

IFA-Proficiency Testing Scheme for Water Analysis

Round M168
Metals

Sample Dispatch: 4 September 2023

In accordance with the procedure: AVKPS.02

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and Life Sciences, Vienna**
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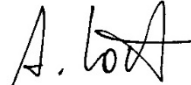
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Word-version round: M168	Date / Signature:	09.10.2023	

Report: 1st edition, created on 6 October 2023 by Ing. Uta Kachelmeier
103 pages

This report summarises the results of round M168 (trace metals) within the IFA-Proficiency Testing Scheme for Water Analysis. The samples M168A and M168B were distributed to 27 participants on Monday, 4 September 2023. Each participant received two samples of 250 mL filled into LDPE bottles.

Closing date for reporting results to the IFA-Tulln was Friday, 29 September 2023. 26 participants submitted results. To make the participants anonymous, each laboratory obtained a letter code by random.

Samples

The samples consisted of artificial ground water spiked with pure standards. For sample preparation, ultrapure water was spiked with concentrated solutions of salts in order to simulate the ionic composition of natural Austrian ground water. The following ultrapure salts were used: CaCO_3 , $\text{Mg}(\text{NO}_3)_2$, NaCl , KCl , besides ultrapure H_2SO_4 and HCl . By this, the matrix of the samples consisted of about 45.9 mg/L Ca, 19.4 mg/L Mg, 9.1 mg/L Na, 1.42 mg/L K, 19.2 mg/L SO_4^{2-} and 15.4 mg/L Cl^- (M168B: 15.9 mg/L Cl^-). Ultrapure HNO_3 (0.5 % v/v) was added to stabilise the sample at a pH below 2, which meets the standard sampling procedure in the Austrian monitoring program.

Traces of Al, As, Cd, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Se, U and Zn were added, using certified spectroscopy standards. For most of the compounds added to the samples, the target concentrations were higher than the minimum quantifiable values of the Austrian ground and river water monitoring program. The calculation of the target concentrations of the compounds was based on the mass of standard added to the samples.

Homogeneity, accuracy and stability tests at the IFA-Tulln

Some samples of the round M168A and M168B were analysed for all investigated parameters prior to shipment to the participants. The results are listed in the results tables and the parameter oriented part of the report ("IFA result").

Stability tests will be carried out together with the accuracy tests of the following round (M169).

According to our experience, the concentrations of Al, As, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, U and Zn in the samples remain stable up to 18 months when stored at 4-6 °C in the dark. For the Hg a concentration decrease of 2 % to 4 % per month can be expected.

Results

Data evaluation was based on target concentrations that were calculated from the weights of the standards used to produce the samples. Their uncertainty intervals correspond to the expanded uncertainty (coverage factor $k = 2$) as described in the EURACHEM/CITAC Guide "Quantifying Uncertainty in Analytical Measurement, 3rd Edition (2012)".

Recoveries for individual laboratory results and overall mean values are related to the assigned concentrations. The results were tested for outliers by application of the Hampel outlier test (level of significance 99 %).

The recoveries of the target concentrations, calculated from outlier-corrected data mean values ranged between 93.8 % (Pb and Zn in sample M168A) and 108.2 % (As in sample M168A).

The between laboratory CVs covered the ranged between 2.7 % (Ni in sample M168A) and 10.8 % (Pb in sample M168A).

All confidence intervals of the outlier-corrected laboratory mean values except that for As ($108.2 \% \pm 7.0 \%$) and Cu ($95.1 \% \pm 2.2 \%$) in sample M168A encompass the corresponding target values with their uncertainties. For all other parameters, no difference could be detected between target concentrations and outlier corrected laboratory mean values statistically.

z-scores

The most common approach to calculate a z-score is given by

$$z = \frac{x_i - X}{\sigma_{pt}}$$

z	z-score
x_i	result of laboratory
X	target value or mean value („consensus value“)
σ_{pt}	standard deviation for proficiency assessment

Thus, the z-score is the ratio of the estimated bias (difference between result and target value) and a standard deviation. The z-score criteria were determined from relative standard deviations from all interlaboratory comparisons that have been organised by the IFA-Tulln from 2012 to 2022. They represent average performance data of all former participating laboratories.

This approach was chosen, because standard deviations of the outlier-corrected measurements substantially vary between individual proficiency test rounds. Averaging standard deviations from proficiency testing rounds of several years can provide standard deviations for proficiency assessment on a broad data basis. It is therefore more suitable than a standard deviation taken directly from the interlaboratory comparison (EN ISO/IEC 17043:2010, B.3.1.3). Another advantage of previously determined standard deviations is that the participants can foresee which z-scores can be expected by their routine analysis methods before participation.

Calculation example:

A laboratory found 73.7 µg/L for the parameter Aluminium (recovery of 102 %). The target value for Aluminium was 72.3 µg/L (100 %). The relative standard deviation for proficiency assessment is given in the table below (as well as in the annual program www.ifatest.eu) by 7.7 %, which is 5.6 µg/L Al, when based on the target value.

$$z = \frac{x_i - X}{\sigma_{pt}} = \frac{73.7 \mu\text{g/L} - 72.3 \mu\text{g/L}}{5.6 \mu\text{g/L}} \approx 0.25 \quad \text{or} \quad \frac{102 \% - 100 \%}{7.7 \%} \approx 0.25$$

z	z-score	
x_i	73.7 µg/L	equivalent to 102 % (result of the laboratory)
X	72.3 µg/L	equivalent to 100 % (target value)
σ_{pt}	5.6 µg/L	equivalent to 7.7 % (standard deviation for proficiency assessment see table below)

In the case of recalculation, deviations in the last digits may occur due to the fact that rounded values are given in the report for clarity.

The following table lists the standard deviations for proficiency assessment and their limits of applicability. Z-scores were only calculated, if the target values were higher than these limits.

Parameter	standard deviation for proficiency assessment	Lower limit
Aluminium	7.7 %	7.5 µg/L
Arsenic	7.3 %	0.5 µg/L
Cadmium	5.4 %	0.1 µg/L
Chromium	6.3 %	0.5 µg/L
Copper	7.8 %	1.0 µg/L
Iron	6.7 %	10 µg/L
Lead	6.7 %	0.3 µg/L
Manganese	5.3 %	2.0 µg/L
Mercury	11 %	0.2 µg/L
Nickel	7.4 %	0.75 µg/L
Selenium	9.4 %	0.3 µg/L
Uranium	5.5 %	0.35 µg/L
Zinc	7.0 %	3 µg/L

Normally, a classification based on z-scores is made this way:

z-Score	Classification
≤2	satisfactory
2< z <3	questionable
≥3	unsatisfactory

The z-scores are listed in the parameter-oriented evaluation in the tables next to the recoveries. Additionally, each laboratory receives a sheet on which the obtained z-scores are summarized and graphically presented. The standard deviations for proficiency assessment are given in concentration units there.

An overview table of all z-scores can be found after the result tables in the parameter-oriented part.

Illustration of results

An explanation to the illustration of the results is given on the following page.

The **laboratory oriented part** contains the measurement results and reported uncertainties of each individual laboratory for all parameters together with the achieved recoveries in graphical and tabular form. This part of the report also lists tables with the results originally reported by the laboratories.

In the **parameter oriented part** the reported results and corresponding uncertainties are illustrated together with recoveries of the target values and the z-scores for each parameter and all laboratories. This information is presented in graphical and tabular form. Results, which were identified as outliers by the Hampel test are marked with an asterisk (*) in the column "out". These values were not considered for the calculation of statistical parameters (mean values, standard deviations and confidence intervals). Moreover, the parameter oriented part contains the uncertainties of the target values. The uncertainty intervals correspond to the expanded uncertainty (coverage factor $k = 2$) as described in the EURACHEM / CITAC Guide "Quantifying Uncertainty in Analytical Measurement" 3rd Edition (2012) ". The uncertainty interval of the reference concentration is illustrated in the graphs as a grey band around the 100 % recovery line.

Results, for which no recoveries could be calculated, are illustrated by one of the following symbols: **FN** (false negative), **FP** (false positive) or • - symbol.

- "FN": a result is considered false negative when the "< result" reported is lower than the corresponding target value, or the measured value was given as "0" when the substance was added.
- "FP": False positive results can only be obtained for compounds that were evaluated on the basis of a "< target value". A result is termed FP if it does not include (strike) the "< target" with its measurement uncertainty.
- "•": All other results for which no recoveries can be calculated are illustrated by this symbol

Tulln, 6 October 2023

Sample M106A
Parameter Copper

Target value ± U (k=2) 4,79 µg/l ± 0,13 µg/l
 IFA result ± U (k=2) 4,79 µg/l ± 0,38 µg/l
 Stability test ± U (k=2) 4,69 µg/l ± 0,38 µg/l

*Obtained from sample preparation, U=uncertainty
 Determined at IFA prior to shipment of samples*
Determined at IFA 3 weeks after sample dispatch

Lab Code	Result	±	Unit	Recovery	z-Score
A	5,16	0,4128	µg/l	108%	0,90
B	4,22	0,42	µg/l	88%	-1,38
C	4,45	0,13	µg/l	93%	-0,83
D			µg/l		
E			µg/l		
F	4,10	0,08	µg/l	86%	-1,68
G			µg/l		
H			µg/l		
I	4,75	0,74	µg/l	99%	-0,10
J	<5		µg/l	.	.
K	4,76		µg/l	99%	-0,07
L	<10		µg/l	.	.
M	4,8	0,5	µg/l	100%	0,02
N	3,7	0,4	µg/l	77%	-2,65
O	4,47	0,447	µg/l	93%	-0,78
P	6,0		µg/l	125%	2,94
Q	4,17	0,2	µg/l	87%	-1,51
R	4,6	0,8	µg/l	96%	-0,46
S	4,44	0,67	µg/l	93%	-0,85
T			µg/l		
U	4,675	0,935	µg/l	98%	-0,28
V	5,0	0,50	µg/l	104%	0,51
W	3,54	0,3	µg/l	74%	-3,03
X	7,108 *	0,749	µg/l	148%	5,63
Y	<10		µg/l	.	.
Z			µg/l		
AA	<3,0		µg/l	FN	
AB	3,775	0,107	µg/l	79%	-2,46
AC	<10,0		µg/l	.	.

Recovery of target value in percent

z-Score of the laboratory

An asterik indicates a result detected as outlier by Hampel test

Interval expected to encompass target value as stated by participant

	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,65 ± 0,57	4,51 ± 0,42	µg/l
Recov. ± CI(99%)	97,1 ± 12,0	94,1 ± 8,8	%
SD between labs	0,84	0,59	µg/l
RSD between labs	18,1	13,2	%
n for calculation	18	17	

Between laboratory standard deviation

Laboratory mean and recovery of target value with corresponding confidence intervals (p=99%)

Number of results used for calculation of statistic parameters

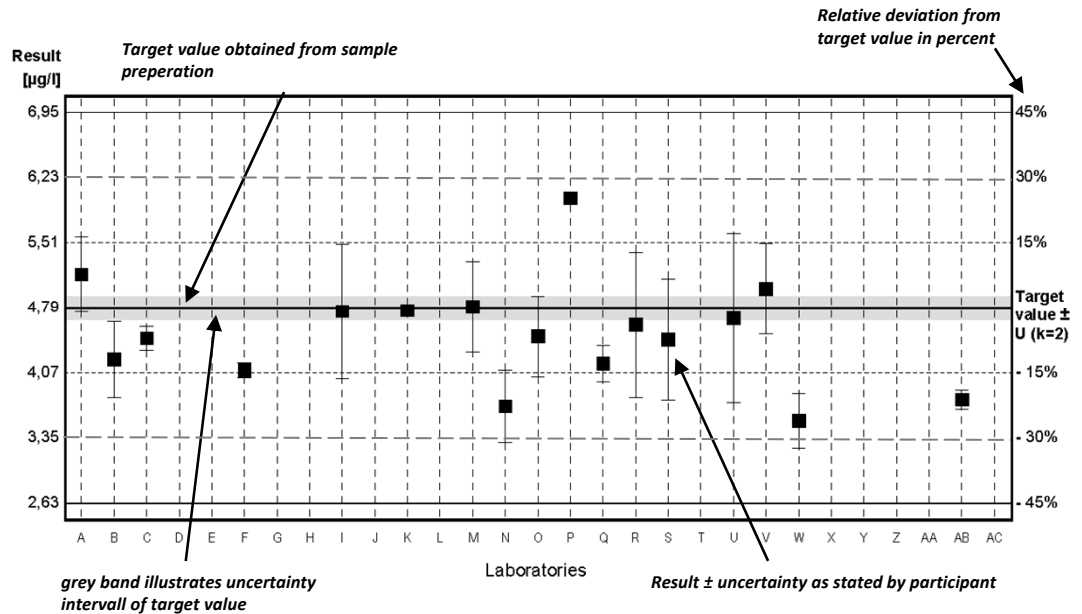


Diagram 1: Measurement results and their uncertainties

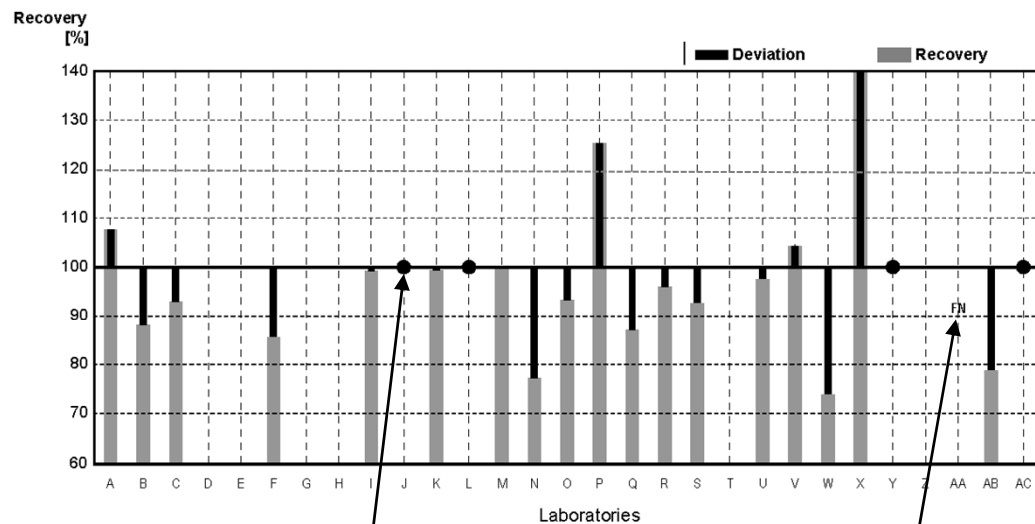


Diagram 2: Recoveries and deviations from target values

EXPLANATION

Illustration of Results Tables and Parameter Oriented Part

Round M168
Metals

Sample Dispatch: 4 September 2023

Results Sample M168A

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
Target value	26.2	1.552	6.85	0.1031	2.89	71.7	4.60
IFA result	26.2	1.50	6.86	0.109	2.95	70	4.58
A	23.32	<5	4.42	<1	2.88	65.18	5.83
B	42.82	1.437	5.764	0.086	2.854	70.70	4.339
C							
D	20.7	1.54	7.22	0.103	2.66	65.6	4.16
E	26.2	1.64	6.61	0.112	2.99	71.8	4.29
F	22.8	1.94	0.380	1.34	3.14	82	2.88
G	26.7	1.69	6.93	<0.2	2.91	81.2	3.28
H	26.5	1.97	6.44	<0.4	<5	69.5	<5
I							
J	24.5	1.60	6.41	0.110	2.83	80.1	4.53
K	23.4	1.88			2.17	84.3	4.20
L	26.3	1.76	6.40	<0.1	2.83	69.4	4.37
M	24.6	1.57	6.55	0.103	2.78	73.3	4.35
N	26.9	1.71	6.4	<0.5	<5	71	4.38
O	25.0					76.0	7.0
P						69.8	
Q						93.0	
R	27.0	1.60	7.10	0.110	3.00	72.0	4.50
S			5.6	<0.1	2.47		1.84
T	25.8	1.65	6.5	<0.2	2.93	72.3	4.35
U	24.6	1.67	6.98	<0.100	2.96	64.7	4.59
V	25.8	1.53	6.69	0.106	2.98	73.5	5.31
W	29.8	1.69	6.02	0.096	3.00	75.8	4.40
X	26.1					66	<10
Y	28.0						
Z	31.3						
AA	25.9	0.96	7.2	0.110	2.76	70	4.42

All data in µg/L

Measurement Uncertainties Sample M168A

	Aluminium ±	Arsenic ±	Lead ±	Cadmium ±	Chromium ±	Iron ±	Copper ±
Target value	0.4	0.014	0.05	0.0019	0.03	0.3	0.04
IFA result	1.4	0.16	0.18	0.006	0.11	5	0.23
A	2.47		0.37		0.18	8.02	0.33
B							
C							
D	1.26	0.052	0.363	0.0033	0.076	1.62	0.073
E	0.379	0.021	0.10	0.002	0.047	0.55	0.036
F	0.2	0.05	0.05	0.05	0.05	0.2	0.05
G	4.01	0.25	1.04		0.44	12	0.49
H							
I							
J							
K	0.53	0.0230			0.211	1.26	0.063
L	5.26	0.35	1.28		0.57	13.88	0.87
M	4.9	0.24	0.79	0.012	0.42	11.0	0.52
N	5.4	0.342	1.27			14.2	0.88
O	4					4	5
P						5.6	
Q						12.03	
R	2.70	0.192	0.57	0.0088	0.360	18.72	0.360
S			0.56	0.025	0.25		0.18
T	2.58	0.25	0.65		0.29	7.23	0.435
U	0.795	0.107	0.0751		0.107	0.508	0.0801
V	6.5	0.46	1.7	0.027	0.89	22	1.33
W							
X	4.4					12	
Y	1.50						
Z	6.3						
AA	3.9	0.14	1.1	0.017	0.41	11	0.66

All data in µg/L

Results Sample M168A

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
Target value	27.82	5.42	2.655	3.51	0.455	22.3
IFA result	27.2	5.3	2.90	3.55	0.447	21.6
A	25.26	5.57	2.439	2.97		20.31
B	28.12	5.435	2.527	3.854	0.394	24.36
C						
D	25.5	4.33	2.53	3.48	0.430	21.0
E	27.3	5.12	2.59	3.54	0.432	20.5
F	32.8	0.480		60	334	18.5
G	27.4	5.24	2.82	3.87	0.494	21.3
H	26.9	5.17		3.71	<2	19.9
I			2.743			
J	27.1	6.61		5.27	0.400	22.4
K	21.4	4.14		4.36	0.368	27.5
L	26.6	5.19	2.66	3.45	0.438	20.4
M	26.6	5.19	2.71	3.40	0.414	21.4
N	28.8	5.4	2.56	3.72	0.440	19.3
O	28.0					26.0
P		5.27				
Q	29.0					
R	28.0	5.50	2.842	3.50	0.480	21.0
S	24.5	4.47	2.51			30.2
T	27.5	5.3	2.28	2.97	<1.0	21.2
U	26.9	5.52	2.58	3.63	<1.00	22.1
V	27.8	5.35	2.92	3.57	<0.5	21.8
W	28.6	5.47	2.34	3.08	0.430	19.0
X	25.7					
Y						
Z			2.91			
AA	26.7	5.3		3.09		21.3

All data in µg/L

Measurement Uncertainties Sample M168A

	Manganese ±	Nickel ±	Mercury ±	Selenium ±	Uranium ±	Zinc ±
Target value	0.15	0.05	0.018	0.03	0.006	2.7
IFA result	1.8	0.2	0.54	0.41	0.050	2.6
A	1.87	0.30	0.24	0.18		1.87
B						
C						
D	0.65	0.427	0.023	0.088	0.0087	0.97
E	0.32	0.08	0.069	0.010	0.006	0.153
F	0.2	0.05		0.2	2	0.2
G	4.11	0.79	0.42	0.58	0.074	3.20
H						
I			0.48			
J						
K	0.412	0.078		0.84	6.43	0.312
L	5.31	1.04	0.53	0.69	0.074	4.07
M	3.2	0.57	0.60	0.51	0.062	3.2
N	5.8	1.08	0.51	0.74	0.088	3.86
O	2					10
P		0.42				
Q	4.24					
R	2.80	0.550	0.426	0.525	0.0240	2.10
S	2.5	0.45	0.25			3.0
T	2.75	0.53	0.264	0.446		2.12
U	0.711	0.0288	0.0121	0.0631		0.188
V	8.3	1.3	0.88	1.4		5.5
W						
X	4.7					
Y						
Z			0.88			
AA	4.0	0.8		0.46		3.2

All data in µg/L

Results Sample M168B

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
Target value	50.3	5.73	2.91	1.567	9.78	17.54	1.41
IFA result	50	5.4	2.79	1.63	9.8	16.4	1.39
A	45.90	7.64	<5	1.50	9.23	15.31	3.23
B	69.31	5.271	2.432	1.268	9.542	17.96	1.944
C							
D	41.2	5.80	2.86	1.55	9.09	16.3	1.35
E	59.7	6.49	3.31	1.71	10.3	19.7	1.31
F	33.6	4.06	0.390	1.42	9.34	19.3	0.150
G	52.4	6.04	2.82	1.53	9.78	26.9	<1
H	50.9	6.01	2.70	1.56	9.84	17.5	<5
I							
J	49.1	5.90	2.71	1.62	9.55	29.7	1.44
K	46.4	7.14			7.43	44.4	1.19
L	50.5	5.87	2.72	1.50	9.47	17.1	1.29
M	48.1	5.72	2.78	1.54	9.51	17.5	1.33
N	52	6.50	2.66	1.50	10.1	17.7	1.35
O	45.0					22.0	5.0
P						17.1	
Q						33.0	
R	50.0	5.50	3.00	1.63	9.90	21.0	1.40
S			2.00	1.46	9.1		<1
T	48.4	5.66	2.76	1.62	9.61	17.6	1.40
U	49.0	6.22	2.94	1.58	9.34	17.2	1.42
V	51.1	5.76	2.81	1.62	9.87	17.8	1.62
W	55.4	5.99	2.60	1.45	10.35	19.78	1.32
X	51					15.7	<10
Y	51.7						
Z	58.7						
AA	58	5.2	3.00	1.61	10.0	16.4	1.53

All data in µg/L

Measurement Uncertainties Sample M168B

	Aluminium ±	Arsenic ±	Lead ±	Cadmium ±	Chromium ±	Iron ±	Copper ±
Target value	0.5	0.04	0.02	0.013	0.08	0.18	0.03
IFA result	3	0.6	0.08	0.10	0.3	1.4	0.12
A	4.87	0.83		0.07	0.58	1.88	0.18
B							
C							
D	2.78	0.102	0.067	0.024	0.204	0.43	0.099
E	1.2	0.09	0.07	0.031	0.022	0.25	0.006
F	0.2	0.05	0.05	0.05	0.05	0.2	0.05
G	7.85	0.91	0.42	0.23	1.47	4.04	
H							
I							
J							
K	1.05	0.087			0.72	0.67	0.0179
L	10.10	1.17	0.54	0.30	1.89	3.41	0.26
M	9.6	0.86	0.33	0.18	1.4	2.6	0.16
N	10.4	1.30	0.53	0.225	1.52	3.54	0.270
O	4					4	5
P						1.4	
Q						4.27	
R	5.00	0.660	0.240	0.130	1.188	5.46	0.112
S			0.20	0.15	0.91		0.25
T	4.84	0.849	0.276	0.162	0.961	1.76	0.14
U	0.569	0.0943	0.0754	0.0386	0.117	0.546	0.0948
V	12.8	1.7	0.7	0.41	3.0	5.3	0.41
W							
X	9					2.8	
Y	2.78						
Z	11.7						
AA	9	0.8	0.45	0.24	1.5	2.5	0.23

