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NATIONAL WATER QUALITY LABORATORY

TECHNICAL MEMORANDUM 2001.01

8 May 2001

Subject: Elimination of National Water Quality Laboratory Blank Schedule 172
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Revision: None
Effective Date
of Change: June 1, 2001

PURPOSE

Effective June 1, 2001, The National Water Quality Laboratory (NWQL) will no longer offer blank schedule 172. Schedule 1673 will be offered as a replacement for analysis of trace metal blanks (including equipment, samplers, QA and all other types). This technical memorandum describes the reasons for eliminating the schedule and provides information about a new schedule that will better meet our customer's needs.

BACKGROUND

In 1994, schedule 172 was established for the Water Resources Division to evaluate field and equipment blanks as part of the ultraclean trace metal protocols (Horowitz and others, 1994). The schedule was a combination of 23 inductively coupled plasma spectroscopy (ICP) and inductively coupled plasma-mass spectrometry (ICP-MS) determinations. At that time, schedule 172 offered the lowest reporting levels possible at the NWQL for metal constituents. Environmental data were censored to higher reporting levels than blank data. Implementation of the LT-MDL procedure (Childress and others, 1999) at the NWQL has eliminated the need for separate schedules (with different reporting levels) for field blanks and environmental samples.

DISCUSSION

Some customers have expressed concerns about using different methods to analyze field blanks and environmental samples, because results obtained by different methods might have data comparability implications. Schedule 1673 will allow blanks and environmental samples to be analyzed by using consistent methodology to provide better data comparability than with schedule 172.

For many constituents, schedule 1673 will provide lower reporting levels than schedule 172. Other constituents will have higher reporting levels than were used in schedule 172. The reporting levels were generated through the LT-MDL process, and are more representative of what the laboratory can actually determine. The new schedule also provides data for V, Li, As, and Se (which were not available on

schedule 172). Results for Al, Zn, Ba, and Ag will continue to be reported for FY2001 using method reporting levels. The following table lists comparative data for schedules 172 and 1673.

[NWIS, National Water Information System; ug/L, microgram per liter; mg/L, milligram per liter; uS/cm, microsiemens per centimeter; NA, not available]

Constituent	Schedule 172 lab code	Schedule 172 NWIS code	Schedule 172 method reporting level (MRL)	Schedule 1673 lab code	Schedule 1673 NWIS code	Schedule 1673 laboratory reporting level (LRL) except where noted	Reporting units
Aluminum	1877	01106H	0.3	1784	01106G	1.00 MRL	ug/L
Antimony	1878	01095H	0.2	1785	01095G	0.048	ug/L
Arsenic	NA			2503	01000D	0.18	ug/L
Barium	1879	01005H	0.2	1786	01005G	1.00 MRL	ug/L
Beryllium	1880	01010H	0.2	1787	01010G	0.06	ug/L
Boron	1894	01020H	2	2504	01020G	7	ug/L
Cadmium	1881	01025H	0.3	1788	01025G	0.037	ug/L
Calcium	1895	00915H	0.002	659	00915D	0.011	mg/L
Chromium	1882	01030H	0.2	1936	01030I	0.8	ug/L
Cobalt	1883	01035H	0.2	1790	01035G	0.015	ug/L
Copper	1884	01040H	0.2	1791	01040G	0.23	ug/L
ICP setup	2002	None	None	2002	None	None	
ICP-MS setup	2181	None	None	2181	None	None	
Iron	1896	01046H	3	645	01046D	10	ug/L
Lead	1885	01049H	0.3	1792	01049G	0.08	ug/L
Lithium	NA			2505	01130C	0.3	ug/L
Magnesium	1897	00925H	0.001	663	00925C	0.008	mg/L
Manganese	1886	01056H	0.1	1793	01056G	0.1	ug/L
Molybdenum	1887	01060H	0.2	1794	01060G	0.2	ug/L
Nickel	1888	01075I	0.2	1795	01065G	0.06	ug/L
pH	68	00403A	None	68	00403A	None	pH
Selenium	NA			2506	01145C	0.33	ug/L
Silica	1899	00955H	0.02	667	00955D	0.09	mg/L
Silver	1889	01075I	0.2	1796	01075G	1.00 MRL	ug/L
Sodium	1898	00930H	0.025	675	00930C	0.06	mg/L
Specific conductance	69	90095A	1.0 MRL	69	90095A	1.0 MRL	uS/cm
Strontium	1892	01080H	0.1	2507	01080I	0.08	ug/L
Thallium	1893	01057H	0.1	2508	01057I	0.041	ug/l
Uranium	1890	22703I	0.2	1797	22703G	0.018	ug/L
Vanadium	NA			2509	01085E	0.21	ug/L
Zinc	1891	01090H	0.5	1798	01090G	1.00 MRL	ug/L

CHANGES TO PRESENT SCHEDULES

Schedule 172 will no longer be available for use. Use schedule 1673 as a replacement. Requests for schedule 172 will be moved automatically to schedule 1673. Pricing information is available from the NWQL catalog (<http://wwwnwql.cr.usgs.gov/USGS/Catalog/CatIntro.html>). Contact Glenda Brown (303/236-3160, gebrown@usgs.gov) for additional information.

REFERENCE

Horowitz, A.J., Demas, C.R., Fitzgerald, K.K., Miller, T.L., and Rickert, D.A., 1994, U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water: U.S. Geological Survey Open-File Report 94-0539, 57 p.

Childress, C.J.O., Foreman, W.T., Connor, B.F., Maloney, T.J., 1999, New reporting procedures based on long-term method detection levels and some considerations for interpretations of water-quality data provided by the U.S. Geological Survey National Water Quality Laboratory: U.S. Geological Survey Open-File Report 99-193, 19 p.

EFFECT ON THE DATA BASE

None.

//signed//

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