

Data Metric Dictionary for the State Review Framework Clean Water Act

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Purpose of the Dictionary

This Data Element Dictionary (the “Dictionary”) provides guidance on the data metrics used in the State Review Framework reviews of Clean Water Act (CWA)/National Pollutant Discharge Elimination System (NPDES) program. The data metrics are primarily organized around the following activities:

- data quality (completeness, accuracy, and timeliness of data entry and universes)
- inspections performed and associated “coverage” of facilities in a given universe
- permit violations or significant violations discovered and reported (including the frequency that violations or significant violations are found)
- enforcement actions (formal and informal) issued
- penalties taken

Acronyms and a list of the information sources used can be found in Appendix 1.

Description of the Data Elements

Element 1 – Data Completeness. Degree to which the Minimum Data Requirements are complete.

– Metric 1a – Active facility universe counts accurate for all NPDES permit types

This metric helps EPA maintain a comprehensive inventory of all sources covered by NPDES permits. This data is required to be in the national data system. This metric presents the number of active NPDES

- major¹ facilities with individual permits (1a1);
- major facilities with general permit (1a2);
- non-major facilities with individual permits (1a3); and
- non-major facilities general permits (1a4).

– Metric 1b – Active NPDES majors permit limits and Discharge Monitoring Reports (DMR) entry

¹ A “major” NPDES permit discharge is either 1) a publicly owned treatment works (POTW) with a design flow of 1 million gallon/day or with an approved pretreatment program, or 2) a non-POTW a score of 80 or greater as determined by the NPDES Permit Rating Worksheet score. The Worksheet scores facilities on toxic pollutant potential, flow/stream flow volume, conventional pollutants, water quality factors, proximity to coastal waters, and proximity to drinking water supplies. The comprehensive Worksheet can be found at: www.epa.gov/npdes/pubs/owm0116.pdf.

This metric ensures that key information is available so that effluent-based compliance determinations can be accurately made for CWA major facilities. This data is required to be in the national data system. This metric looks at NPDES major facilities with individual permits for

- the percent of facilities with permit limits present in the national database in the most recent quarter of the fiscal year presented (1b1);
- the number of outfalls (permitted features) for which DMR data was entered during the most recent quarter of the fiscal year presented divided by the number of outfalls in the quarter for which DMR data were expected for majors with individual permits (1b2);
- of all NPDES major facilities with individual permits, the percent that had DMRs present in the national database (1b3);
- the rate of *manual override*² of reportable noncompliance (RNC)/significant noncompliance (SNC) determinations to be changed to a compliant status for NPDES major facilities in the national database in that fiscal year (1b4).

– Metric 1c – Active NPDES non-major permit limits and DMR entry

This metric ensures that key information is available so that effluent-based compliance determinations can be accurately made for CWA non-major facilities. This metric looks at NPDES non-major facilities with individual permits for

- the percent of facilities with permit limits present in the national database in the most recent quarter of the fiscal year presented (1c1);
- the number of outfalls (permitted features) for which DMR data was entered for each month of the most recent quarter of the fiscal year presented divided by the number of outfalls for each month in the quarter for which DMR data were expected for non-majors with individual permits (1c2);
- of all NPDES non-major facilities with individual permits, the percent that had DMRs present in the national database (1c3).

It should be noted that, currently, entering the data supporting this metric into the national data system is not required. Nevertheless, many states are entering a considerable amount of such information even without a requirement for data entry. The permit issuing authority is required to monitor and track this information even though it does not have to be reported to the national data system.

– Metric 1d – Quality of violation data at active non-major NPDES facilities with individual permits (and that are expected to regularly submit DMRs)

² Regarding manual overrides, there may be legitimate reasons for such overrides in infrequent circumstances; however, excessive use of such overrides may be indicative of other problems. The submetric output will allow easy identification of SNC overrides and RNC overrides. The findings under this submetric should also be used to provide context for assessing the accuracy of the data presented for submetrics 8a1 and 8a2 (number and percent of active majors in SNC).

This metric ensures that key information is available so that compliance determinations from initial screenings and annual noncompliance reports (ANCRs) can be accurately made for non-major NPDES facilities. This metric provides:

- the noncompliance rate in the national database for NPDES non-major facilities with individual permits (1d1);
- the noncompliance rate reported to EPA through the ANCR for NPDES non-major facilities with individual permits (1d2)³;
- the number of facilities in the national database with DMR non-receipt for every quarter in three continuous years (1d3).

It should be noted that, currently, entering the data supporting this metric into the national data system is not required. The permit issuing authority is required to monitor and track this information even though it does not have to be reported to the national data system.