All data in µg/L

Results Sample M168B

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
Target value	37.05	5.14	1.379	2.83	2.109	50.0
IFA result	35.3	5.1	1.45	2.84	2.01	51
A	33.51	5.42	1.283	2.71		46.48
B	37.39	5.114	1.262	2.929	1.786	55.71
C						
D	34.2	3.97	1.31	2.97	1.97	48.4
E	41.5	5.21		3.42	2.26	52.2
F	42.7	0.460		59.6	1.15	46.0
G	37.2	5.08	1.44	3.15	2.21	49.0
H	35.5	4.97		2.89	1.96	48.4
I			1.419			
J	35.9	6.39		4.54	1.85	51.3
K	28.1	3.86		3.46	2.27	62.4
L	35.5	4.96	1.42	2.93	2.01	45.7
M	35.1	4.94	1.41	2.80	1.99	50.1
N	39.1	5.2	1.34	2.98	2.01	44.0
O	37.0					53.0
P		4.99				
Q	38.0					
R	37.0	5.10	1.502	2.90	2.24	47.0
S	34.0	3.93	1.24			53
T	37.2	4.95	1.34	3.01	2.07	48.1
U	36.1	5.28	1.23	3.05	2.15	48.5
V	36.8	4.94	1.62	2.86	1.95	49.8
W	38.0	5.1	1.13	2.55	1.94	43.5
X	34.0					
Y						
Z			1.81			
AA	39.1	5.2		2.39		51

All data in µg/L

Measurement Uncertainties Sample M168B

	Manganese ±	Nickel ±	Mercury ±	Selenium ±	Uranium ±	Zinc ±
Target value	0.18	0.04	0.018	0.02	0.018	2.7
IFA result	2.4	0.2	0.27	0.33	0.23	6
A	2.48	0.29	0.13	0.16		4.28
B						
C						
D	0.97	0.451	0.021	0.088	0.036	1.28
E	0.61	0.117		0.095	0.05	0.27
F	0.2	0.05		0.2	0.05	0.2
G	5.58	0.76	0.22	0.47	0.33	7.35
H						
I			0.25			
J						
K	0.54	0.073		0.67	0.0470	0.71
L	7.10	0.99	0.29	0.59	0.39	9.15
M	4.2	0.54	0.31	0.42	0.30	7.5
N	7.8	1.04	0.268	0.60	0.402	8.8
O	2					10
P		0.40				
Q	5.55					
R	3.70	0.510	0.2253	0.435	0.112	4.70
S	3.4	0.39	0.12			5.3
T	3.72	0.495	0.134	0.452	0.203	4.81
U	0.705	0.0288	0.00922	0.0643	0.0512	0.231
V	11	1.2	0.49	1.1	0.59	12.5
W						
X	6.1					
Y						
Z			0.54			
AA	5.9	0.8		0.36		8

All data in µg/L

z-Scores Sample M168A

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
A	-1.43		-5.29		-0.05	-1.36	3.43
B	8.24	-1.02	-2.37	-3.07	-0.20	-0.21	-0.73
C							
D	-2.73	-0.11	0.81	-0.02	-1.26	-1.27	-1.23
E	0.00	0.78	-0.52	1.60	0.55	0.02	-0.86
F	-1.69	3.42	-14.10	222.17	1.37	2.14	-4.79
G	0.25	1.22	0.17		0.11	1.98	-3.68
H	0.15	3.69	-0.89			-0.46	
I							
J	-0.84	0.42	-0.96	1.24	-0.33	1.75	-0.20
K	-1.39	2.90			-3.95	2.62	-1.11
L	0.05	1.84	-0.98		-0.33	-0.48	-0.64
M	-0.79	0.16	-0.65	-0.02	-0.60	0.33	-0.70
N	0.35	1.39	-0.98			-0.15	-0.61
O	-0.59					0.90	6.69
P						-0.40	
Q						4.43	
R	0.40	0.42	0.54	1.24	0.60	0.06	-0.28
S			-2.72		-2.31		-7.69
T	-0.20	0.86	-0.76		0.22	0.12	-0.70
U	-0.79	1.04	0.28		0.38	-1.46	-0.03
V	-0.20	-0.19	-0.35	0.52	0.49	0.37	1.98
W	1.78	1.22	-1.81	-1.28	0.60	0.85	-0.56
X	-0.05					-1.19	
Y	0.89						
Z	2.53						
AA	-0.15	-5.23	0.76	1.24	-0.71	-0.35	-0.50

z-Scores Sample M168A

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
A	-1.74	0.37	-0.74	-1.64		-1.27
B	0.20	0.04	-0.44	1.04	-2.44	1.32
C						
D	-1.57	-2.72	-0.43	-0.09	-1.00	-0.83
E	-0.35	-0.75	-0.22	0.09	-0.92	-1.15
F	3.38	-12.32		171.21	13328.47	-2.43
G	-0.28	-0.45	0.56	1.09	1.56	-0.64
H	-0.62	-0.62		0.61		-1.54
I			0.30			
J	-0.49	2.97		5.33	-2.20	0.06
K	-4.35	-3.19		2.58	-3.48	3.33
L	-0.83	-0.57	0.02	-0.18	-0.68	-1.22
M	-0.83	-0.57	0.19	-0.33	-1.64	-0.58
N	0.66	-0.05	-0.33	0.64	-0.60	-1.92
O	0.12					2.37
P		-0.37				
Q	0.80					
R	0.12	0.20	0.64	-0.03	1.00	-0.83
S	-2.25	-2.37	-0.50			5.06
T	-0.22	-0.30	-1.28	-1.64		-0.70
U	-0.62	0.25	-0.26	0.36		-0.13
V	-0.01	-0.17	0.91	0.18		-0.32
W	0.53	0.12	-1.08	-1.30	-1.00	-2.11
X	-1.44					
Y						
Z			0.87			
AA	-0.76	-0.30		-1.27		-0.64

z-Scores Sample M168B

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
A	-1.14	4.57		-0.79	-0.89	-1.90	16.55
B	4.91	-1.10	-2.45	-3.53	-0.39	0.36	4.86
C							
D	-2.35	0.17	-0.26	-0.20	-1.12	-1.06	-0.55
E	2.43	1.82	2.05	1.69	0.84	1.84	-0.91
F	-4.31	-3.99	-12.93	-1.74	-0.71	1.50	-11.46
G	0.54	0.74	-0.46	-0.44	0.00	7.96	
H	0.15	0.67	-1.08	-0.08	0.10	-0.03	
I							
J	-0.31	0.41	-1.03	0.63	-0.37	10.35	0.27
K	-1.01	3.37			-3.81	22.86	-2.00
L	0.05	0.33	-0.97	-0.79	-0.50	-0.37	-1.09
M	-0.57	-0.02	-0.67	-0.32	-0.44	-0.03	-0.73
N	0.44	1.84	-1.28	-0.79	0.52	0.14	-0.55
O	-1.37					3.80	32.64
P						-0.37	
Q						13.16	
R	-0.08	-0.55	0.46	0.74	0.19	2.94	-0.09
S			-4.67	-1.26	-1.10		
T	-0.49	-0.17	-0.77	0.63	-0.28	0.05	-0.09
U	-0.34	1.17	0.15	0.15	-0.71	-0.29	0.09
V	0.21	0.07	-0.51	0.63	0.15	0.22	1.91
W	1.32	0.62	-1.59	-1.38	0.93	1.91	-0.82
X	0.18					-1.57	
Y	0.36						
Z	2.17						
AA	1.99	-1.27	0.46	0.51	0.36	-0.97	1.09

z-Scores Sample M168B

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
A	-1.80	0.74	-0.63	-0.45		-1.01
B	0.17	-0.07	-0.77	0.37	-2.78	1.63
C						
D	-1.45	-3.08	-0.45	0.53	-1.20	-0.46
E	2.27	0.18		2.22	1.30	0.63
F	2.88	-12.30		213.41	-8.27	-1.14
G	0.08	-0.16	0.40	1.20	0.87	-0.29
H	-0.79	-0.45		0.23	-1.28	-0.46
I			0.26			
J	-0.59	3.29		6.43	-2.23	0.37
K	-4.56	-3.37		2.37	1.39	3.54
L	-0.79	-0.47	0.27	0.38	-0.85	-1.23
M	-0.99	-0.53	0.20	-0.11	-1.03	0.03
N	1.04	0.16	-0.26	0.56	-0.85	-1.71
O	-0.03					0.86
P		-0.39				
Q	0.48					
R	-0.03	-0.11	0.81	0.26	1.13	-0.86
S	-1.55	-3.18	-0.92			0.86
T	0.08	-0.50	-0.26	0.68	-0.34	-0.54
U	-0.48	0.37	-0.98	0.83	0.35	-0.43
V	-0.13	-0.53	1.59	0.11	-1.37	-0.06
W	0.48	-0.11	-1.64	-1.05	-1.46	-1.86
X	-1.55					
Y						
Z			2.84			
AA	1.04	0.16		-1.65		0.29

Sample M168A

Parameter Aluminium

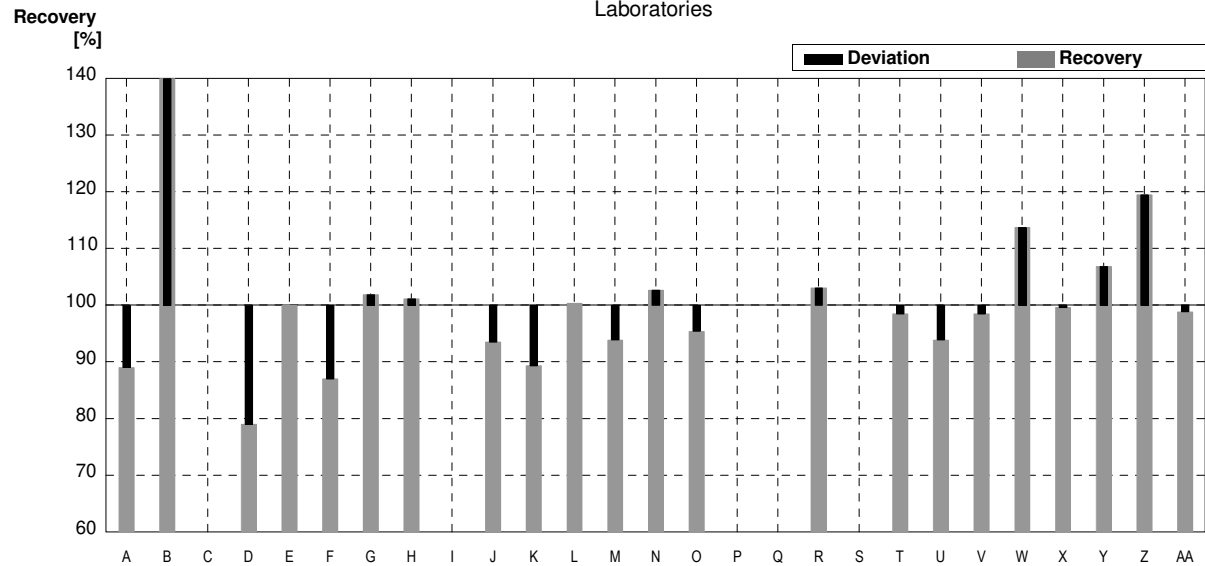
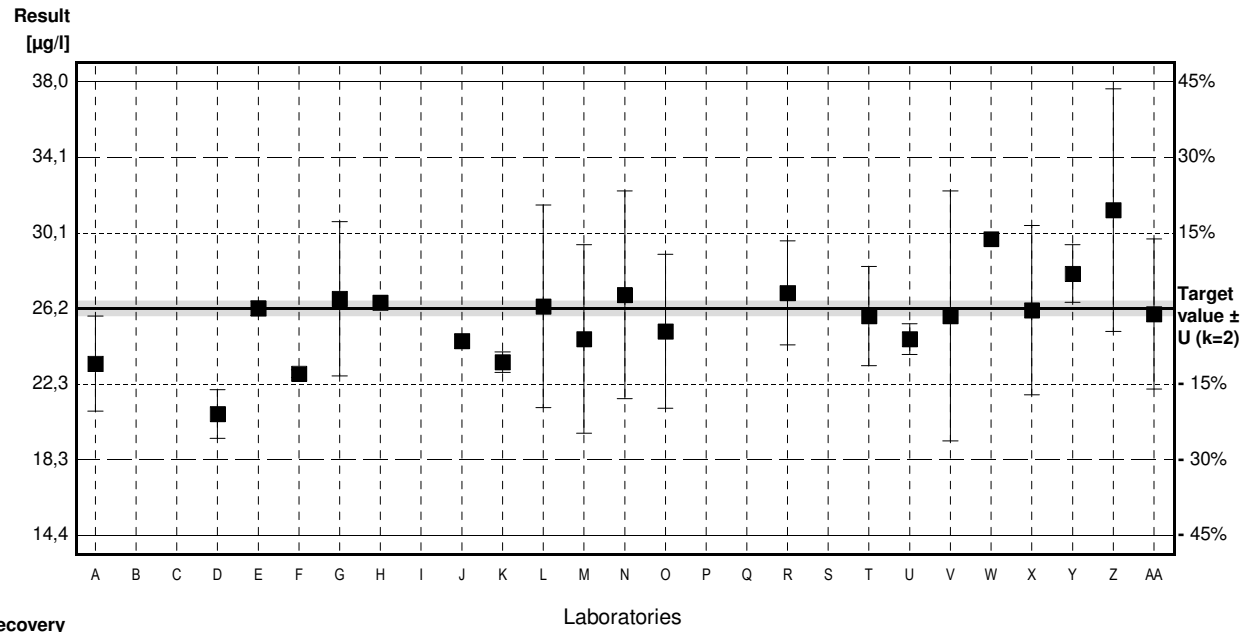
Target value ± U (k=2) 26,2 µg/l ± 0,4 µg/l

IFA result ± U (k=2) 26,2 µg/l ± 1,4 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	23,32	2,47	µg/l	89%	-1,43
B	42,82 *		µg/l	163%	8,24
C			µg/l		
D	20,7	1,26	µg/l	79%	-2,73
E	26,2	0,379	µg/l	100%	0,00
F	22,8	0,2	µg/l	87%	-1,69
G	26,7	4,01	µg/l	102%	0,25
H	26,5		µg/l	101%	0,15
I			µg/l		
J	24,5		µg/l	94%	-0,84
K	23,4	0,53	µg/l	89%	-1,39
L	26,3	5,26	µg/l	100%	0,05
M	24,6	4,9	µg/l	94%	-0,79
N	26,9	5,4	µg/l	103%	0,35
O	25,0	4	µg/l	95%	-0,59
P			µg/l		
Q			µg/l		
R	27,0	2,70	µg/l	103%	0,40
S			µg/l		
T	25,8	2,58	µg/l	98%	-0,20
U	24,6	0,795	µg/l	94%	-0,79
V	25,8	6,5	µg/l	98%	-0,20
W	29,8		µg/l	114%	1,78
X	26,1	4,4	µg/l	100%	-0,05
Y	28,0	1,50	µg/l	107%	0,89
Z	31,3	6,3	µg/l	119%	2,53
AA	25,9	3,9	µg/l	99%	-0,15

	All results	Outliers excl.	Unit
Mean ± CI(99%)	26,5 ± 2,6	25,8 ± 1,4	µg/l
Recov. ± CI(99%)	101,3 ± 9,9	98,4 ± 5,5	%
SD between labs	4,3	2,3	µg/l
RSD between labs	16,1	9,0	%
n for calculation	22	21	



Sample M168B

Parameter Aluminium

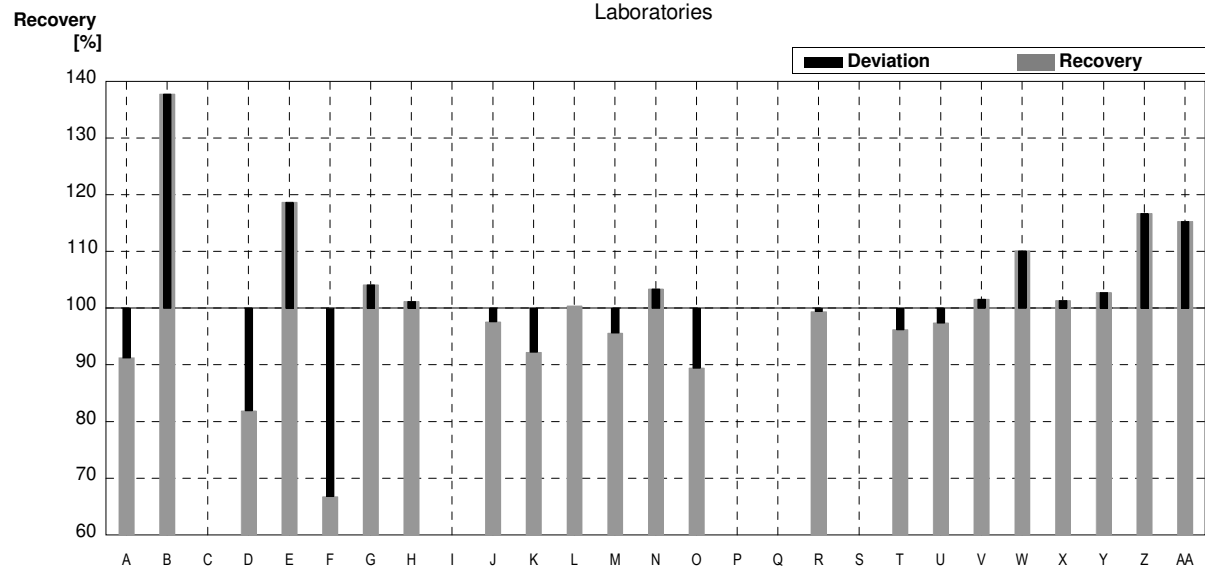
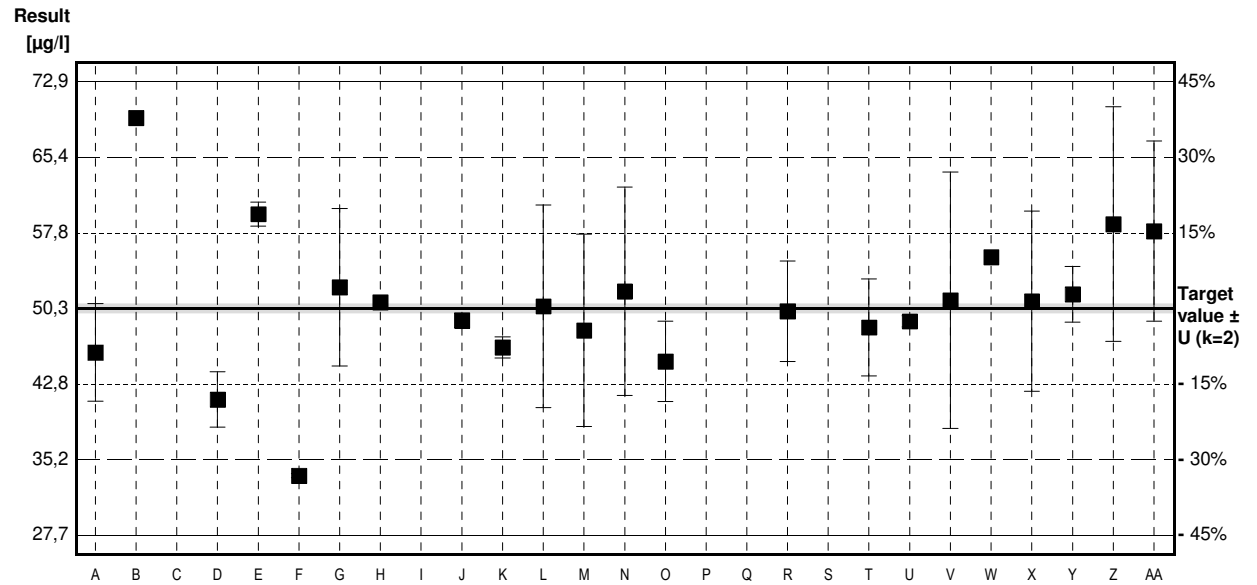
Target value ± U (k=2) 50,3 µg/l ± 0,5 µg/l

IFA result ± U (k=2) 50 µg/l ± 3 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	45,90	4,87	µg/l	91%	-1,14
B	69,31 *		µg/l	138%	4,91
C			µg/l		
D	41,2	2,78	µg/l	82%	-2,35
E	59,7	1,2	µg/l	119%	2,43
F	33,6 *	0,2	µg/l	67%	-4,31
G	52,4	7,85	µg/l	104%	0,54
H	50,9		µg/l	101%	0,15
I			µg/l		
J	49,1		µg/l	98%	-0,31
K	46,4	1,05	µg/l	92%	-1,01
L	50,5	10,10	µg/l	100%	0,05
M	48,1	9,6	µg/l	96%	-0,57
N	52	10,4	µg/l	103%	0,44
O	45,0	4	µg/l	89%	-1,37
P			µg/l		
Q			µg/l		
R	50,0	5,00	µg/l	99%	-0,08
S			µg/l		
T	48,4	4,84	µg/l	96%	-0,49
U	49,0	0,569	µg/l	97%	-0,34
V	51,1	12,8	µg/l	102%	0,21
W	55,4		µg/l	110%	1,32
X	51	9	µg/l	101%	0,18
Y	51,7	2,78	µg/l	103%	0,36
Z	58,7	11,7	µg/l	117%	2,17
AA	58	9	µg/l	115%	1,99

	All results	Outliers excl.	Unit
Mean ± CI(99%)	50,8 ± 4,3	50,7 ± 3,0	µg/l
Recov. ± CI(99%)	101,0 ± 8,5	100,8 ± 5,9	%
SD between labs	7,1	4,6	µg/l
RSD between labs	13,9	9,1	%
n for calculation	22	20	



