

EPA

COMMONWEALTH OF VIRGINIA

Department of Environmental Quality

Office of Technical Support

MEMORANDUM

Subject: Guidance Memorandum #98-2005 - Reduced Monitoring

To: Regional Directors

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Date: May 4, 1998

Copies: Regional Permit Managers, Regional Water Permit Managers

This memorandum contains our recommendations for implementation of reduced monitoring frequencies for certain facilities. This guidance (particularly the amount of monitoring reduction) is based on EPA initiatives and guidance.

Disclaimer:

This document provides technical and procedural guidance for establishing monitoring frequencies for certain permittees. This document is guidance only. It does not establish or affect legal rights or obligations. It does not establish a binding norm and is not finally determinative of the issues addressed. Agency decisions in any particular case will be made by applying the Virginia State Water Control Law and the federal Clean Water Act and their implementation regulations on the basis of the site specific facts when permits are issued.

Introduction:

Minimum frequencies for monitoring effluent quality and quantity for the purpose of determining compliance with VPDES permits are recommended by the "Permit Manual". Reductions in those frequencies have usually been made only when requested by a permittee and when there was overwhelming evidence that effluent quality could not be manipulated by a permittee.

EPA published "Interim Guidance For Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (EPA 833-B-96-001) in April 1996. This initiative is an effort to reduce the cost of environmental compliance and to provide incentives to facilities that demonstrate outstanding performance and consistent compliance with their permits. DEQ supports this initiative and this guidance contains our recommendations, based on the EPA

document, for routine application during preparation of all VPDES permits.

We recommend a three step protocol:

1. Upon receipt of an application for permit reissuance, determine if the facility qualifies for reduced monitoring.
2. Determine the degree of monitoring reduction that should be allowed.
3. Make provisions in the permit to require increased monitoring if the facility does not continue to maintain its past compliance record.

There may be cases where reduced monitoring may be appropriate but the circumstances do not fit this guidance (e.g., a limit may not be needed, but antibacksliding prevents its removal). Some minimal monitoring frequency may be appropriate, but would not be based on this guidance. In such cases, the permit writer should provide complete documentation regarding his/her decision in the fact sheet.

Implementation:

This guidance should be applied for all permit reissuance applications received after the date of this memorandum, May 4, 1998.

Qualification Criteria:

Only permittees having exemplary operations that consistently meet permit requirements should be considered for reduced monitoring. No facilities are specifically excluded from the evaluation; however, to ensure protection of aquatic life and human health, disinfection and dechlorination parameters should not be considered eligible for reduced monitoring. Procedures already established, such as the Beneficial Use Attainability Analysis that requires Virginia Department of Health review and concurrence, should be used for this purpose.

To qualify for consideration of reduced monitoring requirements, the facility should not have been issued any letter of noncompliance (LON), notice of violation (NOV), or unsatisfactory laboratory determinations¹, or be under any Consent Orders, Consent Decrees, Executive Compliance Agreements, or related enforcement documents during the past three years.

¹ It is suggested that some discretion be utilized when evaluating the unsatisfactory laboratory determinations. Some of these may be minor infractions that may not affect the data.

Monitoring Reductions:

- For each eligible parameter, calculate the three-year composite average of representative data at each outfall. (Note: D.O., pH, and temperature should be evaluated differently, as described at the end of this section.) This composite average is divided by the permit limit to determine the ratio of actual performance to the permit limit. Table 1, contains the recommended reductions in monitoring frequency based on that ratio.

Table 1. Recommended monitoring reductions

Baseline Monitoring	Actual performance/permit limit			
	75-66%	65-50%	49-25%	<25%
7/wk	5/wk	4/wk	3/wk	1/wk
6/wk	4/wk	3/wk	2/wk	1/wk
5/wk	4/wk	3/wk	2/wk	1/wk
4/wk	3/wk	2/wk	1/wk	1/wk
3/wk	3/wk	2/wk	1/wk	1/wk
2/wk	2/wk	1/wk	2/mo	1/mo
1/wk	1/wk	1/wk	2/mo	1/2mos
2/month	2/mo	2/mo	2/mo	1/quarter
1/month	1/mo	1/mo	1/quarter	1/6mos