– Metric 1e – Informal action counts complete

The National Enforcement Management System (EMS) for the NPDES program (Information Source 1) identifies basic principles necessary to the operation of an effective compliance and enforcement program. The availability of a variety of enforcement options (such as informal actions) provides the opportunity to match violations with an appropriate enforcement response to ensure compliance and promote deterrence.

For the fiscal year presented, this metric provides:

- the number of NPDES major facilities which received informal enforcement actions (1e1);
- the total number of state informal enforcement actions issued to NPDES major facilities (1e2);
- the number of NPDES non-major facilities which received informal enforcement actions (1e3);
- the total number of state informal enforcement actions issued to NPDES non-major facilities (1e4).

It should be noted that, informal enforcement action information is required to be reported to the national data system for major facilities and most publicly-owned treatment works (POTWs⁴).

– Metric 1f – Formal action counts complete

Formal action (administrative orders or judicial actions) counts also provide an opportunity to match violations with an appropriate enforcement response to ensure compliance and promote deterrence.

For the fiscal year presented, this metric provides:

³ Metric 1d2 is not currently available for FY2008 as this metric does not presently have the available data.

⁴ POTWs were required data entry if they were P.L. 92-500 facilities which received some federal grant assistance under the Clean Water Act.

- the number of NPDES major facilities which received formal enforcement actions (1f1);
- the total number of state formal enforcement actions issued to NPDES major facilities (1f2);
- the number of NPDES non-major facilities which received formal enforcement actions (1f3);
- the total number of state formal enforcement actions issued to NPDES non-major facilities (1f4).

It should be noted that, formal enforcement action information is required to be reported to the national data system for major facilities and most publicly-owned treatment works (POTWs⁵).

– Metric 1g – Assessed penalties complete

Data on penalties assessed is yet another enforcement metric that provides an opportunity to match violations with an appropriate enforcement response to ensure compliance and promote deterrence.

For the relevant fiscal year, this metric provides:

- the number of enforcement actions with penalties (1g1);
- the total state penalties in dollars (1g2).

This metric also provides:

- the three-year average dollar amount of total penalties collected pursuant to civil judicial settlements (1g3); and
- the three-year average dollar amount of total penalties collected pursuant to administrative actions (1g4).

The metric also includes a data quality indicator:

- the total number of state penalties collected (1g5).

States are required to enter judicial penalty amounts into the national data system. EPA is required to enter judicial and administrative penalties into the national data system.

Element 2 – Data Accuracy. Degree to which the Minimum Data Requirements are accurate (for example, correct codes used, dates are correct, etc.).

- Metric 2a – Number of formal enforcement actions, taken against major facilities, with enforcement violation type (EVTP in PCS or equivalent in ICIS-NPDES) codes entered.

⁵ POTWs were required data entry if they were P.L. 92-500 facilities which received some federal grant assistance under the Clean Water Act.

The definition of formal enforcement action is found in Information Source 1 (Chapter 2, page 24). Note that an action that does not have injunctive relief (e.g., a state equivalent of the Federal penalty order) is not a formal action.. This data is required to be reported to the national data system for major facilities and P.L 92-500 facilities.

Element 3 – Timeliness of Data Entry. Degree to which the Minimum Data Requirements are timely.

– Metric 3a – Comparison of data sets

A frozen data set will be created annually near the end of December for each of the metrics. The frozen data set represents the data which are in PCS or ICIS-NPDES at a time when all required data entry is to be complete. (See Information Source 13 which specifies timeframes for entering a variety of required data elements.) The longest timeframe specified is ten days. Consequently, the data in the frozen data set are compiled well after all required data entry should have been completed. The data in the frozen data set can be compared to the current data set to assess whether or not any of the data in the data fields annotated as “required data” have changed appreciably from that in the frozen data set. Assessing the number of data fields that have changed, and the magnitude of the changes provides an indication of the timeliness of data entry.

Element 4 – Completion of Commitments. Degree to which all enforcement/compliance commitments in relevant agreements (i.e., Performance Partnership Agreements (PPAs), Performance Partnership Grants (PPGs), categorical grants, Compliance Monitoring Strategy (CMS) plans, authorization agreements, etc.) are met and any products or projects are completed.

There are no data metrics for Element 4.

Element 5 – Inspection Coverage. Degree to which state completed the universe of planned inspections/compliance evaluations (addressing core requirements and federal, state and regional priorities).

– Metric 5a – Inspection coverage for active NPDES majors

The inspections which are included in this metric are high level inspections such as Compliance Evaluations Inspections (CEIs) or Compliance Sampling Inspections (CSIs). Reconnaissance inspections are also included, as long as the

facility is not a primary industry (e.g., one subject to effluent guidelines), a municipal permittee with an approved pretreatment program, or a major permittee which has been in SNC during the year. Since this is a coverage measure, the number of facilities inspected, rather than the total number of inspections, are counted. When a facility has been inspected multiple times in one year, only the first inspection is counted.

