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# United States Department of the Interior

U.S. GEOLOGICAL SURVEY

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## **NATIONAL WATER QUALITY LABORATORY TECHNICAL MEMORANDUM 1997.03**

February 28, 1997

To: Chief, Office of Water Quality  
Assistant Chief, Office of Water Quality  
Assistant Chief Hydrologist for Technical Support  
Regional Hydrologists  
Chief, NAWQA  
Chief, Office of Ground Water  
Assistant Chief, Office of Ground Water  
Chief, National Water Information System  
Area Hydrologists  
District Chiefs  
Regional Water Quality Specialists  
Assistant Regional Hydrologists for NAWQA  
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Chief, Quality Water Service Unit, Ocala  
Chief, Yucca Mountain Project  
QA Manager, Yucca Mountain Project  
Chief, Branch of Technical Development & Quality Systems  
Employees, National Water Quality Laboratory

From: Peter F. Rogerson, Chief  
National Water Quality Laboratory  
Branch of Analytical Services

Subject: Automated Data Transmission of All 25 Schedule 1379 Pesticides

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Revision: None

Supplemental: None

### **SCOPE**

National Water Quality Laboratory (NWQL) Schedule 1379 determines 25 organonitrogen herbicides and some related degradation products in water. This memorandum details the addition of

13 analytes and 3 surrogates to the automatic data transfer mechanisms into the District National Water Information System (NWIS) Database. There will be no associated price increase to the customer.

## **BACKGROUND**

The NWQL has been analyzing water samples for organonitrogen (triazine) herbicides and related degradation products since 1991 using solid phase extraction and Gas Chromatography/Mass Spectrometry (GCMS) with selected-ion monitoring (SIM). Details of this method are listed in USGS Open-File Report (OFR) 91-519 (Sandstrom and others, 1992) by Schedule 1379. Although this method lists performance data for 24 analytes and 1 surrogate, only 12 analytes have been reported electronically to date. In 1995 the pesticide acetochlor and the surrogate standards alpha-d6-HCH and diazinon d-10 were added to the analysis schedule. The NWQL has been transferring data from 12 compounds electronically along with paper copies of the data for all 25 compounds. Now the NWQL will be transferring all data electronically.

## **DISCUSSION AND CONCLUSIONS**

Table 1 lists the status of all analytes and surrogates reported in Schedule 1379. It also includes Water Data Storage and Retrieval System (WATSTORE) code information and minimum reporting limit (MRL). Reported values less than the MRL will be estimated ("E" qualifier).

All Schedule 1379 Water Year 1997 data will include the additional analytes designated with an asterisk in Table 1. These data will be immediately available to customers because these WATSTORE codes are included in the current edition of the Parameter Code Dictionary (PCD). Surrogate recovery data will also be available when the requested WATSTORE codes are available. See Table 1 for details.

Performance data for each of the new analytes (except acetochlor) are included in the OFR. Acetochlor has also been included in this schedule based upon demonstrated performance in Schedule 2001 (Lindley and others, 1996, p. 965). Table 2 lists performance data for acetochlor based on the lab reagent water spikes contained in the last 12 sample sets analyzed under Schedule 1379. The approximate spike concentration was 4.0 ug/L. When available, complete method performance data for acetochlor will be published in a separate document.

Customers are cautioned that since several WATSTORE codes (listed in Table 3) are shared by Schedules 1379/2001/2010, values will overwrite if subsamples are assigned the same Station ID, date, time, and medium codes. In this case, the last value transmitted to the District database will be the value reported. This problem can be alleviated by incrementing the collection times in the subsamples or other manual intervention as appropriate. (Although NWQL can easily distinguish analytes assigned identical WATSTORE codes in different methods by using the method code, District NWIS users cannot.)

### **References:**

Lindley, C.E., Stewart, J.T., and Sandstrom, M.W., Determination of Low Concentrations of Acetochlor in Water by Automated Solid-Phase Extraction and Gas Chromatography with Mass-Selective Detection: *Journal of AOAC International*, vol.79, no. 4, 1996, p. 962-966.