- The baseline monitoring frequencies in Table 1 of this guidance will normally be considered the level of monitoring in the existing effective VPDES permit. It is important to recognize that permittees which receive monitoring frequency reductions in accordance with Table 1 are still expected to take all appropriate measures to control both the average level of pollutants of concern in their discharge (mean) as well as the variability of such parameters in the discharge (variance), regardless of any reductions in monitoring frequencies granted from the baseline levels.
- New permittees and upgraded treatment facilities should generate three years of data before being eligible for consideration for reduced monitoring.
- Facilities which satisfy the entry criteria but are not experiencing discharges of 75% or less of their permitted levels of water quality-based parameters should not be eligible for reductions in monitoring/reporting frequencies.
- Dissolved Oxygen: Where the post-aeration system is passive (i.e., cascade steps), reduction of monitoring frequency can be considered on a case-by-case basis. We recommend that reduced monitoring not be allowed during months when minimum or average D.O.s fall within 0.5 mg/l or 1.0 mg/l, respectively, of the permit limit.
- pH: Where pH is not directly adjusted by chemical addition, reduction of monitoring frequency can be considered on a case-by-case basis. We recommend that reduced monitoring not be allowed where minimum or maximum pHs fall within 0.5 units of

the permit limits.

- Temperature: Reduction of monitoring frequency can be considered on a case-by-case basis.

Requiring Higher Monitoring:

Permittees are expected to maintain the performance levels that were used as the basis for granting monitoring reductions. To remain eligible for these reductions, the permittee should not have any violations which result in the issuance of an LON, NOV, or unsatisfactory laboratory determinations, or should not be subject to any new formal enforcement action. For facilities that do not maintain performance levels, we recommend requiring the baseline frequencies in the manual (i.e., all or nothing).

Permit recommendations:

1. List only the reduced monitoring requirements in the Part I.A. page of the permit, adding a footnote reference number following the "Frequency" column heading.
2. Add the following footnote to the Part I.A. page: "See Part I. . * for additional instructions regarding effluent monitoring frequencies."
3. Add the following permit special condition at Part I. ._*:

"Effluent Monitoring Frequencies -- Should the facility permitted herein be issued a Letter of Noncompliance, a Notice of Violation, or unsatisfactory laboratory determination, or be the subject of an active enforcement action, the following effluent monitoring frequencies shall become effective and remain in effect until the permit's expiration date:

(for example:)

pH	1/Day**
BOD ₅	1/Week**
TSS	1/Week**
Dissolved Oxygen	1/Day**

No other effluent limitations or monitoring requirements are affected by this special condition.

- * = Use the appropriate permit special condition reference
- ** = List the appropriate parameters and use the monitoring frequencies that would routinely be assigned for this parameter, as prescribed by the VPDES Permit Manual, BPJ, etc.

Special Considerations:

Discontinuous data: Monitoring cannot be reduced using the methodology described above if effluent data have not been continuously reported over the period of time being considered. Effluent averages from interrupted or discontinuous data sets may not be representative of long-term performance. Monitoring frequencies for discharges that are intermittent or short-term, such as seasonal discharges, and highly variable batch processes, cannot be assessed or reduced using the methods described in this guidance.

Monitoring Frequency "Floor": Current federal NPDES regulations do not establish a monitoring frequency "floor" but do establish a reporting frequency floor of once/year. The monitoring frequency from which reductions could be made in this guidance is considered to be the level of the monitoring in the existing effective VPDES permit. It is important to recognize that the EPA guidance from which Table 1 was taken asserts that there is no loss of statistical confidence in determining whether a permit limit is being violated at reduced monitoring frequencies. Also, the EPA guidance does not advocate any reductions for parameters that are currently monitored only once/quarter.

However, other factors may be considered specific to the facility. If a facility has already been given monitoring reductions due to superior performance, the baseline may be a previous permit. In this case it is not recommended that further reductions be granted.

Exceptions: It may be appropriate to maintain higher monitoring levels in individual situations where there may be a particular interest in human health, endangered species, or a sensitive aquatic environment. An example would be a water body that has water quality problems and it has been determined which point and nonpoint sources are particularly critical from the standpoint of protection of aquatic resources (e.g., endangered species) or human health (e.g., drinking water source). The permit writer may well decide not to reduce monitoring of critical point sources in these instances, while continuing to monitor the overall situation.