Sample M168A
Parameter Arsenic

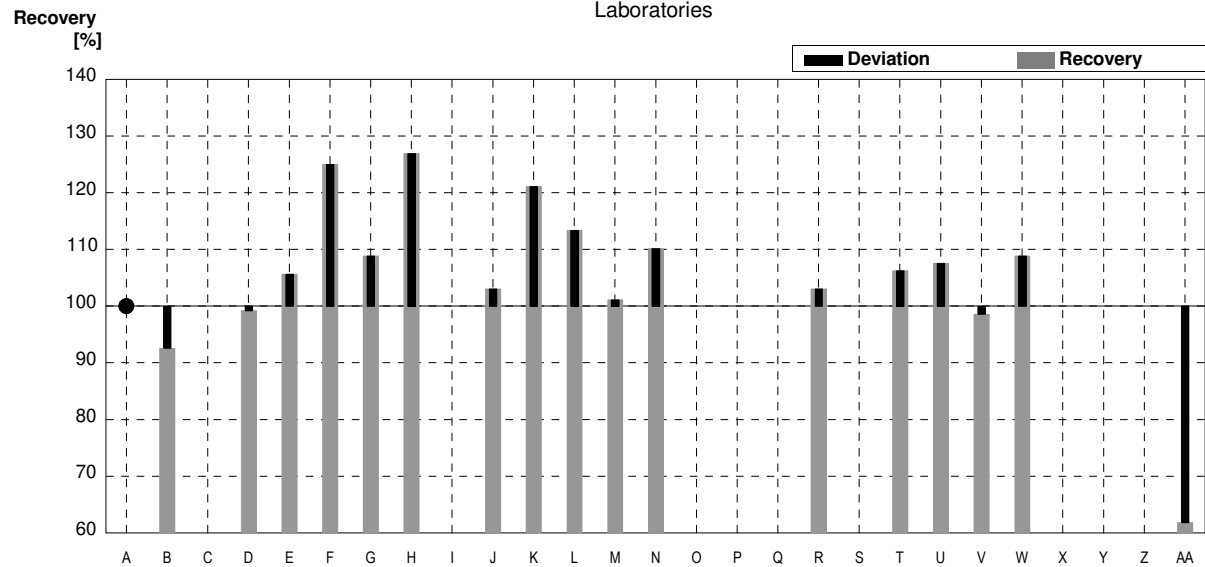
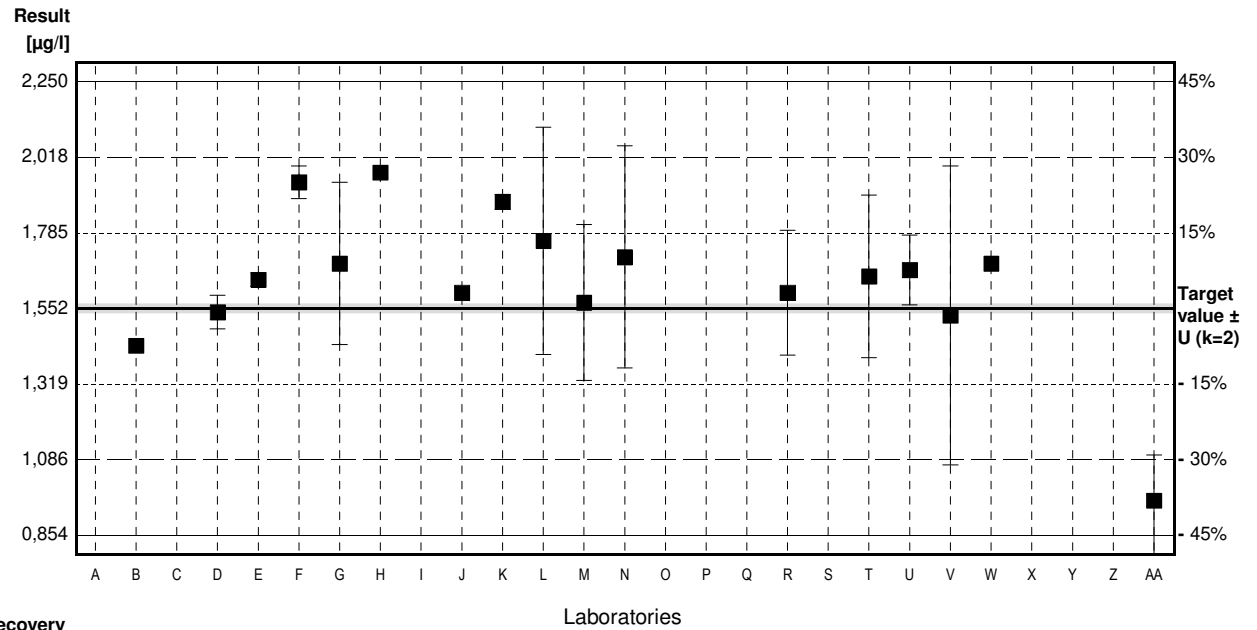
Target value ± U (k=2) 1,552 µg/l ± 0,014 µg/l

IFA result ± U (k=2) 1,50 µg/l ± 0,16 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	<5		µg/l	•	
B	1,437		µg/l	93%	-1,02
C			µg/l		
D	1,54	0,052	µg/l	99%	-0,11
E	1,64	0,021	µg/l	106%	0,78
F	1,94	0,05	µg/l	125%	3,42
G	1,69	0,25	µg/l	109%	1,22
H	1,97		µg/l	127%	3,69
I			µg/l		
J	1,60		µg/l	103%	0,42
K	1,88	0,0230	µg/l	121%	2,90
L	1,76	0,35	µg/l	113%	1,84
M	1,57	0,24	µg/l	101%	0,16
N	1,71	0,342	µg/l	110%	1,39
O			µg/l		
P			µg/l		
Q			µg/l		
R	1,60	0,192	µg/l	103%	0,42
S			µg/l		
T	1,65	0,25	µg/l	106%	0,86
U	1,67	0,107	µg/l	108%	1,04
V	1,53	0,46	µg/l	99%	-0,19
W	1,69		µg/l	109%	1,22
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	0,96 *	0,14	µg/l	62%	-5,23

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,637 ± 0,160	1,680 ± 0,109	µg/l
Recov. ± CI(99%)	105,5 ± 10,3	108,2 ± 7,0	%
SD between labs	0,226	0,148	µg/l
RSD between labs	13,8	8,8	%
n for calculation	17	16	



Sample M168B
Parameter Arsenic

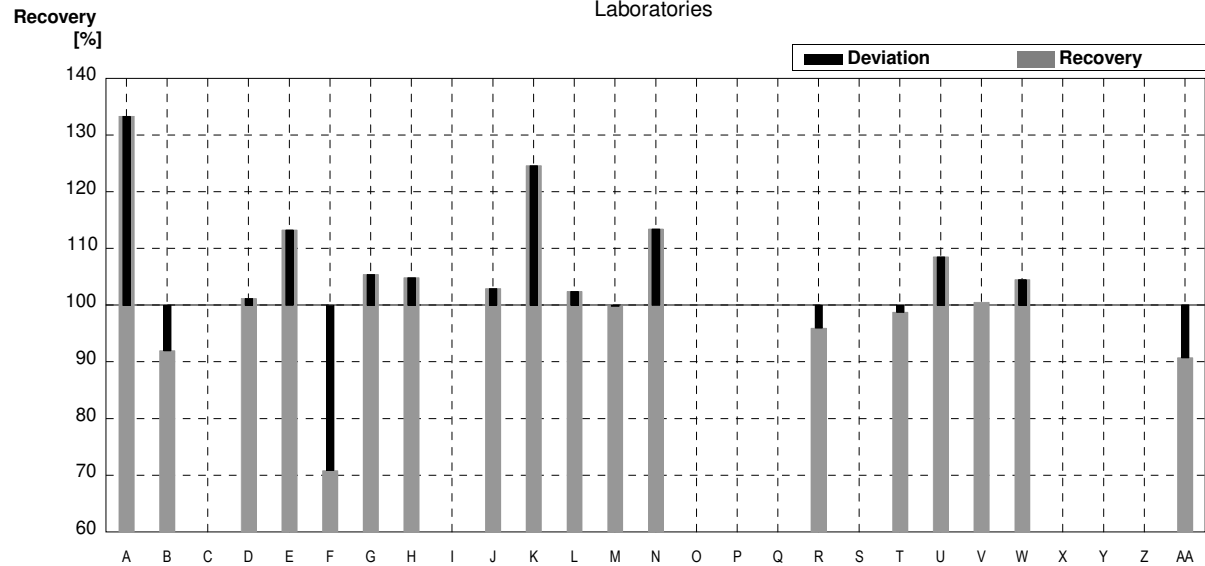
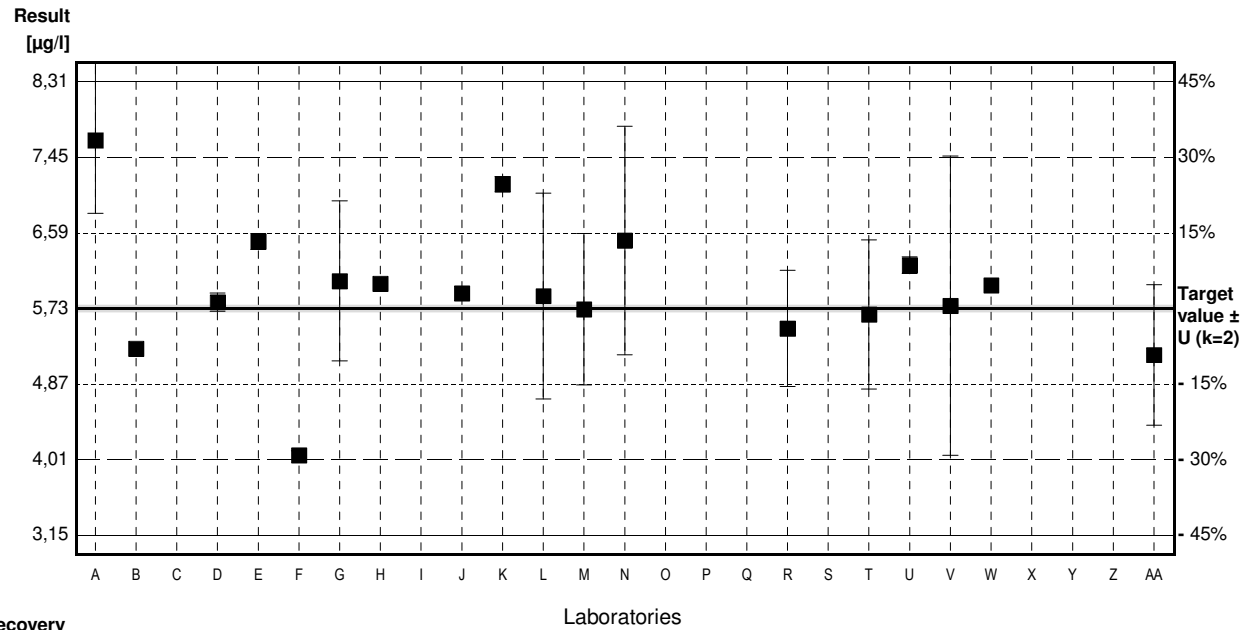
Target value ± U (k=2) 5,73 µg/l ± 0,04 µg/l

IFA result ± U (k=2) 5,4 µg/l ± 0,6 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	7,64 *	0,83	µg/l	133%	4,57
B	5,271		µg/l	92%	-1,10
C			µg/l		
D	5,80	0,102	µg/l	101%	0,17
E	6,49	0,09	µg/l	113%	1,82
F	4,06 *	0,05	µg/l	71%	-3,99
G	6,04	0,91	µg/l	105%	0,74
H	6,01		µg/l	105%	0,67
I			µg/l		
J	5,90		µg/l	103%	0,41
K	7,14	0,087	µg/l	125%	3,37
L	5,87	1,17	µg/l	102%	0,33
M	5,72	0,86	µg/l	100%	-0,02
N	6,50	1,30	µg/l	113%	1,84
O			µg/l		
P			µg/l		
Q			µg/l		
R	5,50	0,660	µg/l	96%	-0,55
S			µg/l		
T	5,66	0,849	µg/l	99%	-0,17
U	6,22	0,0943	µg/l	109%	1,17
V	5,76	1,7	µg/l	101%	0,07
W	5,99		µg/l	105%	0,62
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	5,2	0,8	µg/l	91%	-1,27

	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,93 ± 0,52	5,94 ± 0,36	µg/l
Recov. ± CI(99%)	103,5 ± 9,1	103,7 ± 6,2	%
SD between labs	0,77	0,48	µg/l
RSD between labs	12,9	8,2	%
n for calculation	18	16	



Sample M168A

Parameter Lead

Target value ± U (k=2) 6,85 µg/l ± 0,05 µg/l

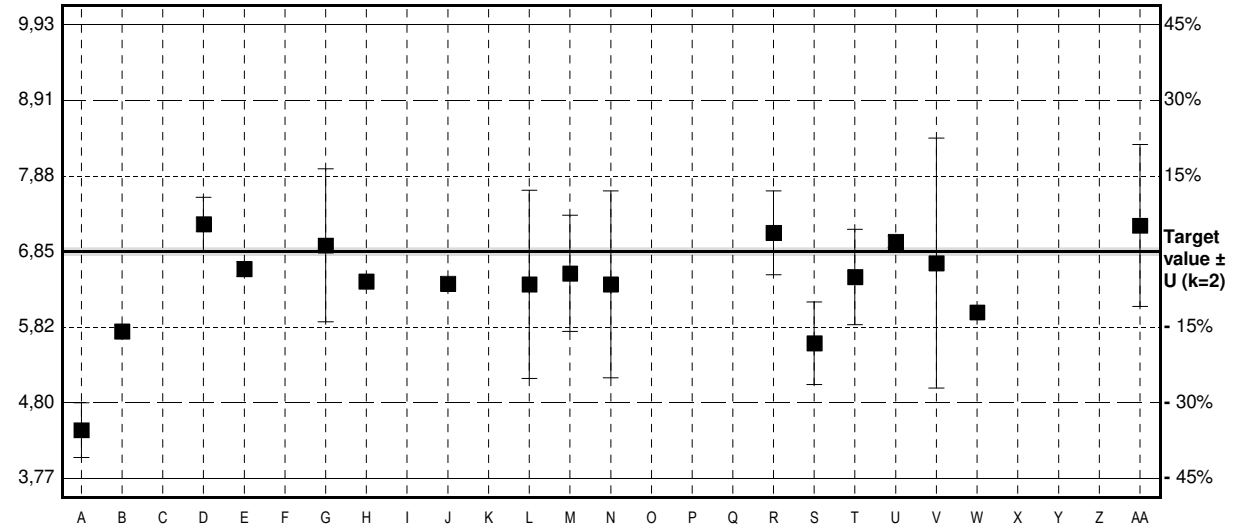
IFA result ± U (k=2) 6,86 µg/l ± 0,18 µg/l

Stability test µg/l

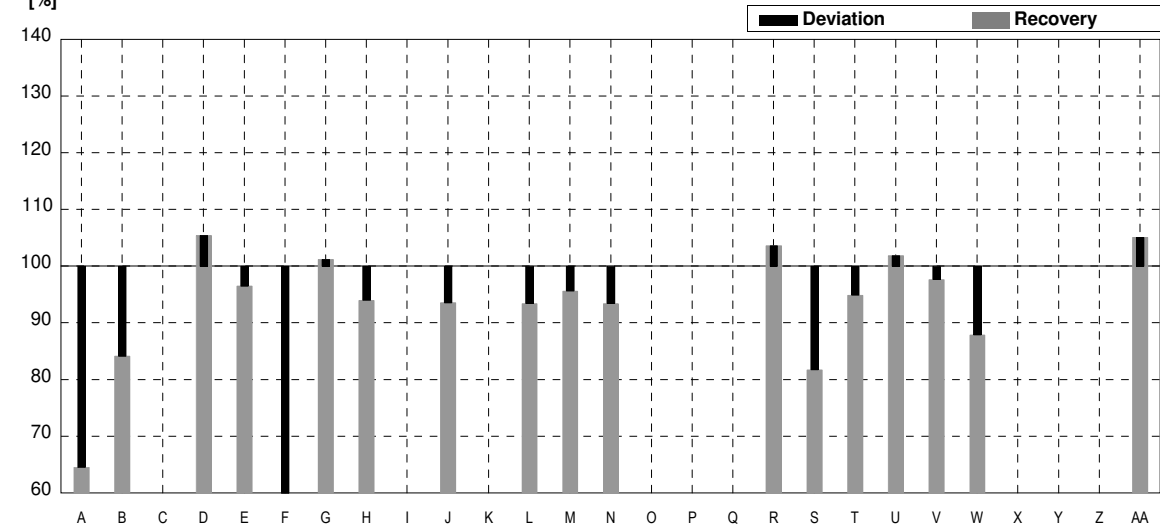
Lab Code	Result	±	Unit	Recovery	z-Score
A	4,42	0,37	µg/l	65%	-5,29
B	5,764		µg/l	84%	-2,37
C			µg/l		
D	7,22	0,363	µg/l	105%	0,81
E	6,61	0,10	µg/l	96%	-0,52
F	0,380 *	0,05	µg/l	6%	-14,10
G	6,93	1,04	µg/l	101%	0,17
H	6,44		µg/l	94%	-0,89
I			µg/l		
J	6,41		µg/l	94%	-0,96
K			µg/l		
L	6,40	1,28	µg/l	93%	-0,98
M	6,55	0,79	µg/l	96%	-0,65
N	6,4	1,27	µg/l	93%	-0,98
O			µg/l		
P			µg/l		
Q			µg/l		
R	7,10	0,57	µg/l	104%	0,54
S	5,6	0,56	µg/l	82%	-2,72
T	6,5	0,65	µg/l	95%	-0,76
U	6,98	0,0751	µg/l	102%	0,28
V	6,69	1,7	µg/l	98%	-0,35
W	6,02		µg/l	88%	-1,81
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	7,2	1,1	µg/l	105%	0,76

	All results	Outliers excl.	Unit
Mean ± CI(99%)	6,09 ± 1,08	6,43 ± 0,49	µg/l
Recov. ± CI(99%)	88,9 ± 15,7	93,8 ± 7,2	%
SD between labs	1,58	0,69	µg/l
RSD between labs	25,9	10,8	%
n for calculation	18	17	

Result
[µg/l]



Recovery
[%]



Sample M168B

Parameter Lead

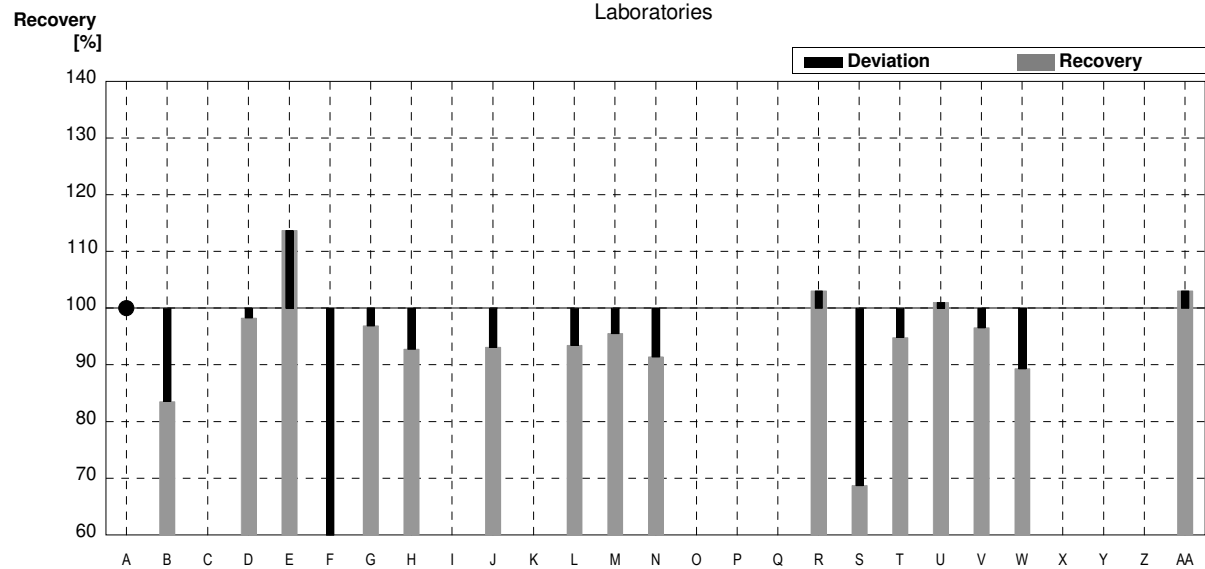
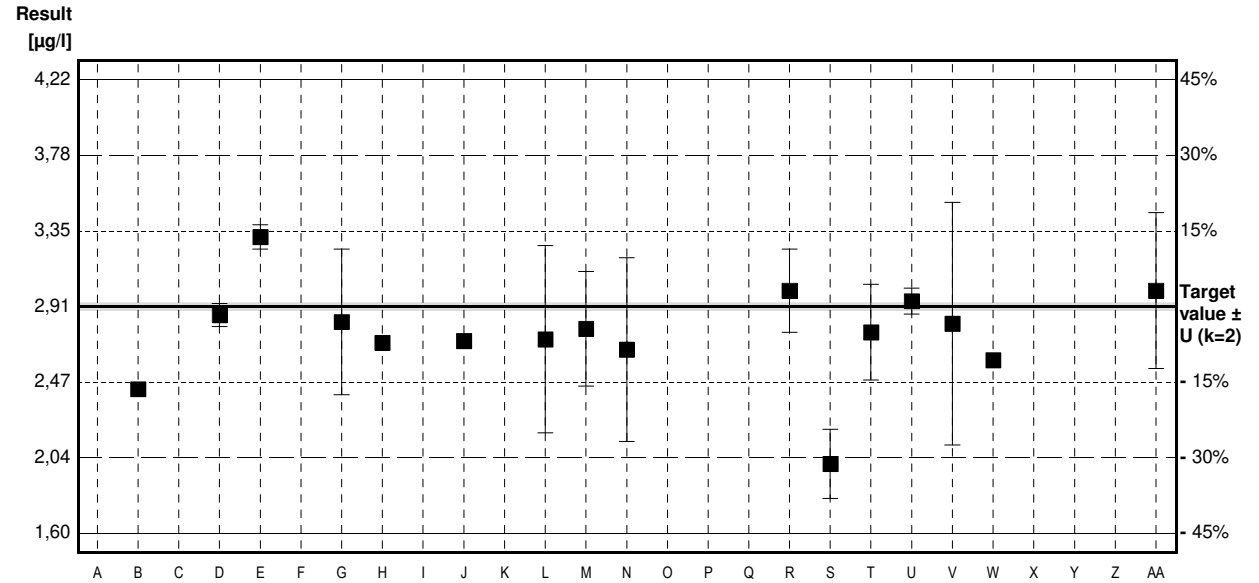
Target value ± U (k=2) 2,91 µg/l ± 0,02 µg/l

IFA result ± U (k=2) 2,79 µg/l ± 0,08 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	<5		µg/l	•	
B	2,432		µg/l	84%	-2,45
C			µg/l		
D	2,86	0,067	µg/l	98%	-0,26
E	3,31 *	0,07	µg/l	114%	2,05
F	0,390 *	0,05	µg/l	13%	-12,93
G	2,82	0,42	µg/l	97%	-0,46
H	2,70		µg/l	93%	-1,08
I			µg/l		
J	2,71		µg/l	93%	-1,03
K			µg/l		
L	2,72	0,54	µg/l	93%	-0,97
M	2,78	0,33	µg/l	96%	-0,67
N	2,66	0,53	µg/l	91%	-1,28
O			µg/l		
P			µg/l		
Q			µg/l		
R	3,00	0,240	µg/l	103%	0,46
S	2,00 *	0,20	µg/l	69%	-4,67
T	2,76	0,276	µg/l	95%	-0,77
U	2,94	0,0754	µg/l	101%	0,15
V	2,81	0,7	µg/l	97%	-0,51
W	2,60		µg/l	89%	-1,59
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	3,00	0,45	µg/l	103%	0,46

