

May 21, 2003

To: Water Resources Discipline

From: Peter F. Rogerson, Senior Chemist
Office of Water Quality

Subject: Approval of a Water Quality Analytical Method for the Determination of Organophosphate Pesticides in Whole Water by the National Water Quality Laboratory

The Office of Water Quality (OWQ) has approved a new Water Quality Analytical Method developed by the National Water Quality Laboratory (NWQL) for the determination of organophosphate pesticides and degradates in whole water. This new method uses continuous liquid-liquid extraction for sample preparation and capillary-column gas chromatography / flame photometric detection for determination of 25 pesticides and degradates along with one surrogate. The new method number is O-3402-03 and can be requested through the NWQL as Schedule 1403. The 25 method compounds are listed in the attached Spreadsheet, along with their Parameter and Method Codes.

Estimated method detection limits range from 0.003 to 0.009 ug/L for the 25 analytes. Most of the compounds were determined with good precision and accuracy, but 3 compounds demonstrated poor recovery and/or high variance. Those 3 compounds are reported with the "E" data qualifier, and are so indicated in the attached Spreadsheet.

This method approval process follows the technical procedure specified in OWQ Tech Memo 98.05, except that this method is described in a Water Resources Investigations Report instead of an Open File Report. The method performance is described in:

Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory – Determination of Organophosphate Pesticides in Whole Water by Continuous Liquid-Liquid Extraction and Capillary-Column Gas Chromatography with Flame Photometric Detection, by Virendra K. Jha and Duane S. Wydoski. U.S. Geological Survey Water Resources Investigations Report 03-XXXX (number to be assigned upon Director's approval).

When approved by the Director, the report will be made available through the NWQL web site at: <http://wwwnwql.cr.usgs.gov/USGS/pubs.html> .

Information about this new method will be available through the NWQL web site <http://wwwnwql.cr.usgs.gov/USGS> shortly. Please click on LIMS Catalog and request Schedule 1403.

If you have questions about the new analytical method, or would like a copy of the report, when it is available, please contact Duane Wydoski (dwydoski@usgs.gov, (303) 236-3240) at the NWQL.

If you have questions about the method approval process, please contact Pete Rogerson (rogerson@usgs.gov, (303) 236-1836).