Limits below Levels of Detection: We do not recommend reductions in monitoring frequencies in cases where stringent water-quality based limits (WQBELs) are below levels of quantification (the level at which a constituent present in a wastewater sample can be reliably detected and quantified). Permittees with these types of limits will normally be deemed to be in compliance when monitored levels are below the level of quantification; however, by definition, it is not scientifically possible (until analytical methods improve) to certify that the WQBELs are actually being achieved. Thus, we feel it would be inappropriate to develop guidance recommending reductions from established monitoring frequencies for these types of limits.

Use of Daily Maximum Values: This guidance does not provide a specific methodology for considering daily maximum permit values

when considering monitoring/reporting reductions. Consider such situations on a case-by-case basis. There may be concerns over instances where, for example, there are acutely toxic conditions in a receiving water due to violations of daily maximum permit limitations. In such cases, higher monitoring frequencies may be required. In addition, it is important to recognize that dischargers who frequently violate daily maximum permit limitations will likely be unable to achieve high levels of performance in monthly average limits and effectively would not be eligible to participate in this program on that basis. In addition, such facilities may also trigger enforcement criteria.

Some example Questions and Answers are provided as Attachment A to this guidance.

Attachment A

Q1 Can a period of record other than 3 years be used for developing a long term average?

A Yes, permit writers should use best professional judgement when determining what data is representative of a discharge. For a POTW that has just added large significant industrial users or new developments, data before the new connections may no longer be representative of the facility. In this case, three years of data after the user connects would need to be assessed before reduced monitoring could be considered. In the same manner, a significant user may have closed 2 years ago and only the last 2 years of data are representative. Permit writers should avoid using long periods of record to reduce or increase the value of the past 3 years of effluent data.

Q2 A facility was upgraded three years ago as the result of a CSO. The CSO was canceled 2½ years ago. There was an NOV issued the month of the startup due to startup problems. Data since startup shows no violations of the permit's FELs.

A If it is apparent that the facility was substantially in compliance when the month after the upgrade was completed and the delay in canceling the CSO was due to staff/Board processing time, then the permit writer may evaluate the facility for reduced monitoring and document in the fact sheet the reasons the guidance applies. The permit writer may be able to wait for submission of another month of data to be able to evaluate a full 3 years of data. Alternately, the data from the set that was in violation should be evaluated to see if it was representative. If not, it should not be used in step 2 of the evaluation protocol.

Q3 The guidance does not reduce testing that was initially conducted 1/3 months, but does reduce monthly monitoring to 1/6 months in one case. Why is this?

A Data collection at quarterly intervals was not considered by EPA in their analysis. DEQ has adopted EPA's statistical analysis and the assumptions that come with it. EPA apparently did not believe that a quarterly frequency was often enough to develop valid reduced monitoring statistics.

Q4 Some flocculation operations, such as color, phosphorus and metals removal, are controlled by polymer addition. A twist of a valve can increase pollutant concentrations almost instantaneously, similar to chlorination or dechlorination. Does the permit writer have flexibility in deciding whether to reduce monitoring on these types of pollutants?

A Yes, while we would like to reward owners that have conscientiously operated their treatment facilities for three continuous years without violations or enforcement actions, the permit writer should always apply Best Professional Judgement in setting monitoring frequencies. Fact sheets and statements of basis should provide a rationale for monitoring frequencies and reasons why they have or have not been reduced as recommended by Agency guidance.

Q5 A facility has been having 95% flow problems and has reported bypasses and overflows as a result, but has not been issued an NOV or LON. Can monitoring at this facility be reduced?

A Speak to your regional compliance personnel to see if an LON should be issued. It is recommended that only facilities subject to the referenced enforcement actions be disqualified from the reduced monitoring proposed in this guidance.

Q6 County owned pump station overflows have resulted in an LON to the county. Wastewater is treated in a regional STP owned by a PSA. If these overflows were within the 3 year window, is the STP disqualified from receiving reduced monitoring under this guidance?

A It seems contrary to the goals of the program to allow reduced monitoring for a system that has significant overflows. Remember the goal of the program is to reward operations with exemplary operations that consistently meet permit requirements.

However, if the upstream owner's overflows are being addressed in a separate permit or compliance document, this could be justification for applying reduced monitoring to the STP outfall.

Q7 A facility has multiple and independent outfalls. If one outfall has received enforcement actions in the past 3 years, are the rest of the outfalls eligible for reduced monitoring?

A This guidance recommends that the entire facility not receive reduced monitoring if the facility is cited with any of the referenced enforcement actions. As always, with appropriate rationale and documentation, a permit writer may deviate from the guidance on a case-by-case basis.