	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,62 ± 0,45	2,77 ± 0,12	µg/l
Recov. ± CI(99%)	89,9 ± 15,5	95,2 ± 4,3	%
SD between labs	0,64	0,16	µg/l
RSD between labs	24,3	5,6	%
n for calculation	17	14	



Sample M168A

Parameter Cadmium

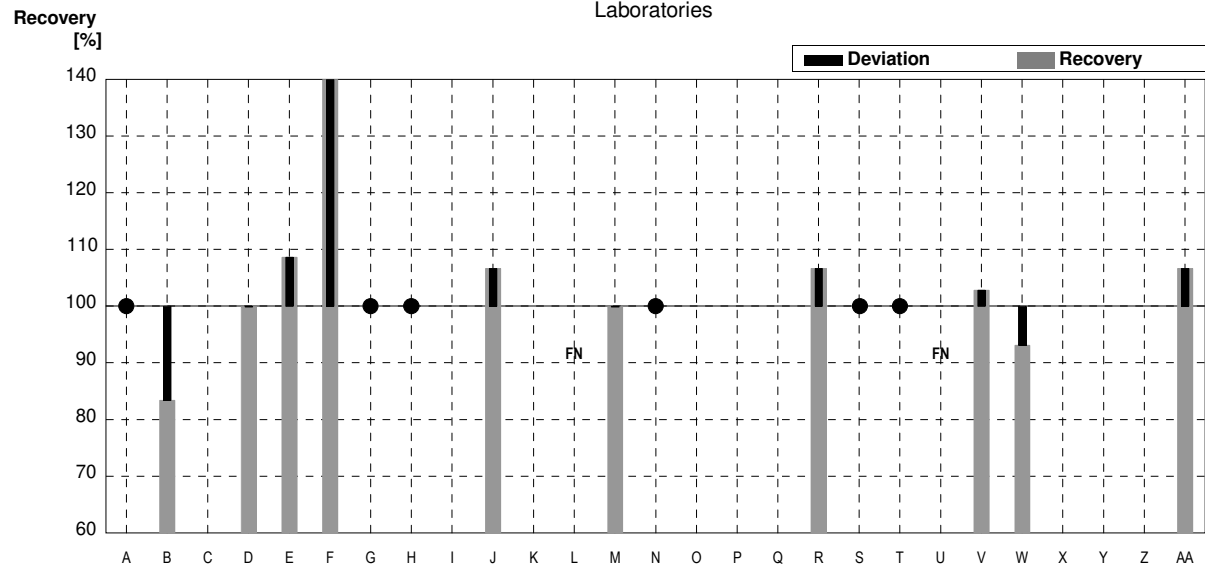
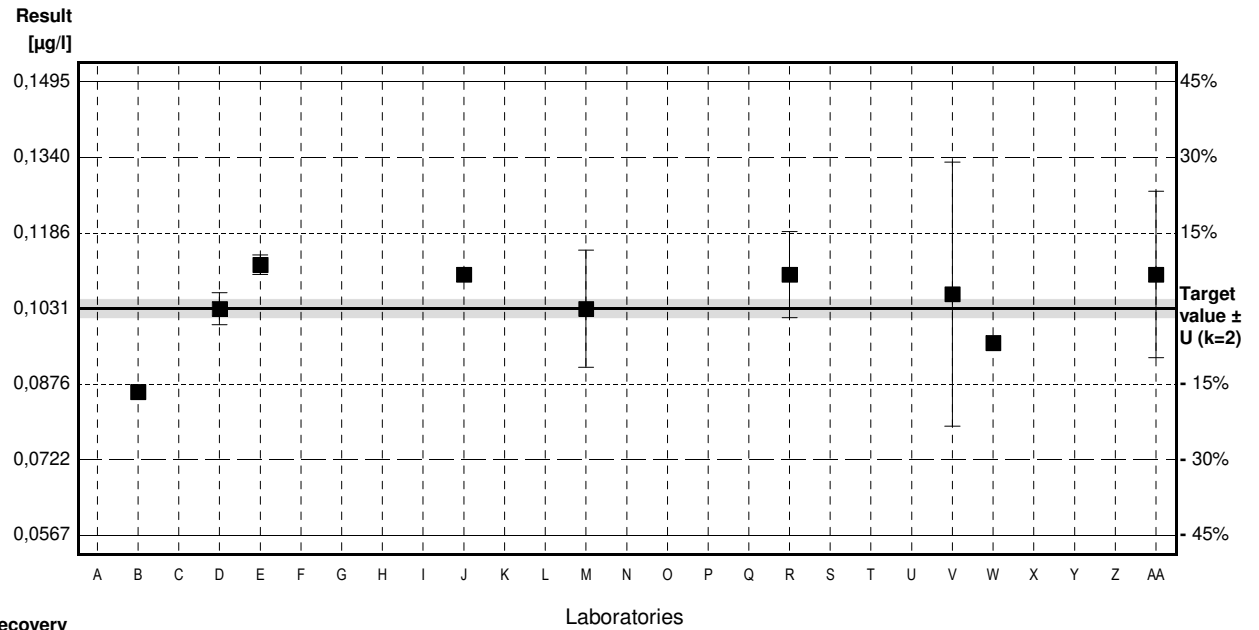
Target value ± U (k=2) 0,1031 µg/l ± 0,0019 µg/l

IFA result ± U (k=2) 0,109 µg/l ± 0,006 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	<1		µg/l	•	
B	0,086		µg/l	83%	-3,07
C			µg/l		
D	0,103	0,0033	µg/l	100%	-0,02
E	0,112	0,002	µg/l	109%	1,60
F	1,34	0,05	µg/l	1300%	222,17
G	<0,2		µg/l	•	
H	<0,4		µg/l	•	
I			µg/l		
J	0,110		µg/l	107%	1,24
K			µg/l		
L	<0,1		µg/l	FN	
M	0,103	0,012	µg/l	100%	-0,02
N	<0,5		µg/l	•	
O			µg/l		
P			µg/l		
Q			µg/l		
R	0,110	0,0088	µg/l	107%	1,24
S	<0,1	0,025	µg/l	•	
T	<0,2		µg/l	•	
U	<0,100		µg/l	FN	
V	0,106	0,027	µg/l	103%	0,52
W	0,096		µg/l	93%	-1,28
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	0,110	0,017	µg/l	107%	1,24

	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,2276 ± 0,4055	0,1040 ± 0,0094	µg/l
Recov. ± CI(99%)	220,8 ± 393,3	100,9 ± 9,1	%
SD between labs	0,3909	0,0084	µg/l
RSD between labs	171,8	8,1	%
n for calculation	10	9	



Sample M168B
Parameter Cadmium

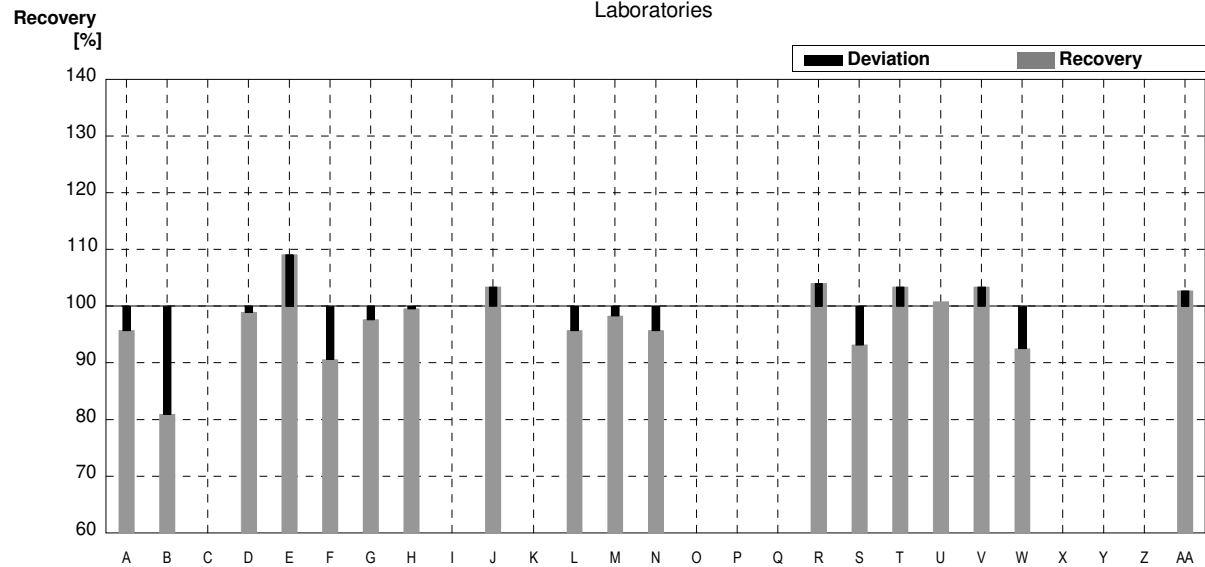
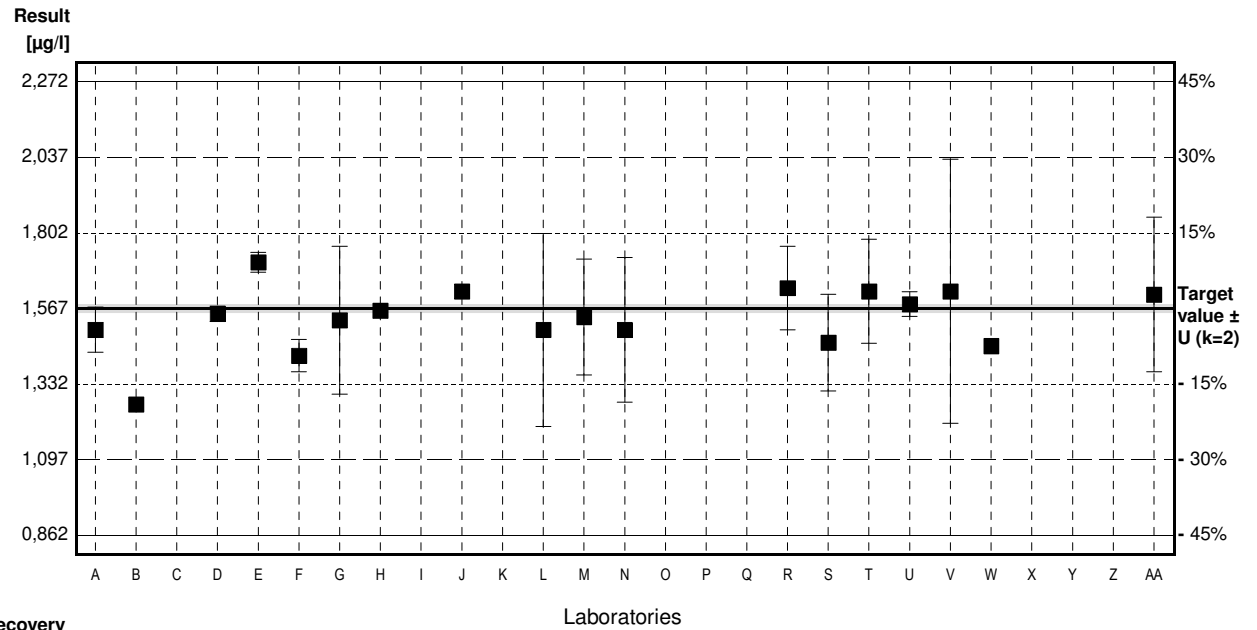
Target value ± U (k=2) 1,567 µg/l ± 0,013 µg/l

IFA result ± U (k=2) 1,63 µg/l ± 0,10 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	1,50	0,07	µg/l	96%	-0,79
B	1,268		µg/l	81%	-3,53
C			µg/l		
D	1,55	0,024	µg/l	99%	-0,20
E	1,71	0,031	µg/l	109%	1,69
F	1,42	0,05	µg/l	91%	-1,74
G	1,53	0,23	µg/l	98%	-0,44
H	1,56		µg/l	100%	-0,08
I			µg/l		
J	1,62		µg/l	103%	0,63
K			µg/l		
L	1,50	0,30	µg/l	96%	-0,79
M	1,54	0,18	µg/l	98%	-0,32
N	1,50	0,225	µg/l	96%	-0,79
O			µg/l		
P			µg/l		
Q			µg/l		
R	1,63	0,130	µg/l	104%	0,74
S	1,46	0,15	µg/l	93%	-1,26
T	1,62	0,162	µg/l	103%	0,63
U	1,58	0,0386	µg/l	101%	0,15
V	1,62	0,41	µg/l	103%	0,63
W	1,45		µg/l	93%	-1,38
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	1,61	0,24	µg/l	103%	0,51

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,537 ± 0,069	1,537 ± 0,069	µg/l
Recov. ± CI(99%)	98,1 ± 4,4	98,1 ± 4,4	%
SD between labs	0,100	0,100	µg/l
RSD between labs	6,5	6,5	%
n for calculation	18	18	



Sample M168A

Parameter Chromium

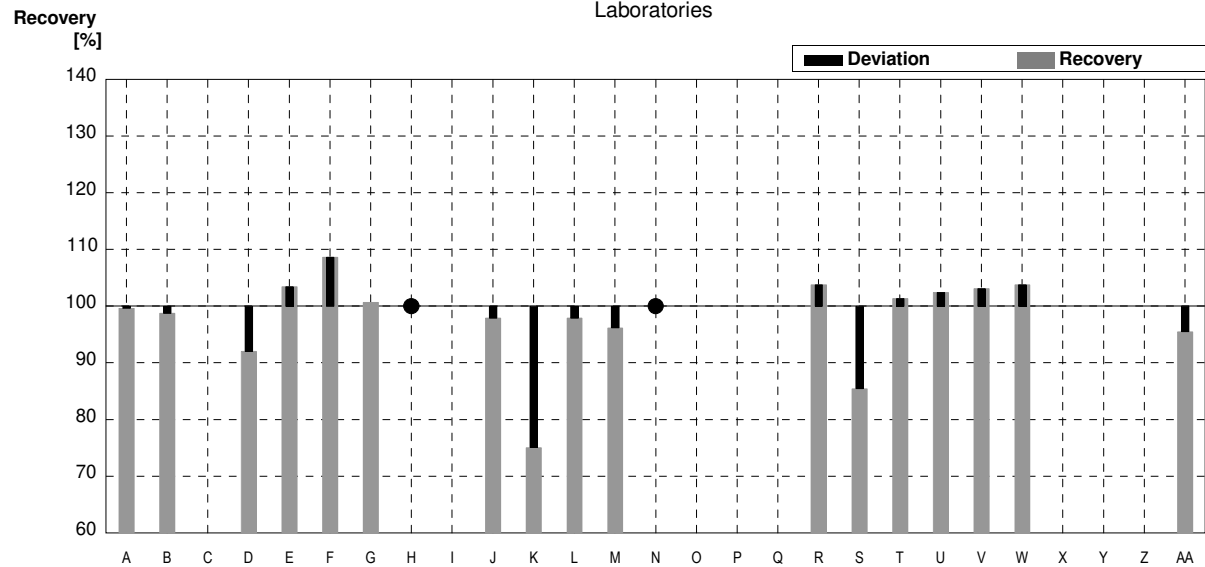
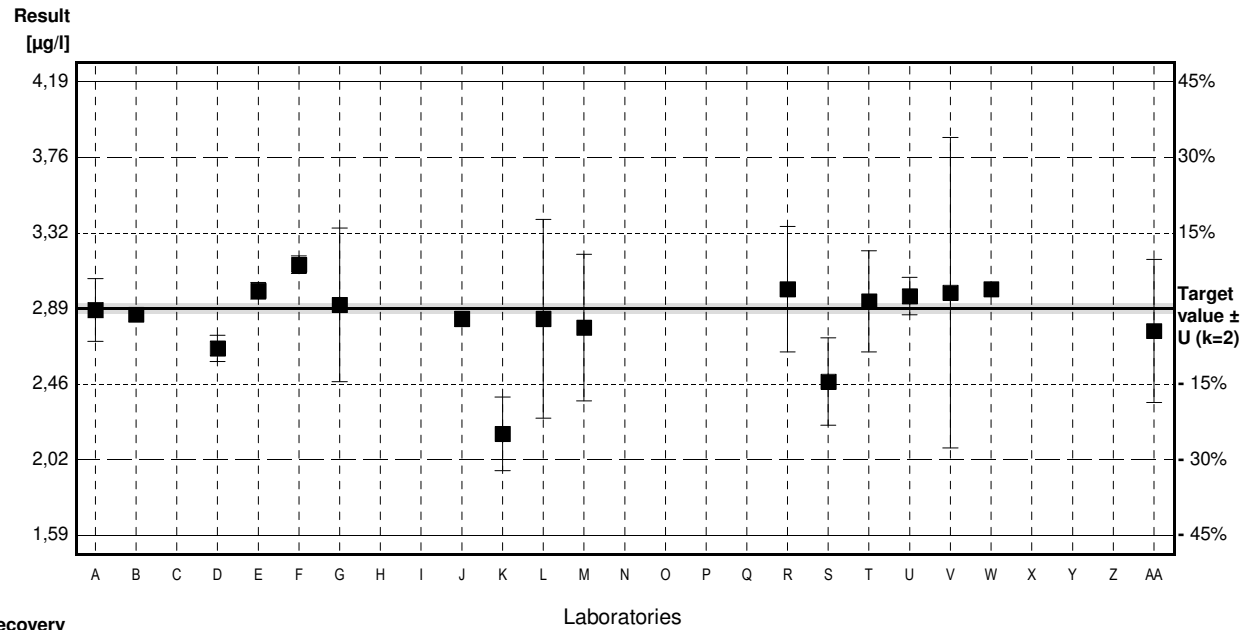
Target value ± U (k=2) 2,89 µg/l ± 0,03 µg/l

IFA result ± U (k=2) 2,95 µg/l ± 0,11 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,88	0,18	µg/l	100%	-0,05
B	2,854		µg/l	99%	-0,20
C			µg/l		
D	2,66	0,076	µg/l	92%	-1,26
E	2,99	0,047	µg/l	103%	0,55
F	3,14	0,05	µg/l	109%	1,37
G	2,91	0,44	µg/l	101%	0,11
H	<5		µg/l	*	
I			µg/l		
J	2,83		µg/l	98%	-0,33
K	2,17	0,211	µg/l	75%	-3,95
L	2,83	0,57	µg/l	98%	-0,33
M	2,78	0,42	µg/l	96%	-0,60
N	<5		µg/l	*	
O			µg/l		
P			µg/l		
Q			µg/l		
R	3,00	0,360	µg/l	104%	0,60
S	2,47	0,25	µg/l	85%	-2,31
T	2,93	0,29	µg/l	101%	0,22
U	2,96	0,107	µg/l	102%	0,38
V	2,98	0,89	µg/l	103%	0,49
W	3,00		µg/l	104%	0,60
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	2,76	0,41	µg/l	96%	-0,71

	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,83 ± 0,16	2,87 ± 0,12	µg/l
Recov. ± CI(99%)	98,0 ± 5,6	99,4 ± 4,0	%
SD between labs	0,23	0,16	µg/l
RSD between labs	8,1	5,5	%
n for calculation	17	16	



Sample M168B
Parameter Chromium

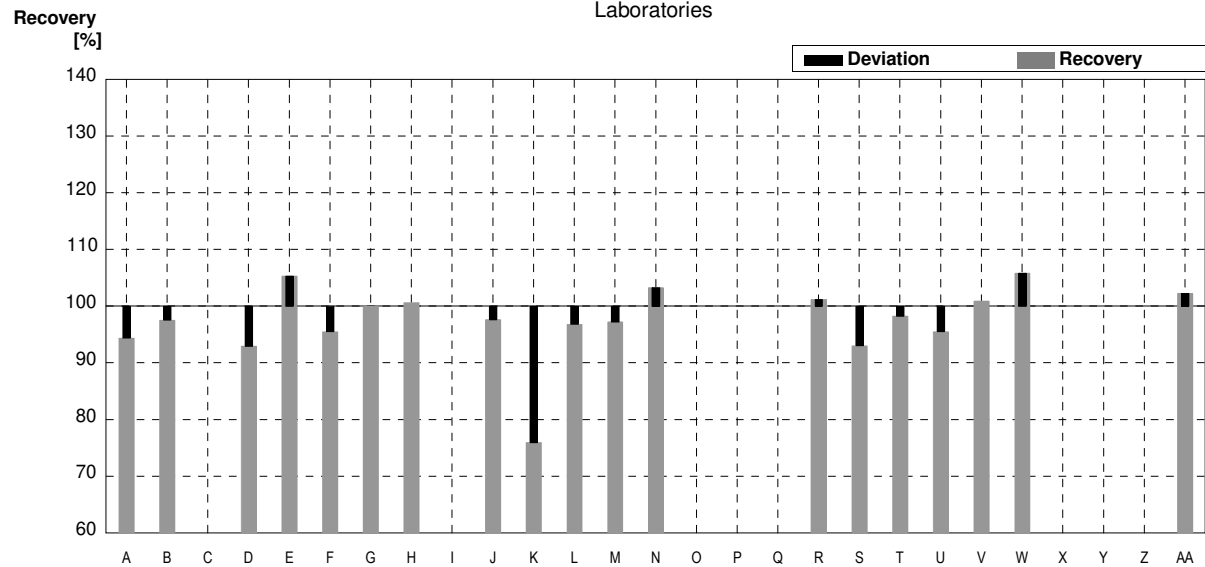
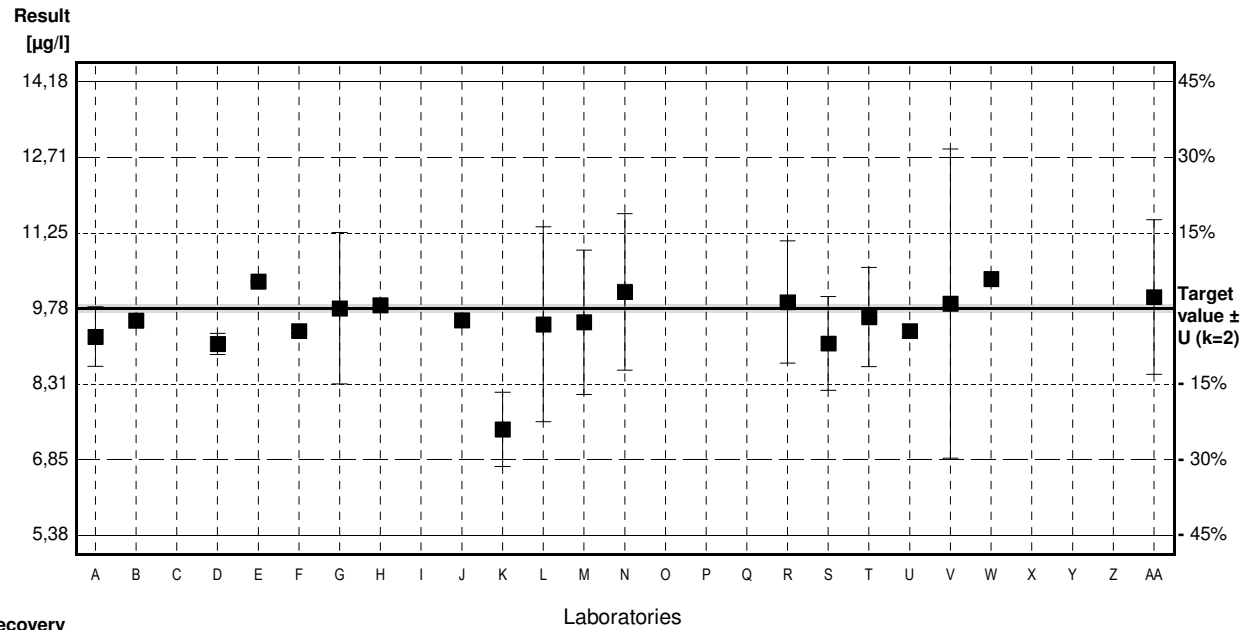
Target value ± U (k=2) 9,78 µg/l ± 0,08 µg/l