- Metric 5b1 – Inspections at active NPDES non-majors with individual permits, excluding those permits which address solely stormwater, pretreatment, Concentrated Animal Feeding Operations (CAFOs), Combined Sewer Overflows (CSOs), or Sanitary Sewer Overflows (SSOs)

This metric evaluates inspection coverage at NPDES non-major facilities with individual permits (excluding select permits) by measuring the number of facilities inspected, rather than the total number of inspections. In other words, multiple inspections at one facility will count as only one inspection under the selection criteria for this metric. The universe of facilities inspected applies to permittees covered by an individual permit only.

- Metric 5b2 – Inspections at active NPDES non-majors with general permits, excluding those permits which address solely stormwater, pretreatment, CAFOs, CSOs, or SSOs

This metric also evaluates inspection coverage at NPDES non-major facilities with general permits (excluding select permits) by measuring the number of facilities inspected, rather than the total number of inspections. The universe of facilities inspected applies to permittees covered by a general permit only.

- Metric 5c – Other inspections performed (beyond facilities indicated in 5a and 5b)

This metric includes state inspections other than those discussed in 5a and 5b. A state may perform such inspections without having made a commitment to do so (e.g., in response to citizen complaints). A state may also include commitments to perform other inspections beyond those evaluated in metrics 5a and 5b. Such commitments are evaluated under element 4.

Element 6 – Quality of Inspection or Compliance Evaluation Reports.

Degree to which inspection or compliance evaluation reports properly document observations, are completed in a timely manner, and include accurate description of observations.

There are no data metrics for Element 6.

Element 7 – Identification of Alleged Violations. Degree to which compliance determinations are accurately made and promptly reported in the

national database based upon compliance monitoring report observations and other compliance monitoring information (e.g., facility-reported information).

– Metric 7a1 – Number of single-event violations at active NPDES majors

This metric assesses whether single event violations (SEVs) determined by means other than automated discharge-to-limits comparisons are being reported and tracked in PCS/ICIS-NPDES. Single event violation data is required to be reported to the national data system.

– Metric 7a2 – Number of single-event violations at active NPDES non-majors

This metric assesses whether violations determined by means other than DMRs are being reported and tracked in the national data system. This data is not required to be reported to the national data system but the permit issuing authority is required to make and track compliance determinations.

– Metric 7b – Compliance schedule violations

This metric measures the percentage of facilities with unresolved compliance schedule violations, as of the end of the fiscal year. (The universe or denominator is the number of permittees with compliance schedule milestones scheduled to be met in the Federal Fiscal Year (FFY)). Compliance schedules are required to be reported to the national data system for major facilities. This data is not currently required for non-major facilities.

– Metric 7c – Permit schedule violations

This metric measures the percentage of facilities with unresolved permit schedule violations, as of the end of the fiscal year. (The universe or denominator is the number of permittees with permit schedule milestones scheduled to be met in the FFY). Permit schedules are required to be reported to the national data system for major facilities. This data is not currently required for non-major facilities.

– Metric 7d – Percent of active NPDES major facilities with DMR violations reported to the national database

This metric assesses the degree to which DMR data are being correctly entered into PCS/ICIS-NPDES. A list of facilities with such violations is provided with the data metric. The number of facilities listed should be divided by the universe of major permittees to derive a percentage.

Element 8 – Identification of SNC and HPV. Degree to which the state accurately identifies significant noncompliance/high priority violations and enters information into the national system in a timely manner.

- Metric 8a1 – Active NPDES major facilities in SNC during reporting year

This metric presents the number of active NPDES major facilities that are in significant noncompliance during the reporting year. This metric is also important in calculating Metric 8a2. SNC data for major facilities is required to be reported to the national data system.

- Metric 8a2 – Percent of active NPDES major facilities in SNC during the reporting year

This metric calculates the active NPDES major facilities in SNC as a percent of the universe of active NPDES major facilities. This metric is a review indicator metric that allows EPA to measure the success of the NPDES program. SNC data for major facilities is required to be reported to the national data system.

Element 9 – Enforcement Actions Promote Return to Compliance.

Degree to which state enforcement actions include required corrective action (i.e., injunctive relief or other complying actions) that will return facilities to compliance in a specific time frame.

There are no data metrics for Element 9.

Element 10 – Timely and Appropriate Action. Degree to which a state takes timely and appropriate enforcement actions in accordance with policy relating to specific media.

