type of Effluent Waste