IFA result ± U (k=2) 9,8 µg/l ± 0,3 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	9,23	0,58	µg/l	94%	-0,89
B	9,542		µg/l	98%	-0,39
C			µg/l		
D	9,09	0,204	µg/l	93%	-1,12
E	10,3	0,022	µg/l	105%	0,84
F	9,34	0,05	µg/l	96%	-0,71
G	9,78	1,47	µg/l	100%	0,00
H	9,84		µg/l	101%	0,10
I			µg/l		
J	9,55		µg/l	98%	-0,37
K	7,43 *	0,72	µg/l	76%	-3,81
L	9,47	1,89	µg/l	97%	-0,50
M	9,51	1,4	µg/l	97%	-0,44
N	10,1	1,52	µg/l	103%	0,52
O			µg/l		
P			µg/l		
Q			µg/l		
R	9,90	1,188	µg/l	101%	0,19
S	9,1	0,91	µg/l	93%	-1,10
T	9,61	0,961	µg/l	98%	-0,28
U	9,34	0,117	µg/l	96%	-0,71
V	9,87	3,0	µg/l	101%	0,15
W	10,35		µg/l	106%	0,93
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	10,0	1,5	µg/l	102%	0,36

	All results	Outliers excl.	Unit
Mean ± CI(99%)	9,54 ± 0,42	9,66 ± 0,26	µg/l
Recov. ± CI(99%)	97,6 ± 4,3	98,8 ± 2,7	%
SD between labs	0,63	0,38	µg/l
RSD between labs	6,6	3,9	%
n for calculation	19	18	



Sample M168A

Parameter Iron

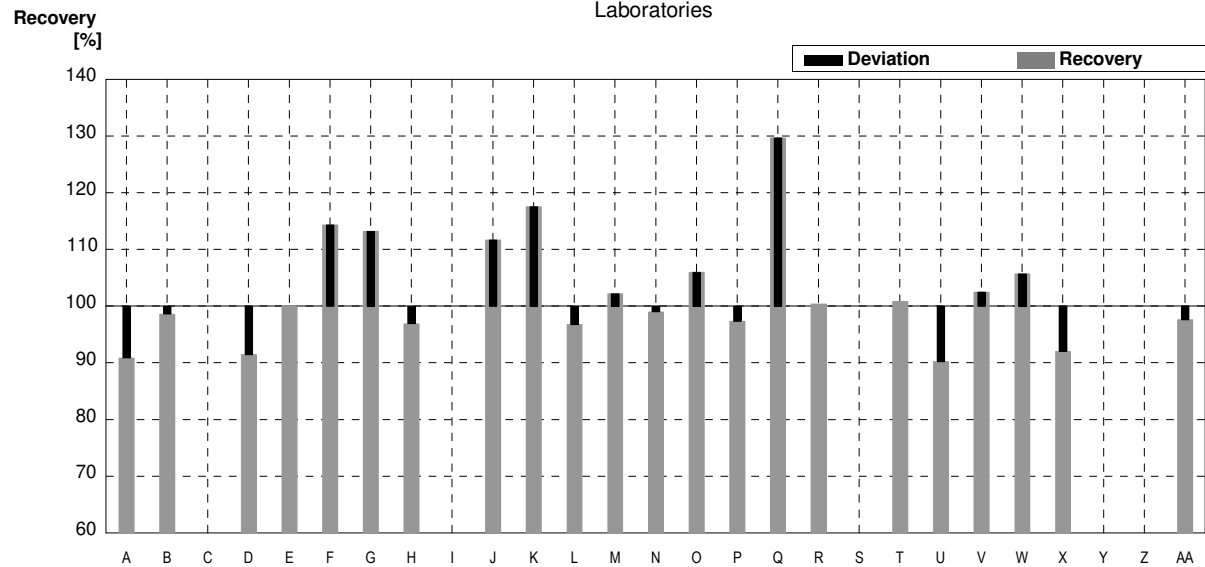
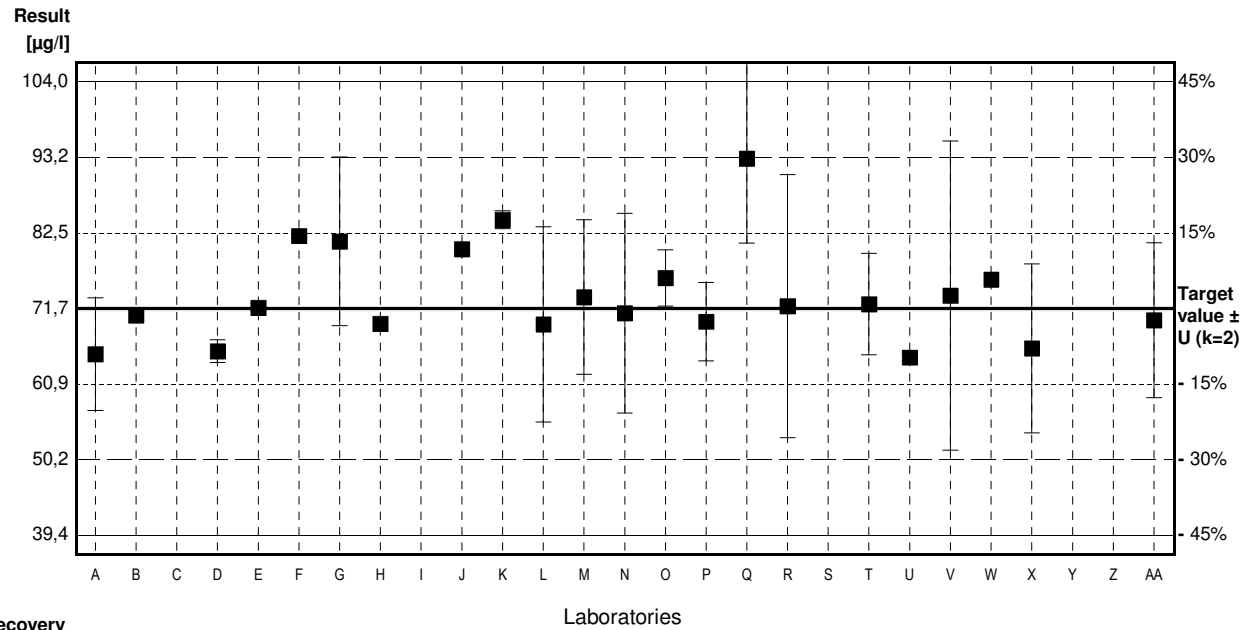
Target value ± U (k=2) 71,7 µg/l ± 0,3 µg/l

IFA result ± U (k=2) 70 µg/l ± 5 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	65,18	8,02	µg/l	91%	-1,36
B	70,70		µg/l	99%	-0,21
C			µg/l		
D	65,6	1,62	µg/l	91%	-1,27
E	71,8	0,55	µg/l	100%	0,02
F	82	0,2	µg/l	114%	2,14
G	81,2	12	µg/l	113%	1,98
H	69,5		µg/l	97%	-0,46
I			µg/l		
J	80,1		µg/l	112%	1,75
K	84,3	1,26	µg/l	118%	2,62
L	69,4	13,88	µg/l	97%	-0,48
M	73,3	11,0	µg/l	102%	0,33
N	71	14,2	µg/l	99%	-0,15
O	76,0	4	µg/l	106%	0,90
P	69,8	5,6	µg/l	97%	-0,40
Q	93,0 *	12,03	µg/l	130%	4,43
R	72,0	18,72	µg/l	100%	0,06
S			µg/l		
T	72,3	7,23	µg/l	101%	0,12
U	64,7	0,508	µg/l	90%	-1,46
V	73,5	22	µg/l	103%	0,37
W	75,8		µg/l	106%	0,85
X	66	12	µg/l	92%	-1,19
Y			µg/l		
Z			µg/l		
AA	70	11	µg/l	98%	-0,35

	All results	Outliers excl.	Unit
Mean ± CI(99%)	73,5 ± 4,2	72,6 ± 3,5	µg/l
Recov. ± CI(99%)	102,5 ± 5,9	101,2 ± 4,9	%
SD between labs	7,0	5,6	µg/l
RSD between labs	9,5	7,7	%
n for calculation	22	21	



Sample M168B

Parameter Iron

Target value ± U (k=2) 17,54 µg/l ± 0,18 µg/l

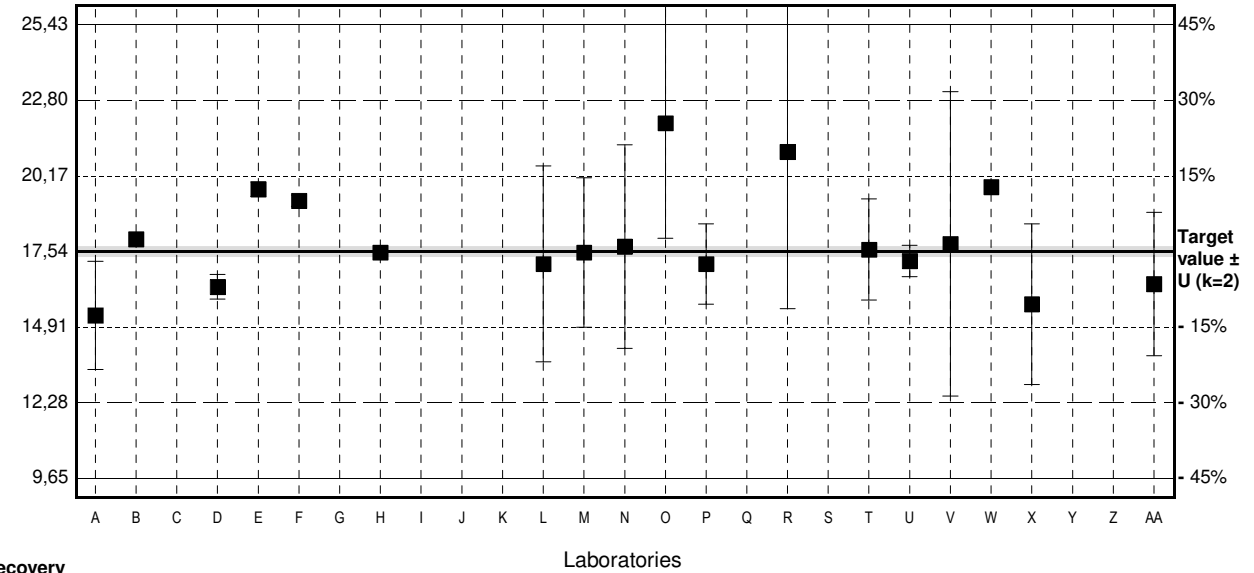
IFA result ± U (k=2) 16,4 µg/l ± 1,4 µg/l

Stability test µg/l

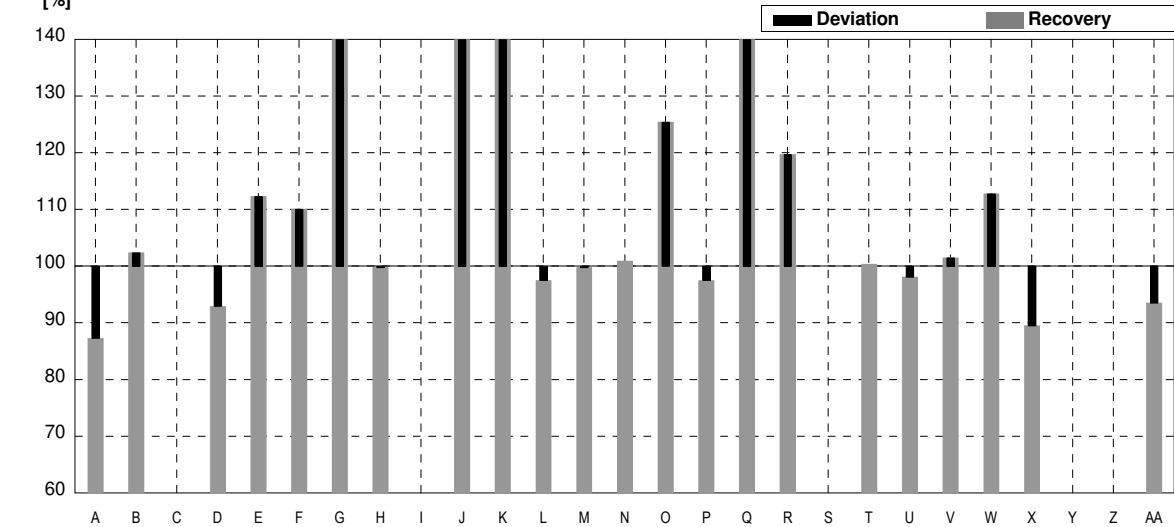
Lab Code	Result	±	Unit	Recovery	z-Score
A	15,31	1,88	µg/l	87%	-1,90
B	17,96		µg/l	102%	0,36
C			µg/l		
D	16,3	0,43	µg/l	93%	-1,06
E	19,7	0,25	µg/l	112%	1,84
F	19,3	0,2	µg/l	110%	1,50
G	26,9 *	4,04	µg/l	153%	7,96
H	17,5		µg/l	100%	-0,03
I			µg/l		
J	29,7 *		µg/l	169%	10,35
K	44,4 *	0,67	µg/l	253%	22,86
L	17,1	3,41	µg/l	97%	-0,37
M	17,5	2,6	µg/l	100%	-0,03
N	17,7	3,54	µg/l	101%	0,14
O	22,0	4	µg/l	125%	3,80
P	17,1	1,4	µg/l	97%	-0,37
Q	33,0 *	4,27	µg/l	188%	13,16
R	21,0	5,46	µg/l	120%	2,94
S			µg/l		
T	17,6	1,76	µg/l	100%	0,05
U	17,2	0,546	µg/l	98%	-0,29
V	17,8	5,3	µg/l	101%	0,22
W	19,78		µg/l	113%	1,91
X	15,7	2,8	µg/l	90%	-1,57
Y			µg/l		
Z			µg/l		
AA	16,4	2,5	µg/l	94%	-0,97

	All results	Outliers excl.	Unit
Mean ± CI(99%)	20,77 ± 4,21	17,94 ± 1,22	µg/l
Recov. ± CI(99%)	118,4 ± 24,0	102,3 ± 6,9	%
SD between labs	6,98	1,78	µg/l
RSD between labs	33,6	9,9	%
n for calculation	22	18	

Result [µg/l]



Recovery [%]



Sample M168A
Parameter Copper

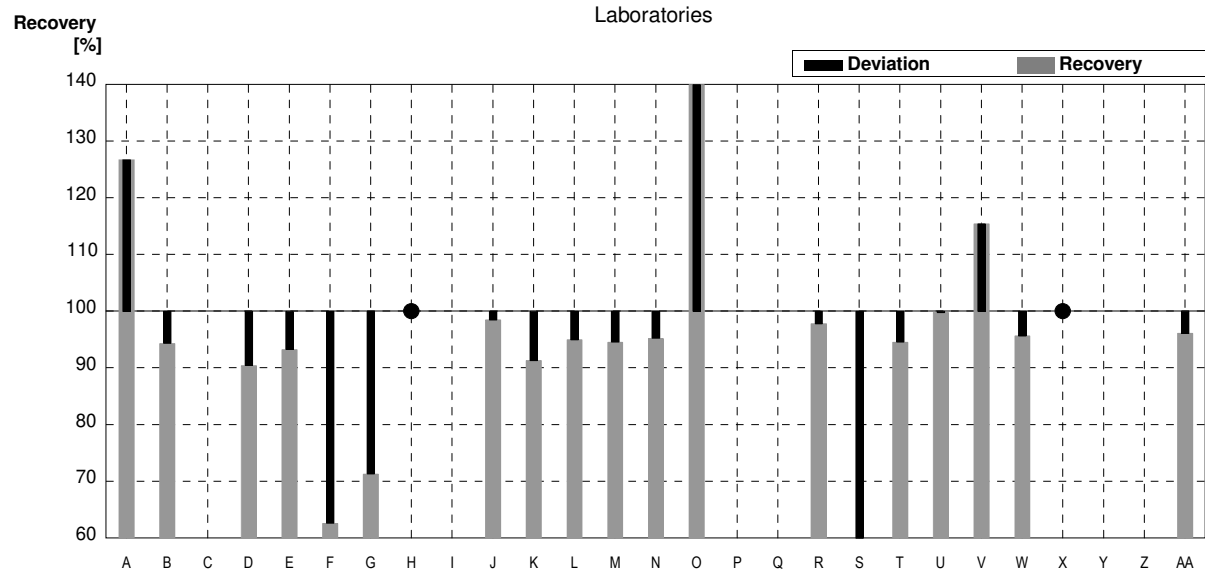
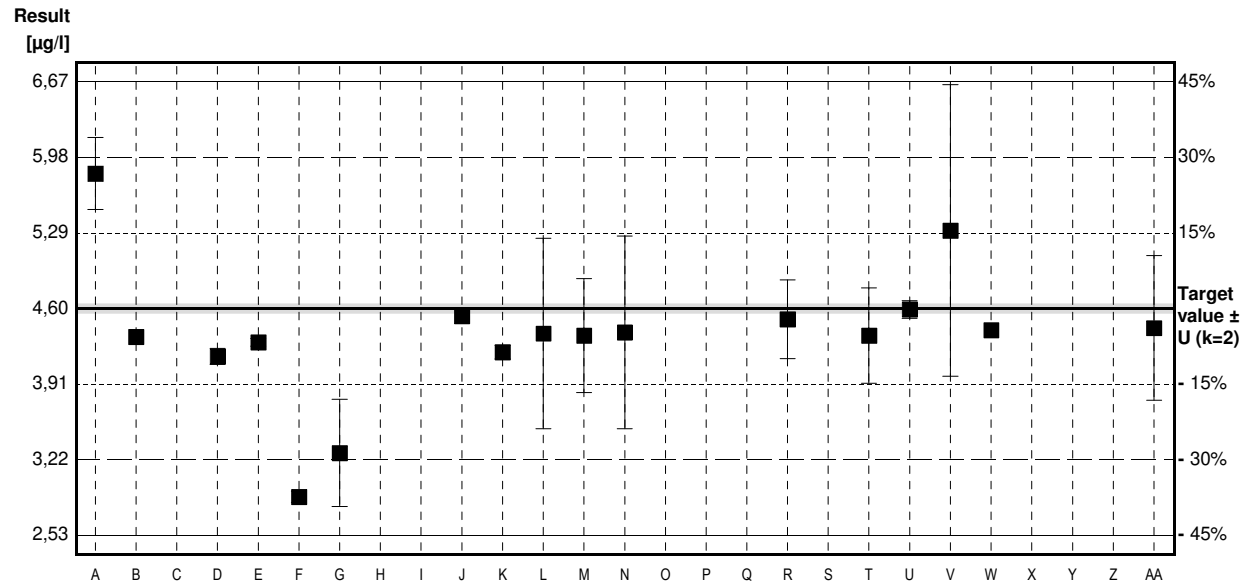
Target value ± U (k=2) 4,60 µg/l ± 0,04 µg/l

IFA result ± U (k=2) 4,58 µg/l ± 0,23 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	5,83 *	0,33	µg/l	127%	3,43
B	4,339		µg/l	94%	-0,73
C			µg/l		
D	4,16	0,073	µg/l	90%	-1,23
E	4,29	0,036	µg/l	93%	-0,86
F	2,88 *	0,05	µg/l	63%	-4,79
G	3,28 *	0,49	µg/l	71%	-3,68
H	<5		µg/l	*	
I			µg/l		
J	4,53		µg/l	98%	-0,20
K	4,20	0,063	µg/l	91%	-1,11
L	4,37	0,87	µg/l	95%	-0,64
M	4,35	0,52	µg/l	95%	-0,70
N	4,38	0,88	µg/l	95%	-0,61
O	7,0 *	5	µg/l	152%	6,69
P			µg/l		
Q			µg/l		
R	4,50	0,360	µg/l	98%	-0,28
S	1,84 *	0,18	µg/l	40%	-7,69
T	4,35	0,435	µg/l	95%	-0,70
U	4,59	0,0801	µg/l	100%	-0,03
V	5,31 *	1,33	µg/l	115%	1,98
W	4,40		µg/l	96%	-0,56
X	<10		µg/l	*	
Y			µg/l		
Z			µg/l		
AA	4,42	0,66	µg/l	96%	-0,50

	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,37 ± 0,70	4,38 ± 0,10	µg/l
Recov. ± CI(99%)	95,0 ± 15,1	95,1 ± 2,2	%
SD between labs	1,05	0,12	µg/l
RSD between labs	24,1	2,8	%
n for calculation	19	13	



