



Civil & Environmental Consultants, Inc.

May 8, 2014

Mr. Bill Sadler, P.G.
Arkansas Department of Environmental Quality
Solid Waste Management Division
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

AFIN: 63-00155
Pmt #: 0261-S1-R2
REC'D
SCAN
MAY 09 2014
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To: BS7 file

Dear Mr. Sadler:

Subject: Updated Method to Determine Total and Dissolved Metals from
SW-846 6010B to 6010C
Model Fill Landfill; Permit #0151-S1-R4, AFIN# 60-00565
Saline County Landfill, Permit #0261-S1-R2, AFIN# 63-00155
CEC Project 121-364

This analytical method update notification is being submitted by Civil & Environmental Consultants, Inc. (CEC) on behalf of BFI Waste Systems of Arkansas, LLC. The attached letter was received from the Director of Quality Assurance at First Environmental Laboratories (First Environmental) regarding an update to the method used to determine total and dissolved metals from SW-846 6010B to 6010C. The update to the method reference is driven in part by new requirements published in the Federal Register on October 23, 2013 titled "Waste Management System; Testing and Monitoring Activities; Update V of SW-846," as well as proposed changes to National Environmental Laboratory Accreditation Conference (NELAC) accreditation requirements.

The update to the method reference from 6010B to 6010C is intended to increase the overall confidence in sample results; however, in order to meet the requirements of the Lower Limit of Quantification (LLOQ), new reporting limits had to be established. The table included in the attached letter compares the new reporting limits to the old limits and also references Primary Drinking Water Standards-Maximum Contaminant Levels (MCLs) established for each constituent. The new reporting limits established for the 6010C method continue to be at or below the MCL for each constituent, with the exception of Thallium. Thallium samples will be subcontracted to a different laboratory to be analyzed using method 6020 (ICP-MS) in order to maintain a reporting limit that meets the MCL. Facility representatives and CEC discussed these changes with First Environmental and we understand and agree with the need for the changes.

Mr. Bill Sadler – Arkansas Department of Environmental Quality
CEC Project 121-364
Page 2
May 8, 2014

Please review the attached letter from First Environmental at your earliest convenience and contact me at (314) 656-4566 with any questions regarding the use of the updated methods for analyzing total and dissolved metals during the routine groundwater monitoring events at the Model Fill and Saline County landfills. The laboratory plans to begin using method 6010C during the First Quarter 2014 monitoring event.

Sincerely,

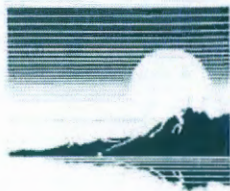
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



Dana Sincox
Project Manager

Enclosure: First Environmental Laboratories, Inc. March 17, 2014 Letter

cc: Mr. Eric Ballenger, Republic Services (electronic)
Mr. Darrin Kempker, Republic Services (hard copy)
Mr. David Jaros, Terracon (electronic)



**First
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Laboratories, Inc.**

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March 17, 2014

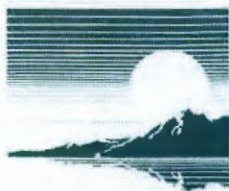
Mr. Eric Ballenger
Hydrogeology Manager
REPUBLIC SERVICES
26W580 Schick Rd
Hanover Park IL 60103

Dear Mr. Ballenger:

We are updating the method used by First Environmental to determine total and dissolved metals from SW-846 6010B to 6010C. This change will require updates to the reporting limits as shown in the table below.

**Arkansas Landfill Sites:
Saline and Model Fill**

Analyte	Old RL (ug/L)	New RL (ug/L)	MCL (ug/L)
Aluminum	50	100	--
Antimony	6	6	300
Arsenic	2	10	10
Barium	1	5	2000
Beryllium	1	4	4
Boron	10	50	--
Cadmium	1	5	5
Chromium	1	5	100
Cobalt	1	5	--
Copper	1	5	1300
Iron	10	50	--
Lead	2	5	15
Manganese	1	5	--
Molybdenum	10	10	--
Nickel	1	5	--
Selenium	2	10	50
Silicon	100	100	--
Silver	1	5	100
Strontium	100	10	--
Thallium *	2	10	2



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Analyte	Old RL (ug/L)	New RL (ug/L)	MCL (ug/L)
Tin	20	20	--
Titanium	5	10	--
Vanadium	10	10	--
Zinc	5	10	--
Calcium	100	500	--
Magnesium	100	500	--
Potassium	100	500	--
Sodium	100	500	--

RL = Reporting Limit

*To meet the 2.0 ug/L MCL, Thallium will be subcontracted for method 6020 (ICP-MS) analysis.

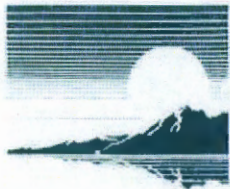
There are several drivers requiring us to make this change as detailed below:

- Updating our method reference from 6010B to 6010C,
- Requirements of "Waste Management System; Testing and Monitoring Activities; Update V of SW-846" published in Federal Register (FR) on 10/23/13, and
- proposed changes to NELAC accreditation requirements

The above drivers have a common thread relating to the determination of the Lower Limit of Quantification (LLOQ). The above updates state that the LLOQ should be equal to the lowest standard in the calibration curve. If the lowest calibration standard is NOT equal to the reporting limit, the reporting limit must be verified by running a standard at the reporting limit and meeting established acceptance criteria. The lowest point of quantitation as proven by either of these mechanisms defines the lowest reporting limit. Furthermore, the Federal Register referenced above stated, "as methods are updated, EPA will remove the reference to the MDL".

Reporting limits have historically been set based on calculations from MDL studies. Our old reporting limits were in many cases at or very near the MDL. We have found through detailed internal studies that these old limits can no longer meet the updated criteria specified in the above updates. Method 6010 ICP analysis is not amenable to incorporating a standard at the reporting limits in the calibration curve, therefore, according to the requirements of the above updates, we need to analyze a check standard at the reporting limit. The new method cannot routinely meet the acceptance criteria of $\pm 30\%$ of the true value for the Lower Limit of Quantitation Check Standard, for the old reporting limits. The new reporting limits are set at concentrations that enable us to meet this requirement.

In most cases, within our laboratory we have already implemented the inclusion of a standard equal to the reporting limit in the curve, or if that is not possible, verification of the reporting limit within a known acceptance range. The changes we are making allow us to meet these requirements for metals as well. We believe that you will soon be seeing similar changes to



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reporting limits from other laboratories as they transition to the updated Method. We also believe that the methodology for establishing reporting limits under the updates is an improvement and will result in greater overall confidence in sample results.

Please contact me at 603-778-1200, if you have any questions.

Sincerely,

Lorrie Walker

Director Quality Assurance

CEC (Franklin, TN) / Mike Johnson and Edward Hood

Terracon (AR) / David Jaros