



DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(INSTALLATIONS AND ENVIRONMENT)
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MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE ARMY
(ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH),
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH),
DIRECTOR DEFENSE LOGISTICS AGENCY (DSS-E),
DEPUTY CHIEF OF NAVAL OPERATIONS (FLEET READINESS
AND LOGISTICS),
DEPUTY COMMANDANT OF THE MARINE CORPS
(INSTALLATIONS AND LOGISTICS)


- (a) Memorandum from Principal Assistant Deputy Under Secretary of Defense (Installations and Environment) to Components, dated 29 September 2003, *Interim Policy on Perchlorate Sampling*
- (1) Interim Guidance on Sampling and Testing for Perchlorate

The 29 September 2003 Interim Policy (reference (a)) directed DoD Components to continue to consolidate data on the occurrence of perchlorate at active and closed installations, ranges, and Formerly Used Defense Sites (FUDS). Enclosure (1) provides interim sampling and testing guidance developed by the Department of Defense Environmental Data Quality Work Group (EDQW) to assist Components in complying with the Interim Policy. In particular, the guidance is intended to alert installations and data users about the limitations of currently approved EPA Methods 314.0 and SW 846-9058 (draft), the potential for false positives, and the need to verify results by alternate, definitive performance-based methods, such as those employing Mass Spectrometry technology.

EDQW continues to work with EPA on development of improved perchlorate test methods. Information regarding the Joint IDQTF/DoD EDQW Rountable and the state of the art in perchlorate analysis can be found on the website: navylabs.navy.mil.

EDQW is in the process of developing DoD-wide comprehensive sampling and testing guidance for the characterization of perchlorate under Environmental Restoration and Range Assessment programs, expected to be issued in late FY04.

My point of contact in this matter is Ms. Jackie Sample, EDQW Chair, (843) 764-7337, email: samplejh@navsea.navy.mil.



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Sampling and Testing for Perchlorate at DoD installations
Interim Guidance

DoD Environmental Data Quality Workgroup
21 January 2004

1 Introduction/Purpose

This document provides interim guidance developed by the DoD Environmental Data Quality Workgroup (EDQW) designed to help DoD Installations comply with the 29 September 2003 *DoD Interim Policy on Perchlorate Sampling*. The EDQW is in the process of developing detailed guidance for the characterization of perchlorate under Environmental Restoration and Range Assessment programs, expected to be issued late in FY 04.

2. Sampling and Testing

a. Safe Drinking Water Act and Clean Water Act

Method 314.0 is the only EPA-approved method for determining perchlorate in drinking water under the Unregulated Contaminant Monitoring Rule (UCMR). The use of Method 314.0 may also be mandated in NPDES permits. Method 314.0, as currently written, however, is not reliable for determining perchlorate in environmental matrices other than drinking water, nor is it reliable for determining perchlorate concentrations below 4ppb in drinking water. If perchlorate is detected using this method at concentrations above the regulatory or permit-specified limits, then results must be verified by alternate, definitive, performance-based methods, such as those employing Mass Spectrometry (MS) technology. If a regulatory agency requests a method reporting limit (MRL) below 4ppb, then that agency should identify (or agree to the use of) an acceptable alternate method or modified Method 314.0 that meets the quality assurance and quality control criteria defined in paragraph 2.c below.

b. Environmental Restoration and Range Assessments

When a determination is made to conduct perchlorate sampling and testing for Environmental Restoration or Range Assessment activities, installations must prepare a site-specific Quality Assurance Project Plan (QAPP) or Sampling and Analysis Plan (SAP). The QAPP/SAP must address the regulatory basis and/or reasons for suspecting perchlorate contamination, potential human-health receptors and migration pathways, sampling locations and rationales, analytical methods, action levels, and data reporting requirements. The QAPP/SAP must also address all quality assurance and quality control considerations contained in this policy.

When conducting sampling and testing for perchlorate in groundwater, soil, sediments, or other environmental matrices, installations shall: 1) document the applicable regulatory limit or action level (i.e. concentration of concern) for each matrix being sampled, and 2) identify analytical methods that can achieve an MRL, in the matrix of concern, *at or below the specified regulatory limit or action level*. If

sampling and testing activities have been requested by a regulatory agency, or are subject to regulatory oversight, then installations should secure regulatory authority approval for use of the method. The collection of split samples is strongly recommended (i.e. where a portion of each sample is sent to a second laboratory).

In most cases, Method 314.0 will not be suitable for use in analyzing environmental samples under environmental restoration or range assessment activities, and either a modified Method 314.0 or alternate method should be used. If Method 314.0 or its modifications are used, then any results detected above the regulatory limit or action limit must be confirmed using definitive analytical methods, (e.g. those employing mass spectrometry (MS)).

c. Analytical Quality Assurance and Quality Control (QA/QC)

Regardless of the method used, method QA/QC requirements, including calibration procedures and procedures for documenting the MRL, must be equivalent to or more stringent than those specified in Method 314.0. Each laboratory must document a MRL *in the specific matrix of concern* that is at or below the regulator-specified action level. The MRL cannot be lower than the lowest calibration standard. Ideally, the action level should be at least three times (3x) the MRL. Laboratories must provide data to demonstrate that laboratory glassware, reagents, and solutions are free from contamination by perchlorate. [Note: a large commercial laboratory recently reported perchlorate contamination in some detergents used to clean laboratory glassware.]

3. Laboratory Qualifications

All laboratories selected to perform perchlorate analysis shall comply with the current *DoD Quality Systems Manual for Environmental Laboratories (DoD QSM)*, which is available on the Navylabs website (www.navylabs.navy.mil/manualsdocs.htm). In addition, the laboratories must demonstrate proficiency to perform the test method through one of the following 1) accreditation under the National Environmental Laboratory Accreditation Program (NELAP), 2) applicable State certification(s), and/or 3) an approval process established by the Component. When perchlorate analysis is to be performed by methods other than 314.0, or if Method 314.0 is to be modified, the laboratory must provide, at a minimum, the Method Standard Operating Procedure (SOP), Demonstration of Capability at the Action Level, and Performance Testing (PT), Method Detection Limit (MDL), and Precision/Accuracy studies for approval by the Component or designee.

4. Reporting and Follow-on Actions

All reported data must meet requirements specified in the DoD QSM. Before reporting any perchlorate results, whether in drinking water or any other matrix, all perchlorate results must be validated by a party independent of the sampling and testing process. Reported data must meet quality assurance/quality control specifications contained in the applicable method, SOP, QAPP/SAP, and DoD QSM, to ensure that the results are suitable for use.