Sample M168B
Parameter Copper

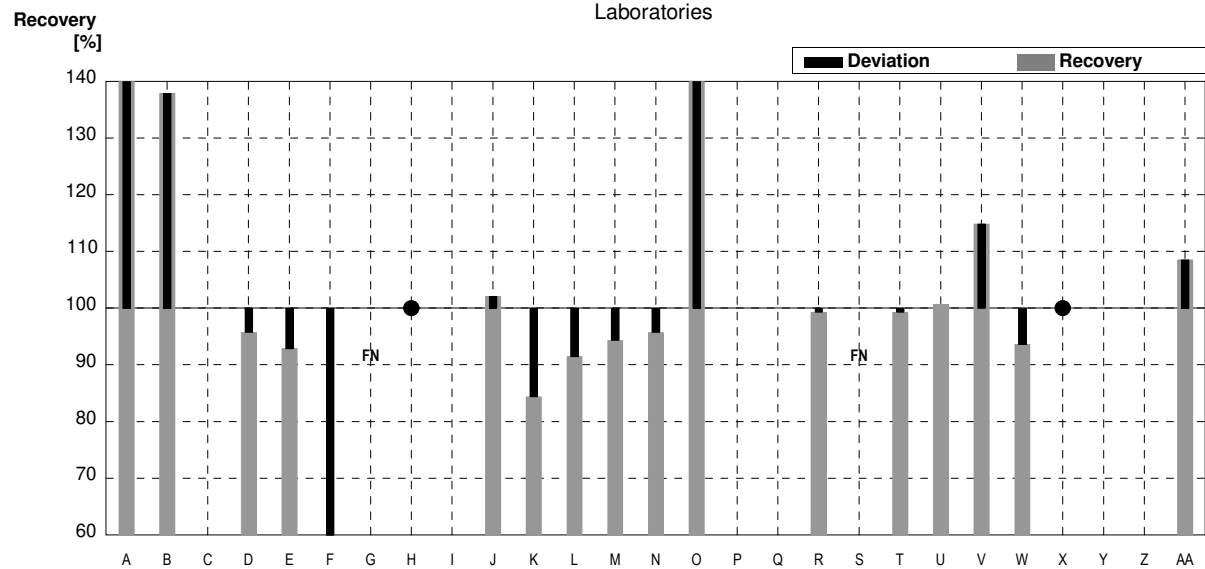
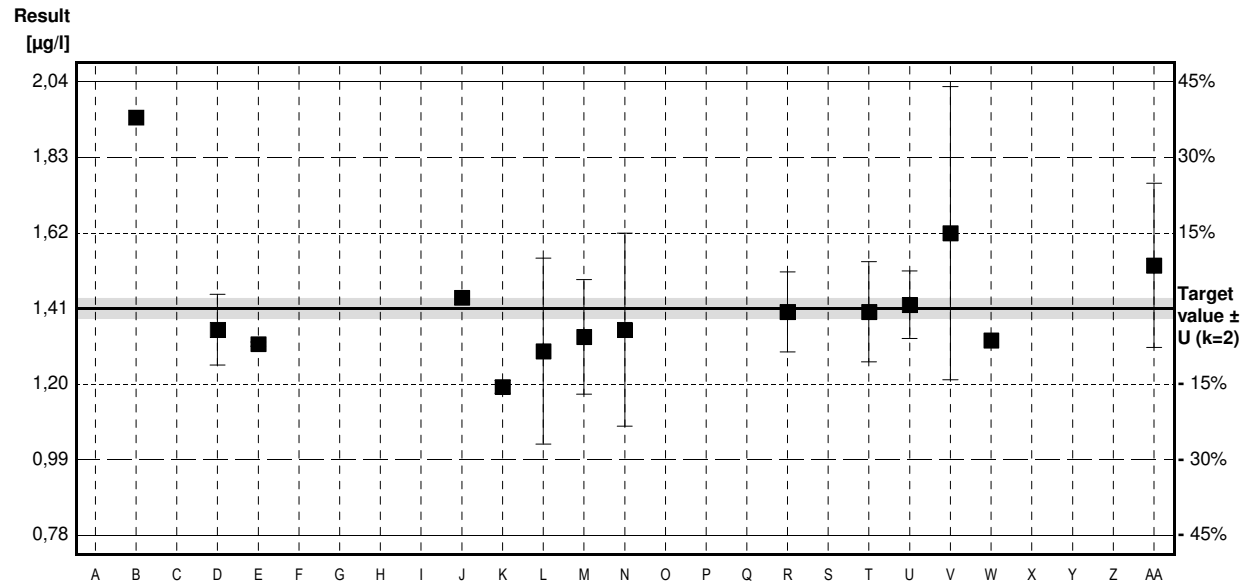
Target value ± U (k=2) 1,41 µg/l ± 0,03 µg/l

IFA result ± U (k=2) 1,39 µg/l ± 0,12 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	3,23 *	0,18	µg/l	229%	16,55
B	1,944 *		µg/l	138%	4,86
C			µg/l		
D	1,35	0,099	µg/l	96%	-0,55
E	1,31	0,006	µg/l	93%	-0,91
F	0,150 *	0,05	µg/l	11%	-11,46
G	<1		µg/l	FN	
H	<5		µg/l	*	
I			µg/l		
J	1,44		µg/l	102%	0,27
K	1,19	0,0179	µg/l	84%	-2,00
L	1,29	0,26	µg/l	91%	-1,09
M	1,33	0,16	µg/l	94%	-0,73
N	1,35	0,270	µg/l	96%	-0,55
O	5,0 *	5	µg/l	355%	32,64
P			µg/l		
Q			µg/l		
R	1,40	0,112	µg/l	99%	-0,09
S	<1	0,25	µg/l	FN	
T	1,40	0,14	µg/l	99%	-0,09
U	1,42	0,0948	µg/l	101%	0,09
V	1,62	0,41	µg/l	115%	1,91
W	1,32		µg/l	94%	-0,82
X	<10		µg/l	*	
Y			µg/l		
Z			µg/l		
AA	1,53	0,23	µg/l	109%	1,09

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,66 ± 0,73	1,38 ± 0,09	µg/l
Recov. ± CI(99%)	118,0 ± 52,0	97,9 ± 6,6	%
SD between labs	1,03	0,11	µg/l
RSD between labs	62,2	7,9	%
n for calculation	17	13	



Sample M168A

Parameter Manganese

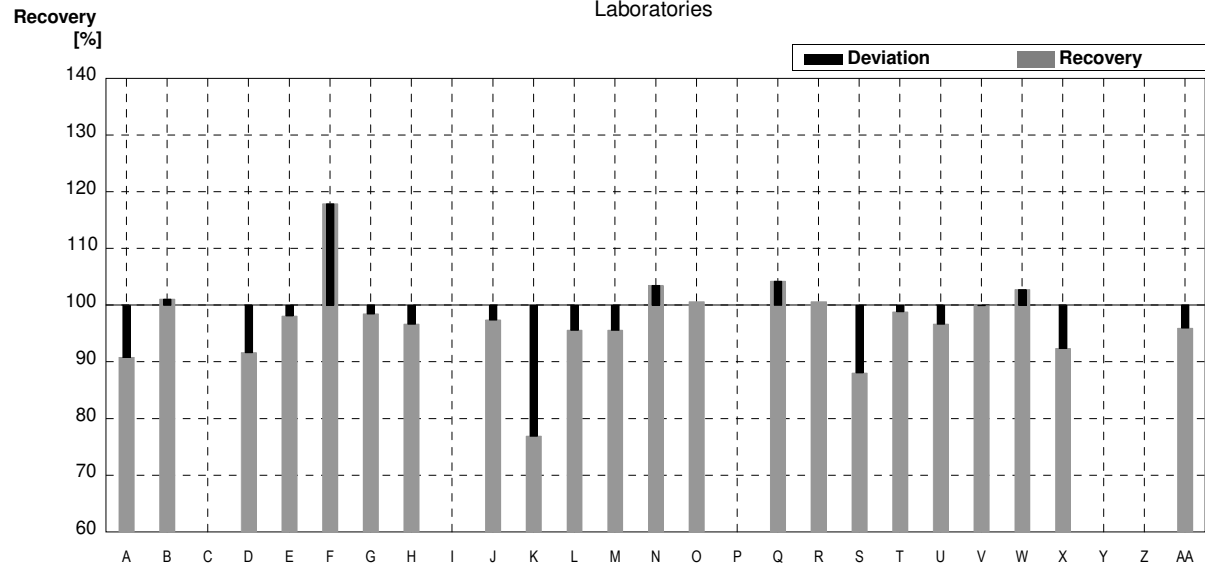
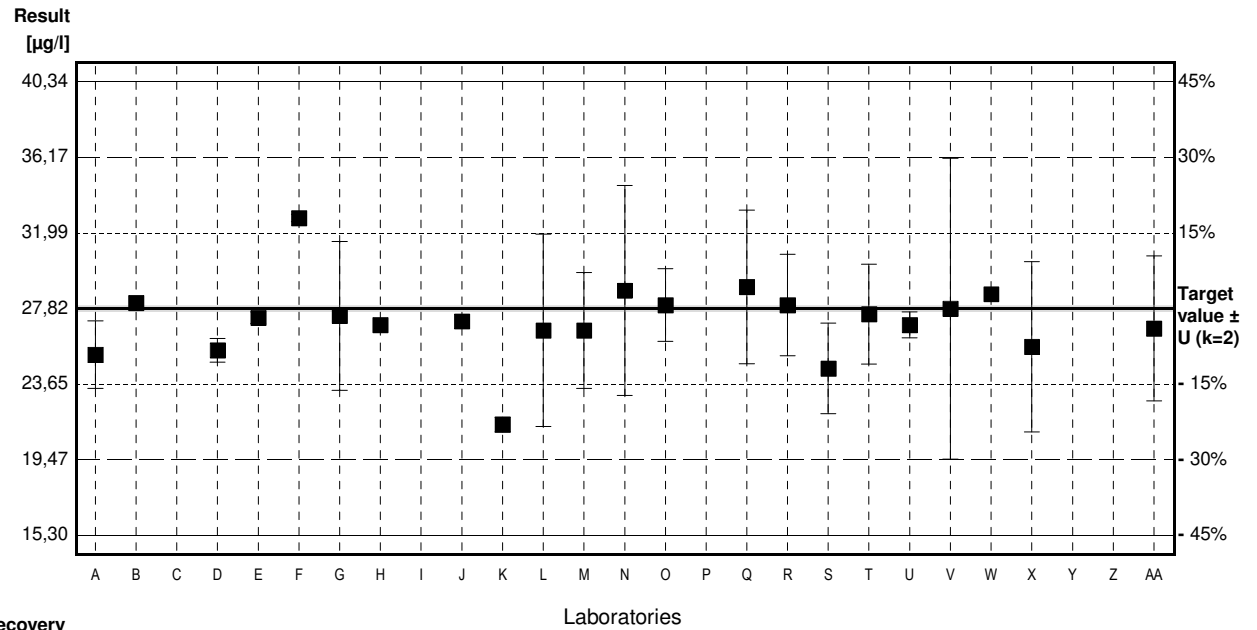
Target value $\pm U$ (k=2) 27,82 $\mu\text{g/l}$ \pm 0,15 $\mu\text{g/l}$

IFA result $\pm U$ (k=2) 27,2 $\mu\text{g/l}$ \pm 1,8 $\mu\text{g/l}$

Stability test $\mu\text{g/l}$

Lab Code	Result	\pm	Unit	Recovery	z-Score
A	25,26	1,87	$\mu\text{g/l}$	91%	-1,74
B	28,12		$\mu\text{g/l}$	101%	0,20
C			$\mu\text{g/l}$		
D	25,5	0,65	$\mu\text{g/l}$	92%	-1,57
E	27,3	0,32	$\mu\text{g/l}$	98%	-0,35
F	32,8 *	0,2	$\mu\text{g/l}$	118%	3,38
G	27,4	4,11	$\mu\text{g/l}$	98%	-0,28
H	26,9		$\mu\text{g/l}$	97%	-0,62
I			$\mu\text{g/l}$		
J	27,1		$\mu\text{g/l}$	97%	-0,49
K	21,4 *	0,412	$\mu\text{g/l}$	77%	-4,35
L	26,6	5,31	$\mu\text{g/l}$	96%	-0,83
M	26,6	3,2	$\mu\text{g/l}$	96%	-0,83
N	28,8	5,8	$\mu\text{g/l}$	104%	0,66
O	28,0	2	$\mu\text{g/l}$	101%	0,12
P			$\mu\text{g/l}$		
Q	29,0	4,24	$\mu\text{g/l}$	104%	0,80
R	28,0	2,80	$\mu\text{g/l}$	101%	0,12
S	24,5	2,5	$\mu\text{g/l}$	88%	-2,25
T	27,5	2,75	$\mu\text{g/l}$	99%	-0,22
U	26,9	0,711	$\mu\text{g/l}$	97%	-0,62
V	27,8	8,3	$\mu\text{g/l}$	100%	-0,01
W	28,6		$\mu\text{g/l}$	103%	0,53
X	25,7	4,7	$\mu\text{g/l}$	92%	-1,44
Y			$\mu\text{g/l}$		
Z			$\mu\text{g/l}$		
AA	26,7	4,0	$\mu\text{g/l}$	96%	-0,76

	All results	Outliers excl.	Unit
Mean \pm CI(99%)	27,11 \pm 1,27	27,11 \pm 0,77	$\mu\text{g/l}$
Recov. \pm CI(99%)	97,5 \pm 4,6	97,5 \pm 2,8	%
SD between labs	2,10	1,21	$\mu\text{g/l}$
RSD between labs	7,7	4,4	%
n for calculation	22	20	



Sample M168B

Parameter Manganese

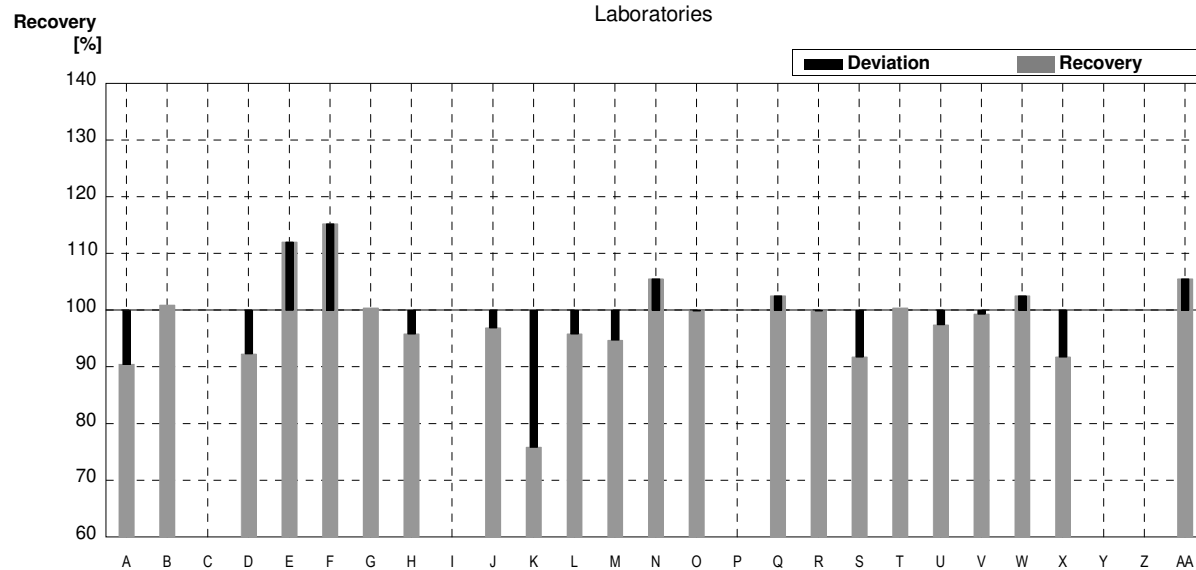
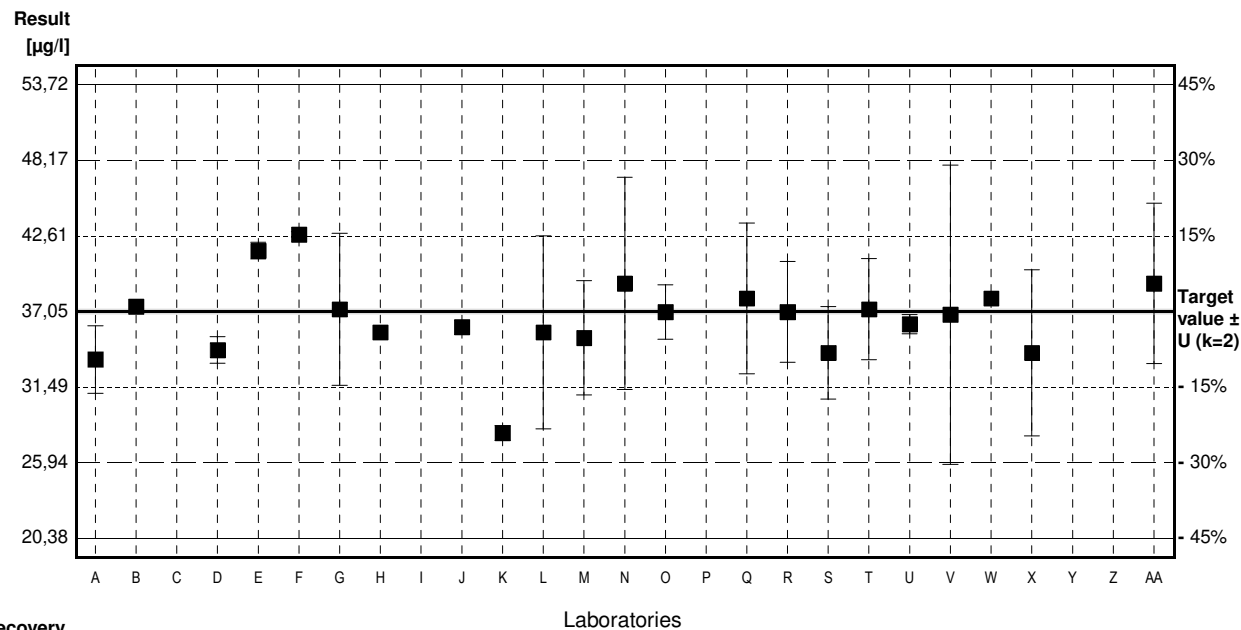
Target value ± U (k=2) 37,05 µg/l ± 0,18 µg/l

IFA result ± U (k=2) 35,3 µg/l ± 2,4 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	33,51	2,48	µg/l	90%	-1,80
B	37,39		µg/l	101%	0,17
C			µg/l		
D	34,2	0,97	µg/l	92%	-1,45
E	41,5	0,61	µg/l	112%	2,27
F	42,7	0,2	µg/l	115%	2,88
G	37,2	5,58	µg/l	100%	0,08
H	35,5		µg/l	96%	-0,79
I			µg/l		
J	35,9		µg/l	97%	-0,59
K	28,1 *	0,54	µg/l	76%	-4,56
L	35,5	7,10	µg/l	96%	-0,79
M	35,1	4,2	µg/l	95%	-0,99
N	39,1	7,8	µg/l	106%	1,04
O	37,0	2	µg/l	100%	-0,03
P			µg/l		
Q	38,0	5,55	µg/l	103%	0,48
R	37,0	3,70	µg/l	100%	-0,03
S	34,0	3,4	µg/l	92%	-1,55
T	37,2	3,72	µg/l	100%	0,08
U	36,1	0,705	µg/l	97%	-0,48
V	36,8	11	µg/l	99%	-0,13
W	38,0		µg/l	103%	0,48
X	34,0	6,1	µg/l	92%	-1,55
Y			µg/l		
Z			µg/l		
AA	39,1	5,9	µg/l	106%	1,04

	All results	Outliers excl.	Unit
Mean ± CI(99%)	36,50 ± 1,79	36,90 ± 1,47	µg/l
Recov. ± CI(99%)	98,5 ± 4,8	99,6 ± 4,0	%
SD between labs	2,97	2,36	µg/l
RSD between labs	8,1	6,4	%
n for calculation	22	21	



Sample M168A

Parameter Nickel

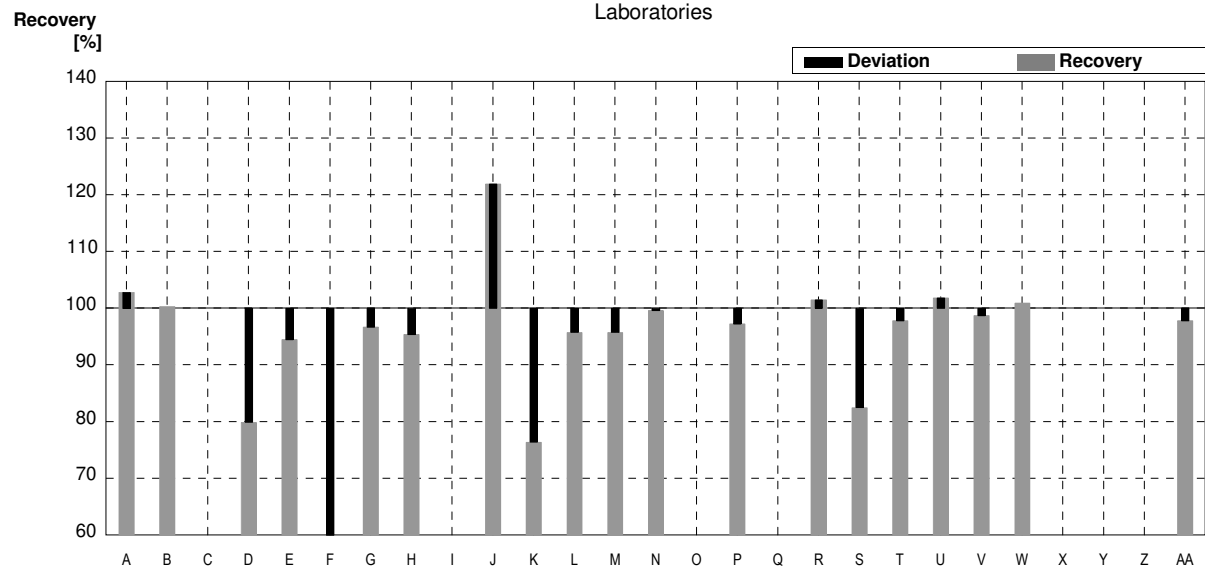
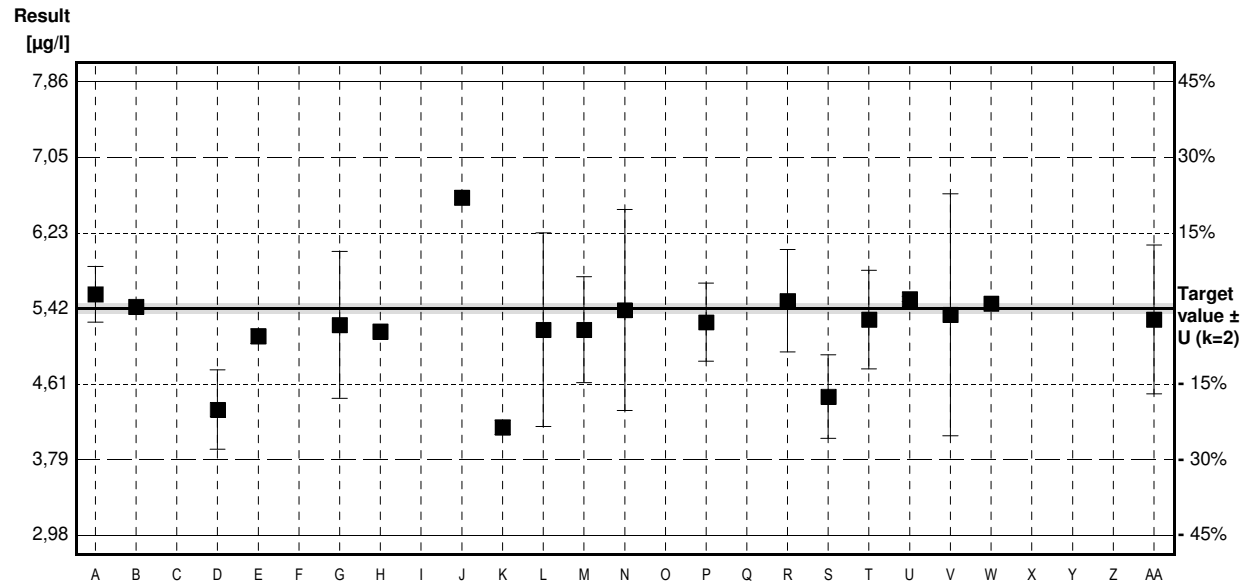
Target value $\pm U$ (k=2) 5,42 $\mu\text{g/l}$ \pm 0,05 $\mu\text{g/l}$