Sandstrom, M.W., Wydoski, D.S., Schroeder, M.P., Zamboni, J.L., and Foreman, W.T., 1992, *Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory--*

Determination of Organonitrogen Herbicides in Water by Solid-Phase Extraction and Capillary-Column Gas Chromatography/Mass Spectrometry with Selected-Ion Monitoring: U.S. Geological Survey Open-File Report 91-519, 26 p.

Table 1.- Schedule 1379 Analytes with Associated WATSTORE Codes and Minimum Reporting Level

[WATSTORE, Water Data Storage & Retrieval System; CAS, Chemical Abstract Service; MRL, Minimum Reporting Level; ug/L, micrograms per Liter]

WATSTORE Code	Method Code	Analyte	CAS Number	MRL (µg/L)
49260(1)*	F	Acetochlor	34256-82-1	.05
46342	A	Alachlor	15972-60-8	.05
38401	A	Ametryn	834-12-8	.05
39632	A	Atrazine	1912-24-9	.05
04029*	C	Bromacil	314-40-9	.05
04026*	A	Butachlor	23184-66-9	.05
04028*	F	Butylate	2008-41-5	.05
04027*	A	Carboxin	5234-68-4	.05
04041	A	Cyanazine	21725-46-2	.20
04031*	A	Cycloate	1134-23-2	.05
04040	A	Desethylatrazine	6190-65-4	.05
04038	A	Desisopropylatrazine	1007-28-9	.05
04033*	A	Diphenamid	957-51-7	.05
04025*	A	Hexazinone	51235-04-2	.05
39415	A	Metolachlor	51218-45-2	.05
82630	A	Metribuzin	21087-64-9	.05
04037	A	Prometon	1610-18-0	.05
04036	A	Prometryn	7287-19-6	.05
04024*	F	Propachlor	1918-16-7	.05
38535	A	Propazine	139-40-2	.05
04035	A	Simazine	122-34-9	.05
04030*	A	Simetryn	1014-70-6	.05
04032*	A	Terbacil	5902-51-2	.05
04023*	A	Trifluralin	1582-09-8	.05
04034*	A	Vernolate	1929-77-7	.05

- (2) Alpha d-6 HCH (Surrogate-percent recovery)
- (3) Terbutylazine (Surrogate-percent recovery)
- (2) Diazinon d-10 (Surrogate-percent recovery)

Footnotes:

- \* New analyte in database
- (1) Not included in original Open-File Report
- (2) Surrogate - WATSTORE code has been requested; data will be available to customers when WATSTORE code has been assigned and included in update of Parameter Code Dictionary (PCD). Not included in original OFR.
- (3) Surrogate - WATSTORE code has been requested and should be included in March 1997 release of Parameter Code Dictionary. Data will be available to customers at that time.

Table 2.- Performance Data for Acetochlor

Compound Name	Mean Recovery (Percent)	Standard Deviation (Percent)	Percent Relative Standard Deviation
Acetochlor	83.3%	5.4%	6.5%

Table 3.- WATSTORE Codes Shared by Schedules 1379/2001/2010

[WATSTORE, Water Data Storage & Retrieval System; MRL, Minimum Reporting Level; µg/L, micrograms per Liter]

WATSTORE Code	Method Code	Analyte	Sch 1379 MRL (µg/L)	Sch 2001/2010 MRL*(µg/L)
49260	F	Acetochlor	.05	.002
46342	A	Alachlor	.05	.002
39632	A	Atrazine	.05	.001
04028	F	Butylate	.05	.002
04041	A	Cyanazine	.20	.004
04040	A	Desethylatrazine	.05	.002
39415	A	Metolachlor	.05	.002
82630	A	Metribuzin	.05	.004
04037	A	Prometron	.05	.018
04024	F	Propachlor	.05	.007
04035	A	Simazine	.05	.005
04032	A	Terbacil	.05	.007
04023	A	Trifluralin	.05	.002

\*Schedule 2001/2010 minimum reporting limits are lower than those in Schedule 1379 because the extracted sample volume is ten times greater.

Effect on Data Base: There is no effect on existing data.

Supersedes: None

Key Words: Triazine, Organonitrogen, Organic, Schedule 1379

Distribution: See above plus the Netnews usgs.labnews & .water.quality; WRD Secretaries; Field and Project Offices; Hydrologic Technicians; and <http://wwwnwql.cr.usgs.gov/>