- Metric 10a –NPDES major facilities without timely action as appropriate

This metric is a goal metric identifying the percentage of NPDES major facilities with enforcement actions that were not timely to address SNC violations. It provides a percentage derived by summing the number of NPDES major facilities which, for the year under review:

- have two or more consecutive quarters of SNC effluent violations at the same pipe and for the same parameter, with no formal enforcement action; or
- have two or more consecutive quarters of the same non-effluent SNC violation with no formal enforcement action.

Information Sources 1, 2 and 7 state the expectation that, generally, where a facility has not returned to compliance by the time the same SNC violation appears on the second official Quarterly Noncompliance Report (QNCR), then a formal enforcement action must be taken, unless there is supportable justification for an alternative action such as an informal enforcement action or a permit modification.

Element 11 – Penalty Calculation Method. Degree to which state documents in its files that initial penalty calculation includes both gravity and economic benefit calculations, appropriately using the BEN model or other method that produces results consistent with national policy.

There are no data metrics for Element 11.

Element 12 – Final Penalty Assessment and Collection. Degree to which differences between initial and final penalty are documented in the file along with a demonstration in the file that the final penalty was collected.

There are no data metrics for Element 12.

Element 13 – Optional element can include compliance assistance, pollution prevention, innovation, self disclosure programs, outcome measures, etc. to educate EPA about the scope of a state’s program; or can be used to request recognition or resource flexibility credit when a state runs a satisfactory program.

There are no data metrics for Element 13.

Appendix 1: List of Acronyms

ANCR	Annual Noncompliance Report
CAFO	Concentrated Animal Feeding Operation
CMS	Compliance Monitoring Strategy.
CSO	Combined Sewer Overflow
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EMS	Enforcement Management System.
FFY	Federal Fiscal Year (October 1 through September 30)
ICIS-NPDES	Integrated Compliance Information System – National Pollutant Discharge Elimination System.
NPDES	National Pollutant Discharge Elimination System
PCS	Permit Compliance System
POTW	Publicly Owned Treatment Works
QNCR	Quarterly Noncompliance Report
RNC	Reportable Noncompliance
SNC	Significant Noncompliance
SSO	Sanitary Sewer Overflow
WENDB	Water Enforcement National Data Base

Appendix 2: Information Sources

The following sources are referenced in the metrics discussion which follows.

1. *The Enforcement Management System, National Pollutant Discharge Elimination System (Clean Water Act)*, 1989
2. Memo “Clarification of NPDES EMS Guidance on Timely and Appropriate Response to Significant Noncompliance Violations” from Mark Pollins, Director, Water Enforcement Division, and Betsy Smidinger, Acting Director, Enforcement Targeting and Data Division, May 29, 2008
3. *Policy Framework for State/EPA Agreements*, August 1986, as revised
4. *Permit Compliance System (PCS) Policy Statement*, August 31, 1985, as amended in 2000
5. Memo “ICIS Addendum to the Appendix of the 1985 PCS Policy Statement” from Michael M Stahl, Director, Office of Compliance and James A Hanlon, Director, Office of Wastewater Management, December 7, 2007
6. *Final Single Event Violation Data Entry Guide for the Permit Compliance System (PCS)*, May 22, 2006
7. *Guidance for Preparation of Quarterly and Semi-Annual Noncompliance Reports (Per Section 123.45, Code of Federal Regulations, Title 40)* March 13, 1986 (this document is also included as an attachment to Source 1)
8. *Interim Clean Water Act Settlement Penalty Policy*, March 1, 1995.
9. Memo, “Clean Water Act National Pollutant Discharge Compliance Monitoring Strategy for the Core Program and Wet Weather Sources” from Granta Y. Nakayama, Assistant Administrator, October 17, 2007
10. Memo “Clarification of NPDES Guidance on Timely and Appropriate Response to Significant Noncompliance (SNC) Violations, from Mark Pollins, Director, Water Enforcement Division, July 17, 2007
11. Memo “The Office of Enforcement and Compliance Assurance’s Agency Response to the Evaluation Report: *Better Enforcement Oversight Needed for Major Facilities with Water Discharge Permits in Long-term Significant Noncompliance* (Report No. 2007-P-00023) from Granta Y Nakayama, Assistant Administrator, Aug 14, 2007
12. Memo “Oversight of State and Local Penalty Assessments: Revisions to the Policy Framework for State/EPA Enforcement Agreements”, from Steven A. Herman, Assistant Administrator, June 23, 1993 (this document contains an amendment to source 3)
13. *PCS Quality Assurance Guidance Manual*, August 28, 1992
14. The Code of Federal Regulations including 40 CFR 123.26(e)(1), 40 CFR 123.26(e)(2), 40 CFR 123.26(e)(5) and 40 CFR 123.45c