IFA result $\pm U$ (k=2) 5,3 $\mu\text{g/l}$ \pm 0,2 $\mu\text{g/l}$

Stability test $\mu\text{g/l}$

Lab Code	Result	\pm	Unit	Recovery	z-Score
A	5,57	0,30	$\mu\text{g/l}$	103%	0,37
B	5,435		$\mu\text{g/l}$	100%	0,04
C			$\mu\text{g/l}$		
D	4,33 *	0,427	$\mu\text{g/l}$	80%	-2,72
E	5,12	0,08	$\mu\text{g/l}$	94%	-0,75
F	0,480 *	0,05	$\mu\text{g/l}$	9%	-12,32
G	5,24	0,79	$\mu\text{g/l}$	97%	-0,45
H	5,17		$\mu\text{g/l}$	95%	-0,62
I			$\mu\text{g/l}$		
J	6,61 *		$\mu\text{g/l}$	122%	2,97
K	4,14 *	0,078	$\mu\text{g/l}$	76%	-3,19
L	5,19	1,04	$\mu\text{g/l}$	96%	-0,57
M	5,19	0,57	$\mu\text{g/l}$	96%	-0,57
N	5,4	1,08	$\mu\text{g/l}$	100%	-0,05
O			$\mu\text{g/l}$		
P	5,27	0,42	$\mu\text{g/l}$	97%	-0,37
Q			$\mu\text{g/l}$		
R	5,50	0,550	$\mu\text{g/l}$	101%	0,20
S	4,47 *	0,45	$\mu\text{g/l}$	82%	-2,37
T	5,3	0,53	$\mu\text{g/l}$	98%	-0,30
U	5,52	0,0288	$\mu\text{g/l}$	102%	0,25
V	5,35	1,3	$\mu\text{g/l}$	99%	-0,17
W	5,47		$\mu\text{g/l}$	101%	0,12
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		
Z			$\mu\text{g/l}$		
AA	5,3	0,8	$\mu\text{g/l}$	98%	-0,30

	All results	Outliers excl.	Unit
Mean \pm CI(99%)	5,00 \pm 0,75	5,34 \pm 0,11	$\mu\text{g/l}$
Recov. \pm CI(99%)	92,3 \pm 13,9	98,4 \pm 2,0	%
SD between labs	1,18	0,14	$\mu\text{g/l}$
RSD between labs	23,6	2,7	%
n for calculation	20	15	



Sample M168B

Parameter Nickel

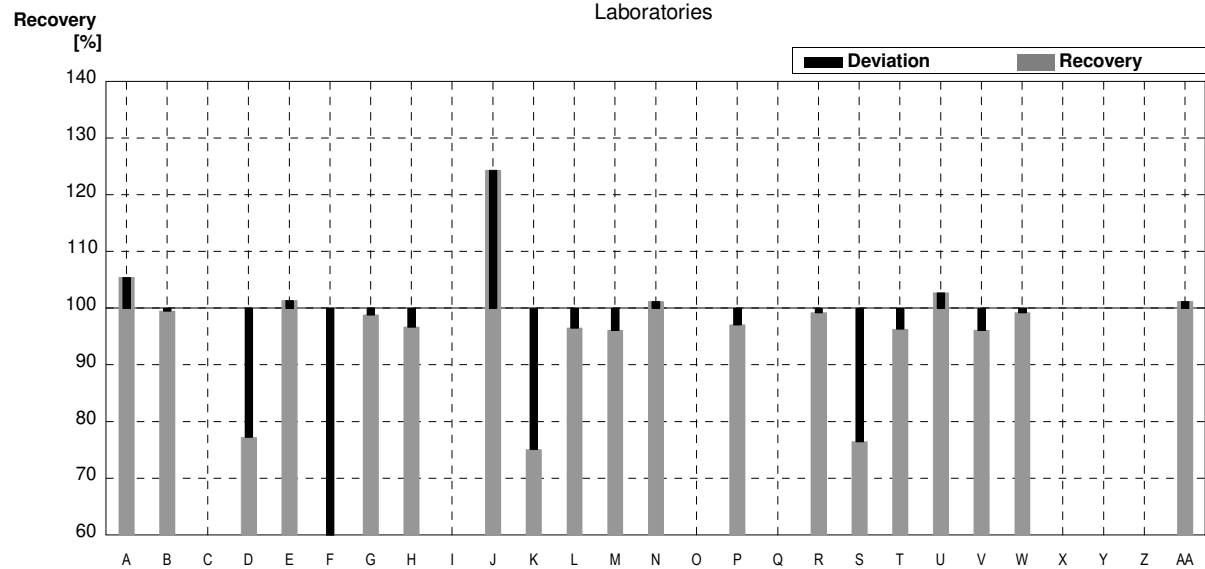
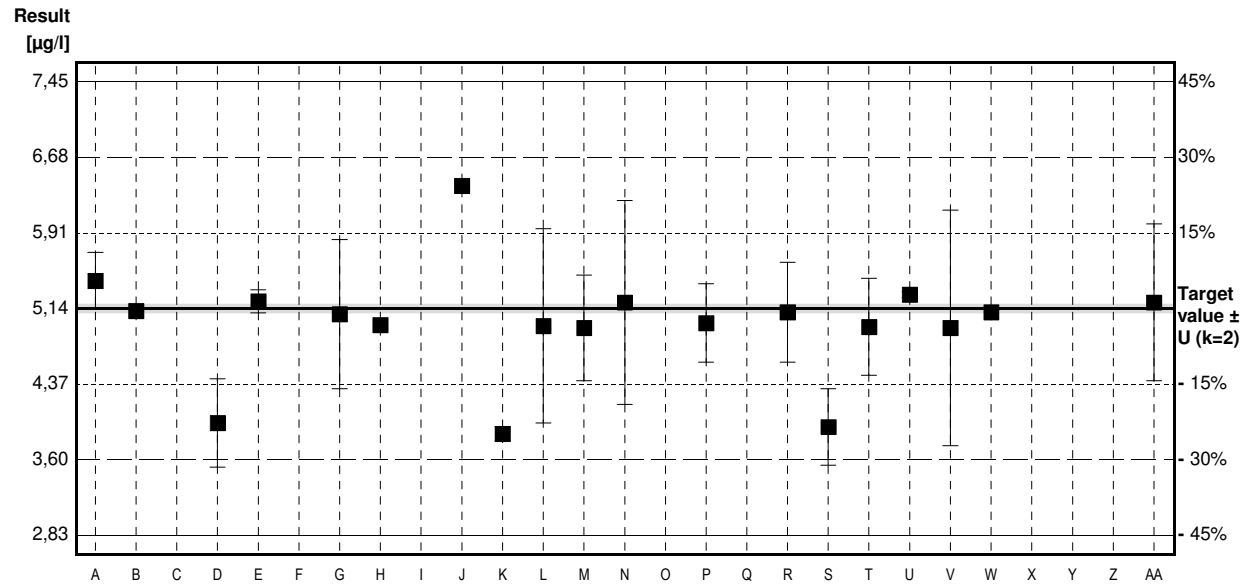
Target value $\pm U$ (k=2) 5,14 $\mu\text{g/l}$ \pm 0,04 $\mu\text{g/l}$

IFA result $\pm U$ (k=2) 5,1 $\mu\text{g/l}$ \pm 0,2 $\mu\text{g/l}$

Stability test $\mu\text{g/l}$

Lab Code	Result	\pm	Unit	Recovery	z-Score
A	5,42	0,29	$\mu\text{g/l}$	105%	0,74
B	5,114		$\mu\text{g/l}$	99%	-0,07
C			$\mu\text{g/l}$		
D	3,97 *	0,451	$\mu\text{g/l}$	77%	-3,08
E	5,21	0,117	$\mu\text{g/l}$	101%	0,18
F	0,460 *	0,05	$\mu\text{g/l}$	9%	-12,30
G	5,08	0,76	$\mu\text{g/l}$	99%	-0,16
H	4,97		$\mu\text{g/l}$	97%	-0,45
I			$\mu\text{g/l}$		
J	6,39 *		$\mu\text{g/l}$	124%	3,29
K	3,86 *	0,073	$\mu\text{g/l}$	75%	-3,37
L	4,96	0,99	$\mu\text{g/l}$	96%	-0,47
M	4,94	0,54	$\mu\text{g/l}$	96%	-0,53
N	5,2	1,04	$\mu\text{g/l}$	101%	0,16
O			$\mu\text{g/l}$		
P	4,99	0,40	$\mu\text{g/l}$	97%	-0,39
Q			$\mu\text{g/l}$		
R	5,10	0,510	$\mu\text{g/l}$	99%	-0,11
S	3,93 *	0,39	$\mu\text{g/l}$	76%	-3,18
T	4,95	0,495	$\mu\text{g/l}$	96%	-0,50
U	5,28	0,0288	$\mu\text{g/l}$	103%	0,37
V	4,94	1,2	$\mu\text{g/l}$	96%	-0,53
W	5,1		$\mu\text{g/l}$	99%	-0,11
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		
Z			$\mu\text{g/l}$		
AA	5,2	0,8	$\mu\text{g/l}$	101%	0,16

	All results	Outliers excl.	Unit
Mean \pm CI(99%)	4,75 \pm 0,74	5,10 \pm 0,11	$\mu\text{g/l}$
Recov. \pm CI(99%)	92,5 \pm 14,3	99,2 \pm 2,2	%
SD between labs	1,15	0,14	$\mu\text{g/l}$
RSD between labs	24,3	2,8	%
n for calculation	20	15	



Sample M168A

Parameter Mercury

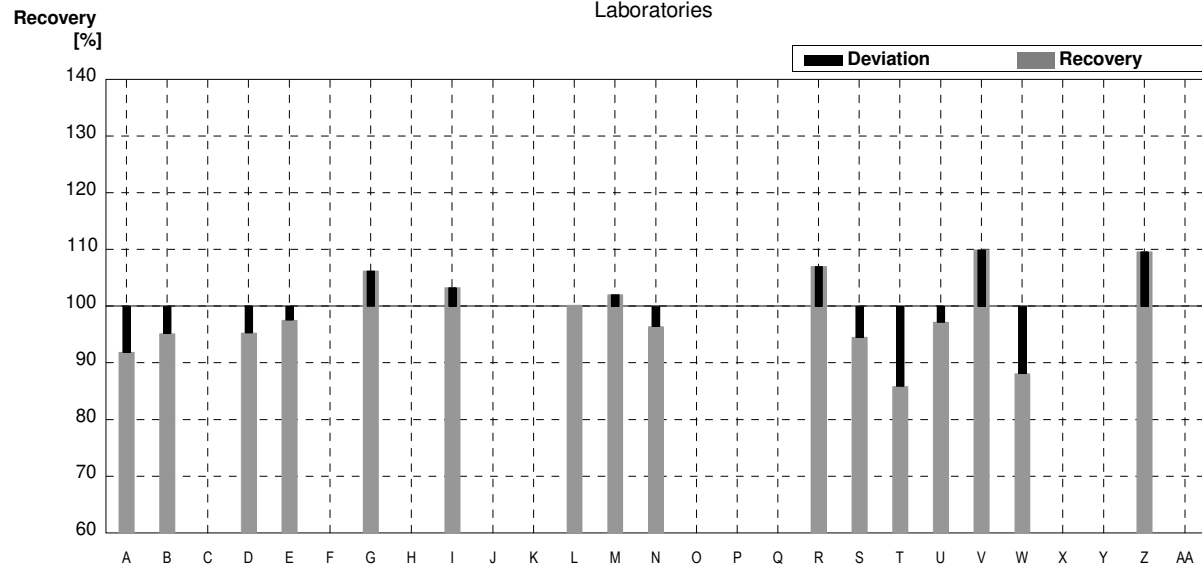
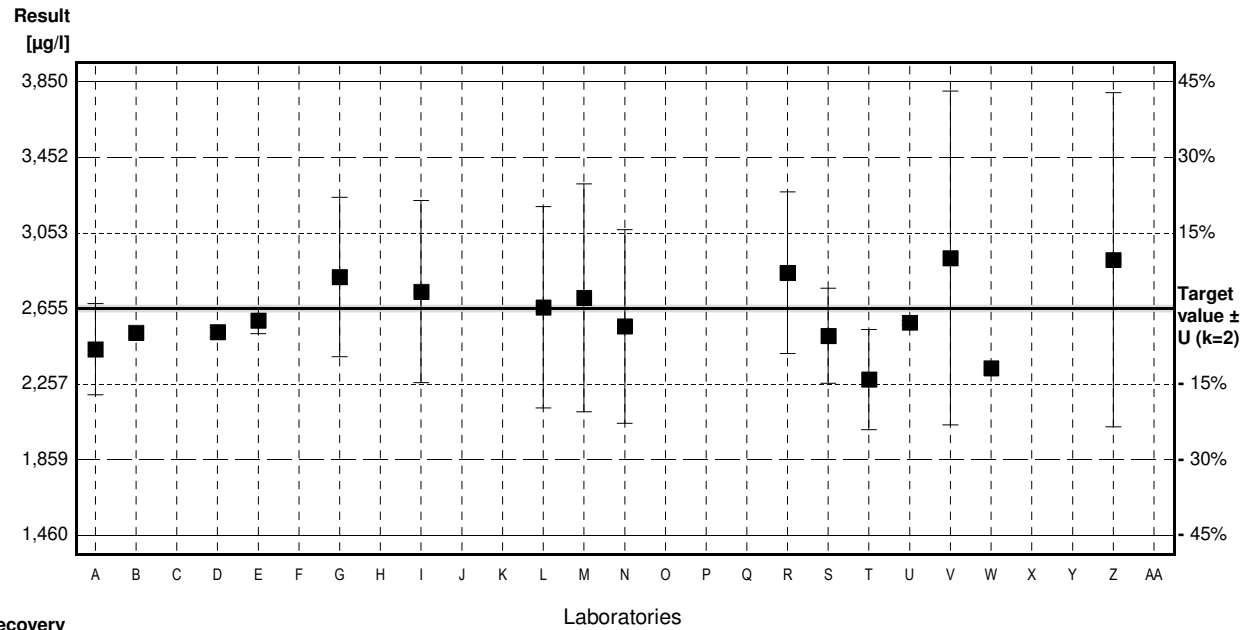
Target value ± U (k=2) 2,655 µg/l ± 0,018 µg/l

IFA result ± U (k=2) 2,90 µg/l ± 0,54 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,439	0,24	µg/l	92%	-0,74
B	2,527		µg/l	95%	-0,44
C			µg/l		
D	2,53	0,023	µg/l	95%	-0,43
E	2,59	0,069	µg/l	98%	-0,22
F			µg/l		
G	2,82	0,42	µg/l	106%	0,56
H			µg/l		
I	2,743	0,48	µg/l	103%	0,30
J			µg/l		
K			µg/l		
L	2,66	0,53	µg/l	100%	0,02
M	2,71	0,60	µg/l	102%	0,19
N	2,56	0,51	µg/l	96%	-0,33
O			µg/l		
P			µg/l		
Q			µg/l		
R	2,842	0,426	µg/l	107%	0,64
S	2,51	0,25	µg/l	95%	-0,50
T	2,28	0,264	µg/l	86%	-1,28
U	2,58	0,0121	µg/l	97%	-0,26
V	2,92	0,88	µg/l	110%	0,91
W	2,34		µg/l	88%	-1,08
X			µg/l		
Y			µg/l		
Z	2,91	0,88	µg/l	110%	0,87
AA			µg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,623 ± 0,141	2,623 ± 0,141	µg/l
Recov. ± CI(99%)	98,8 ± 5,3	98,8 ± 5,3	%
SD between labs	0,191	0,191	µg/l
RSD between labs	7,3	7,3	%
n for calculation	16	16	



Sample M168B
Parameter Mercury

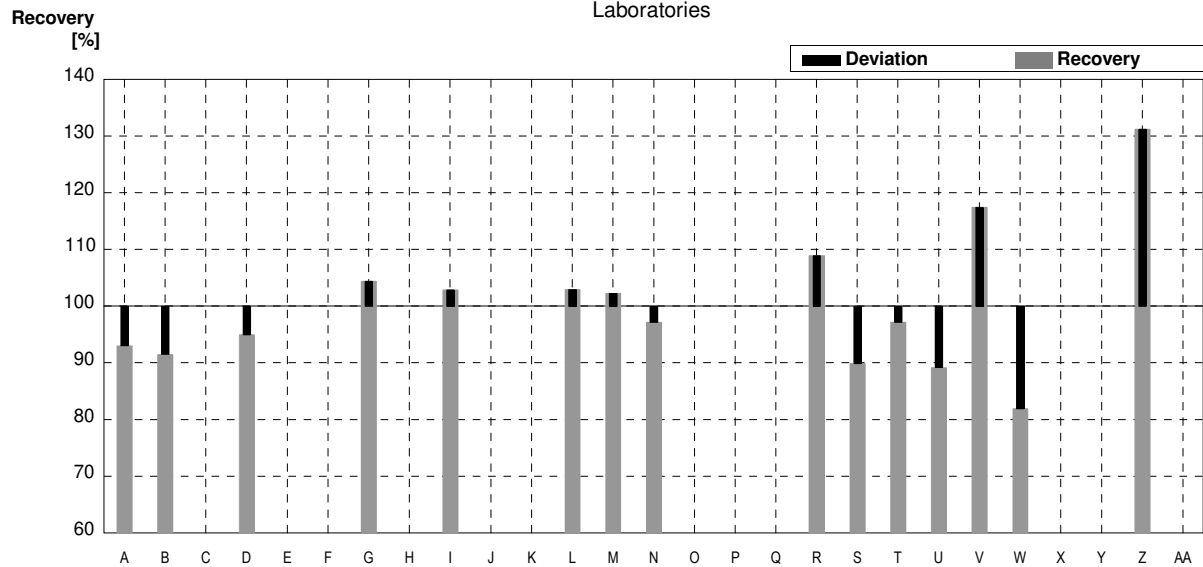
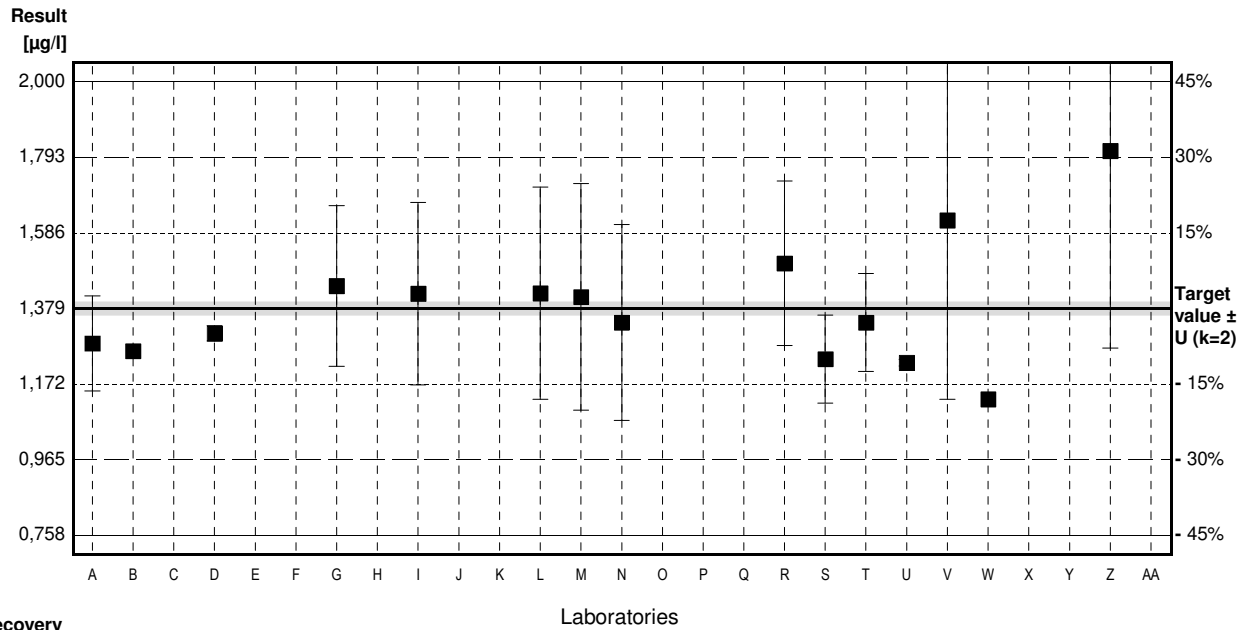
Target value ± U (k=2) 1,379 µg/l ± 0,018 µg/l

IFA result ± U (k=2) 1,45 µg/l ± 0,27 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	1,283	0,13	µg/l	93%	-0,63
B	1,262		µg/l	92%	-0,77
C			µg/l		
D	1,31	0,021	µg/l	95%	-0,45
E			µg/l		
F			µg/l		
G	1,44	0,22	µg/l	104%	0,40
H			µg/l		
I	1,419	0,25	µg/l	103%	0,26
J			µg/l		
K			µg/l		
L	1,42	0,29	µg/l	103%	0,27
M	1,41	0,31	µg/l	102%	0,20
N	1,34	0,268	µg/l	97%	-0,26
O			µg/l		
P			µg/l		
Q			µg/l		
R	1,502	0,2253	µg/l	109%	0,81
S	1,24	0,12	µg/l	90%	-0,92
T	1,34	0,134	µg/l	97%	-0,26
U	1,23	0,00922	µg/l	89%	-0,98
V	1,62	0,49	µg/l	117%	1,59
W	1,13		µg/l	82%	-1,64
X			µg/l		
Y			µg/l		
Z	1,81 *	0,54	µg/l	131%	2,84
AA			µg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,384 ± 0,130	1,353 ± 0,101	µg/l
Recov. ± CI(99%)	100,3 ± 9,4	98,1 ± 7,3	%
SD between labs	0,169	0,126	µg/l
RSD between labs	12,2	9,3	%
n for calculation	15	14	



Sample M168A
Parameter Selenium

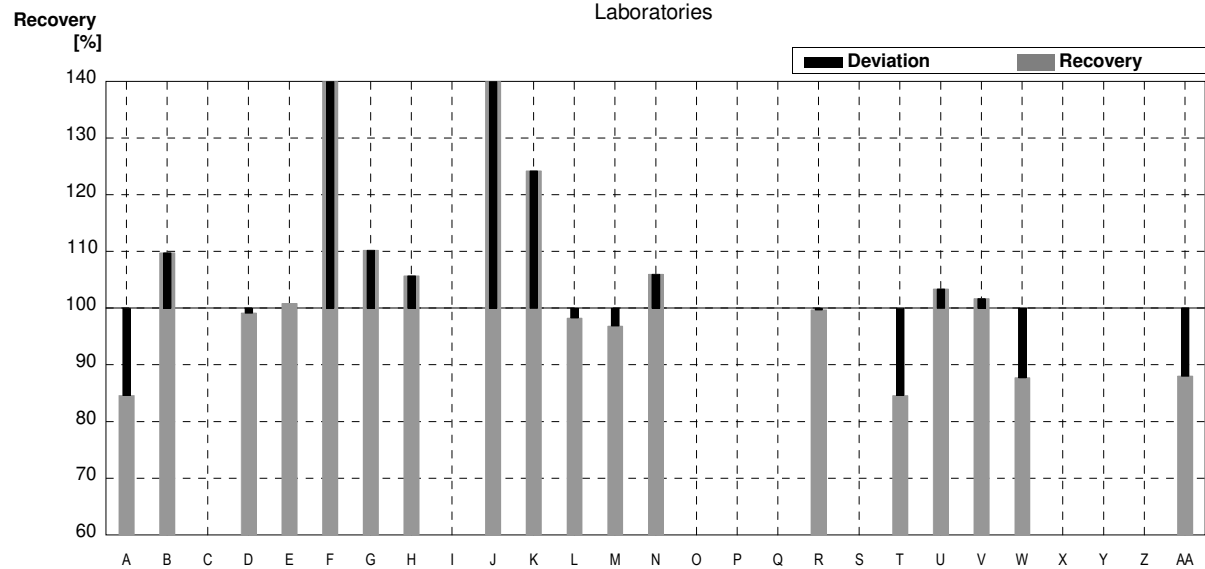
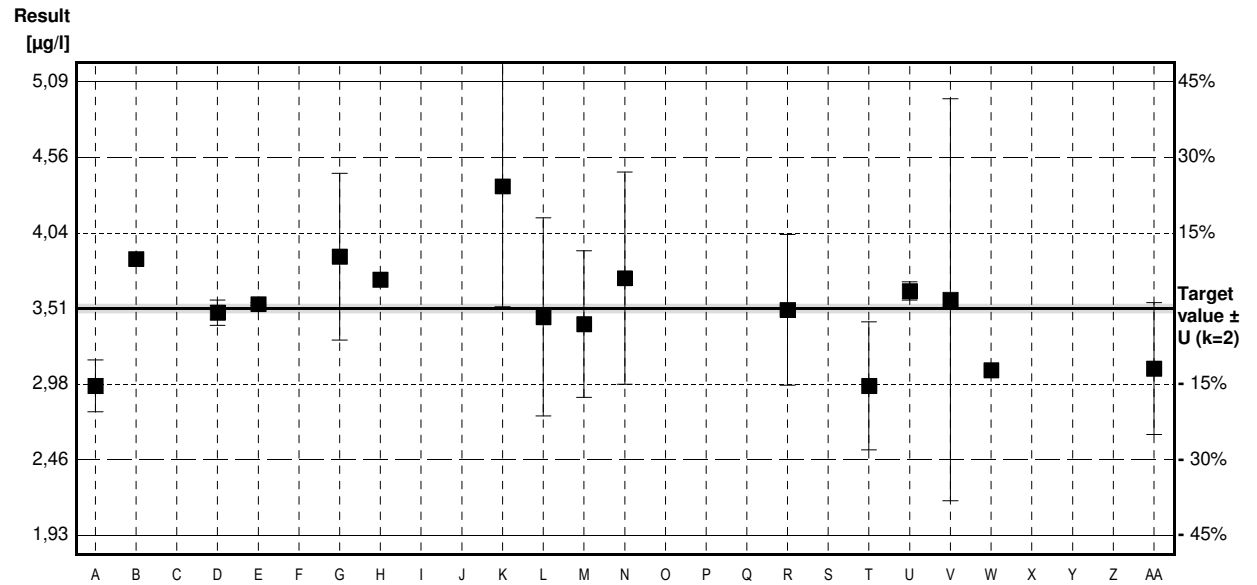
Target value ± U (k=2) 3,51 µg/l ± 0,03 µg/l

IFA result ± U (k=2) 3,55 µg/l ± 0,41 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,97	0,18	µg/l	85%	-1,64
B	3,854		µg/l	110%	1,04
C			µg/l		
D	3,48	0,088	µg/l	99%	-0,09
E	3,54	0,010	µg/l	101%	0,09
F	60 *	0,2	µg/l	1709%	171,21
G	3,87	0,58	µg/l	110%	1,09
H	3,71		µg/l	106%	0,61
I			µg/l		
J	5,27 *		µg/l	150%	5,33
K	4,36	0,84	µg/l	124%	2,58
L	3,45	0,69	µg/l	98%	-0,18
M	3,40	0,51	µg/l	97%	-0,33
N	3,72	0,74	µg/l	106%	0,64
O			µg/l		
P			µg/l		
Q			µg/l		
R	3,50	0,525	µg/l	100%	-0,03
S			µg/l		
T	2,97	0,446	µg/l	85%	-1,64
U	3,63	0,0631	µg/l	103%	0,36
V	3,57	1,4	µg/l	102%	0,18
W	3,08		µg/l	88%	-1,30
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	3,09	0,46	µg/l	88%	-1,27

	All results	Outliers excl.	Unit
Mean ± CI(99%)	6,75 ± 9,09	3,51 ± 0,27	µg/l
Recov. ± CI(99%)	192,3 ± 259,0	100,1 ± 7,7	%
SD between labs	13,30	0,37	µg/l
RSD between labs	197,1	10,5	%
n for calculation	18	16	



Sample M168B
Parameter Selenium

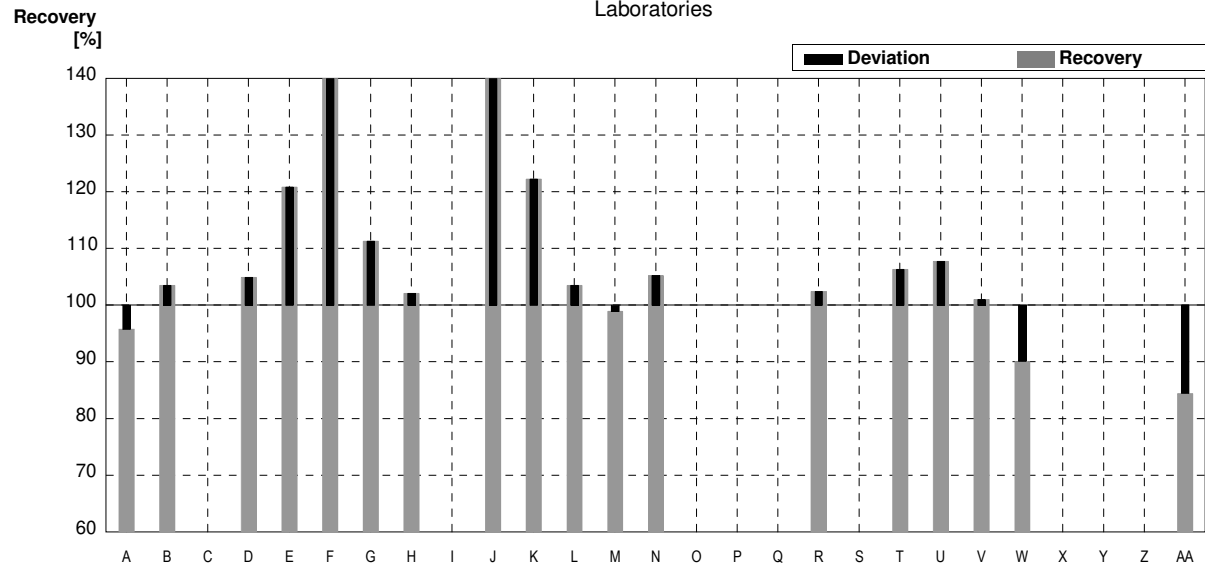
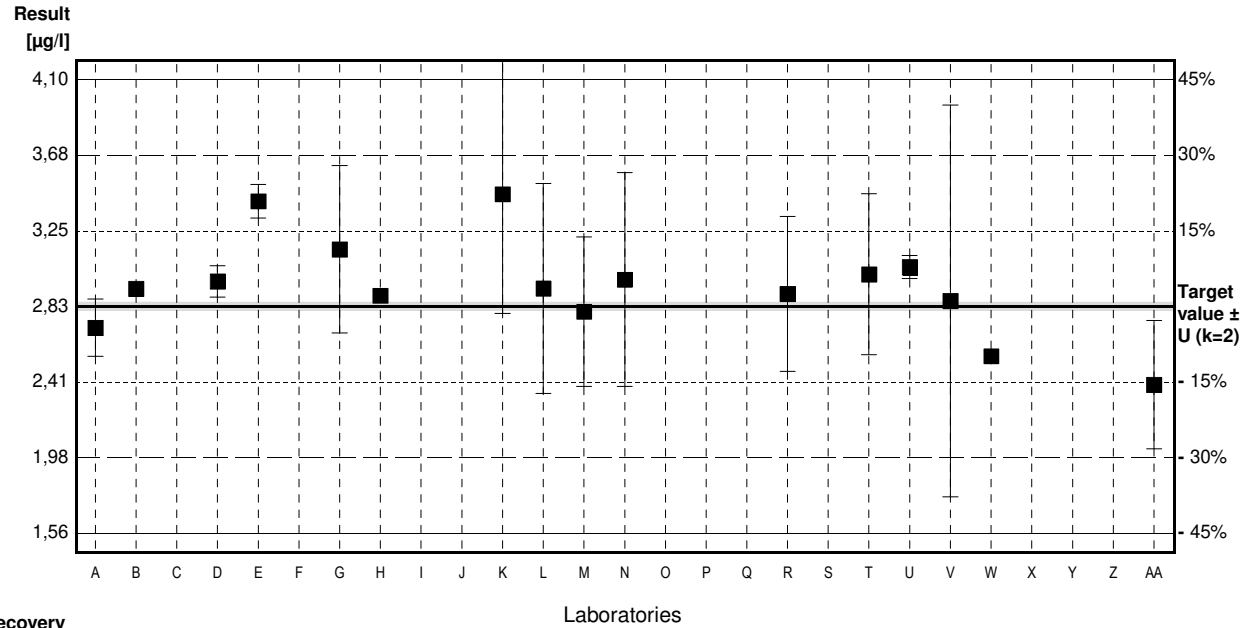
Target value ± U (k=2) 2,83 µg/l ± 0,02 µg/l

IFA result ± U (k=2) 2,84 µg/l ± 0,33 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,71	0,16	µg/l	96%	-0,45
B	2,929		µg/l	103%	0,37
C			µg/l		
D	2,97	0,088	µg/l	105%	0,53
E	3,42	0,095	µg/l	121%	2,22
F	59,6 *	0,2	µg/l	2106%	213,41
G	3,15	0,47	µg/l	111%	1,20
H	2,89		µg/l	102%	0,23
I			µg/l		
J	4,54 *		µg/l	160%	6,43
K	3,46	0,67	µg/l	122%	2,37
L	2,93	0,59	µg/l	104%	0,38
M	2,80	0,42	µg/l	99%	-0,11
N	2,98	0,60	µg/l	105%	0,56
O			µg/l		
P			µg/l		
Q			µg/l		
R	2,90	0,435	µg/l	102%	0,26
S			µg/l		
T	3,01	0,452	µg/l	106%	0,68
U	3,05	0,0643	µg/l	108%	0,83
V	2,86	1,1	µg/l	101%	0,11
W	2,55		µg/l	90%	-1,05
X			µg/l		
Y			µg/l		
Z			µg/l		
AA	2,39	0,36	µg/l	84%	-1,65

	All results	Outliers excl.	Unit
Mean ± CI(99%)	6,17 ± 9,12	2,94 ± 0,20	µg/l
Recov. ± CI(99%)	218,2 ± 322,2	103,8 ± 7,1	%
SD between labs	13,34	0,27	µg/l
RSD between labs	216,1	9,2	%
n for calculation	18	16	



Sample M168A
Parameter Uranium

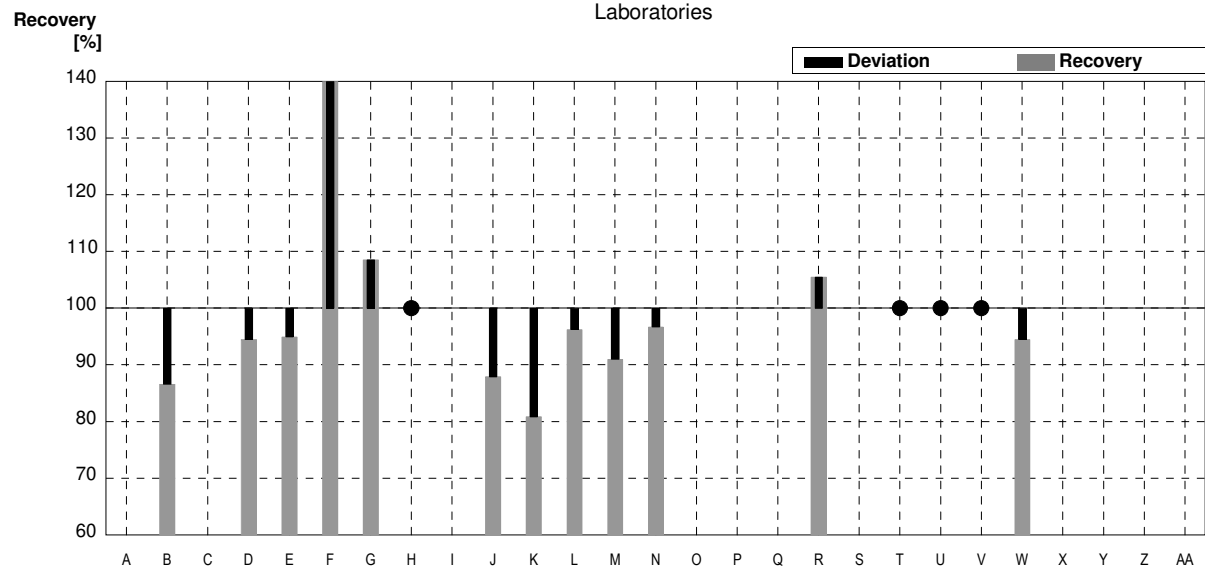
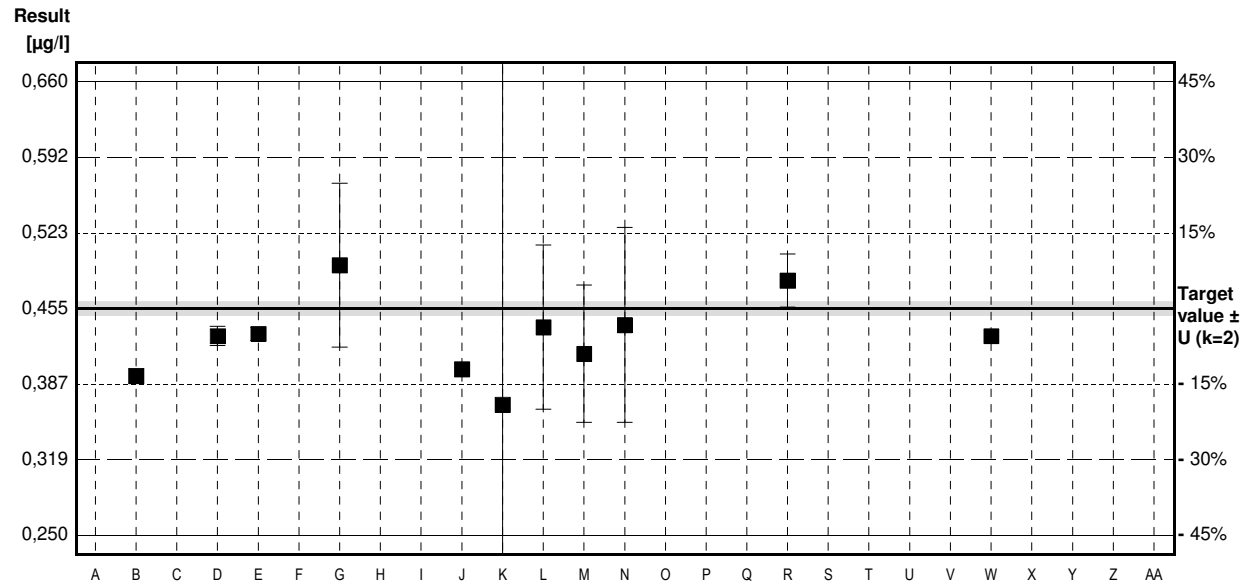
Target value ± U (k=2) 0,455 µg/l ± 0,006 µg/l

IFA result ± U (k=2) 0,447 µg/l ± 0,050 µg/l

Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			µg/l		
B	0,394		µg/l	87%	-2,44
C			µg/l		
D	0,430	0,0087	µg/l	95%	-1,00
E	0,432	0,006	µg/l	95%	-0,92
F	334 *	2	µg/l	73407%	13328,47
G	0,494	0,074	µg/l	109%	1,56
H	<2		µg/l	•	
I			µg/l		
J	0,400		µg/l	88%	-2,20
K	0,368	6,43	µg/l	81%	-3,48
L	0,438	0,074	µg/l	96%	-0,68
M	0,414	0,062	µg/l	91%	-1,64
N	0,440	0,088	µg/l	97%	-0,60
O			µg/l		
P			µg/l		
Q			µg/l		
R	0,480	0,0240	µg/l	105%	1,00
S			µg/l		
T	<1,0		µg/l	•	
U	<1,00		µg/l	•	
V	<0,5		µg/l	•	
W	0,430		µg/l	95%	-1,00
X			µg/l		
Y			µg/l		
Z			µg/l		
AA			µg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	28,227 ± 86,450	0,429 ± 0,035	µg/l
Recov. ± CI(99%)	6203,7 ± 19000,	94,3 ± 7,6	%
SD between labs	96,294	0,036	µg/l
RSD between labs	341,1	8,4	%
n for calculation	12	11	

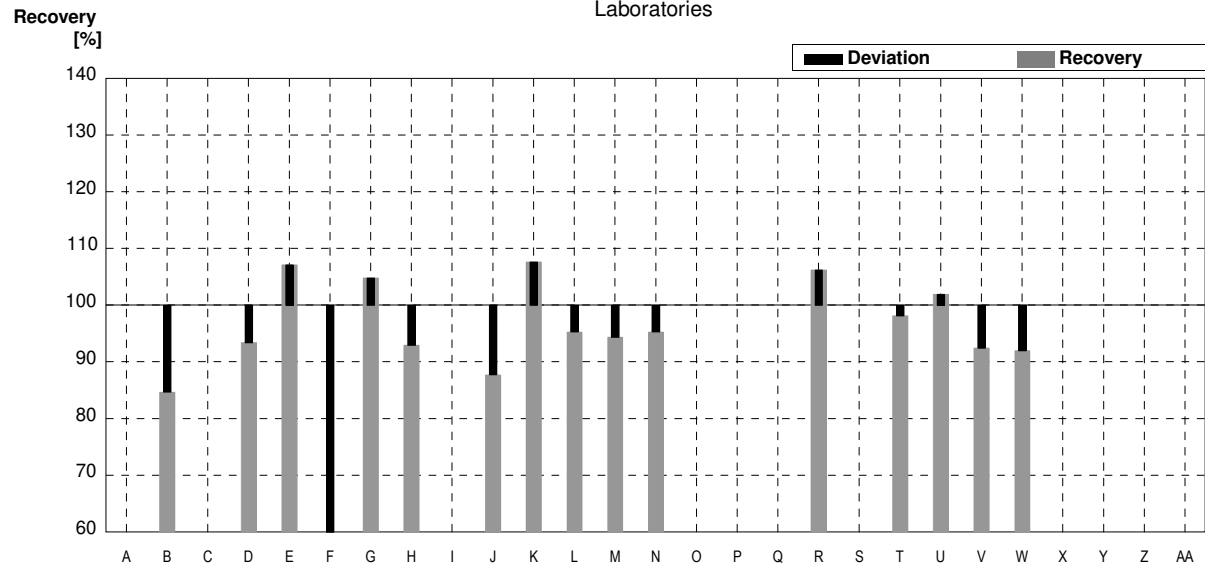
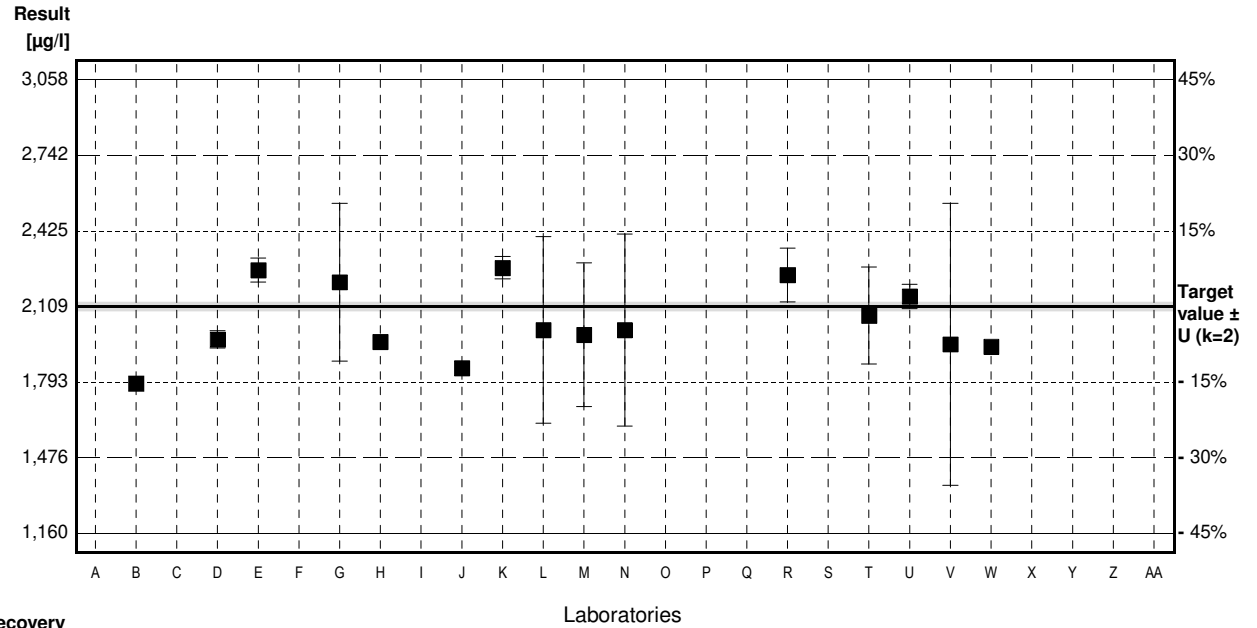


Sample M168B
Parameter Uranium

Target value ± U (k=2) 2,109 µg/l ± 0,018 µg/l
 IFA result ± U (k=2) 2,01 µg/l ± 0,23 µg/l
 Stability test µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			µg/l		
B	1,786		µg/l	85%	-2,78
C			µg/l		
D	1,97	0,036	µg/l	93%	-1,20
E	2,26	0,05	µg/l	107%	1,30
F	1,15	0,05	µg/l	55%	-8,27
G	2,21	0,33	µg/l	105%	0,87
H	1,96		µg/l	93%	-1,28
I			µg/l		
J	1,85		µg/l	88%	-2,23
K	2,27	0,0470	µg/l	108%	1,39
L	2,01	0,39	µg/l	95%	-0,85
M	1,99	0,30	µg/l	94%	-1,03
N	2,01	0,402	µg/l	95%	-0,85
O			µg/l		
P			µg/l		
Q			µg/l		
R	2,24	0,112	µg/l	106%	1,13
S			µg/l		
T	2,07	0,203	µg/l	98%	-0,34
U	2,15	0,0512	µg/l	102%	0,35
V	1,95	0,59	µg/l	92%	-1,37
W	1,94		µg/l	92%	-1,46
X			µg/l		
Y			µg/l		
Z			µg/l		
AA			µg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,989 ± 0,197	2,044 ± 0,116	µg/l
Recov. ± CI(99%)	94,3 ± 9,3	96,9 ± 5,5	%
SD between labs	0,267	0,151	µg/l
RSD between labs	13,4	7,4	%
n for calculation	16	15	



Sample M168A

Parameter Zinc

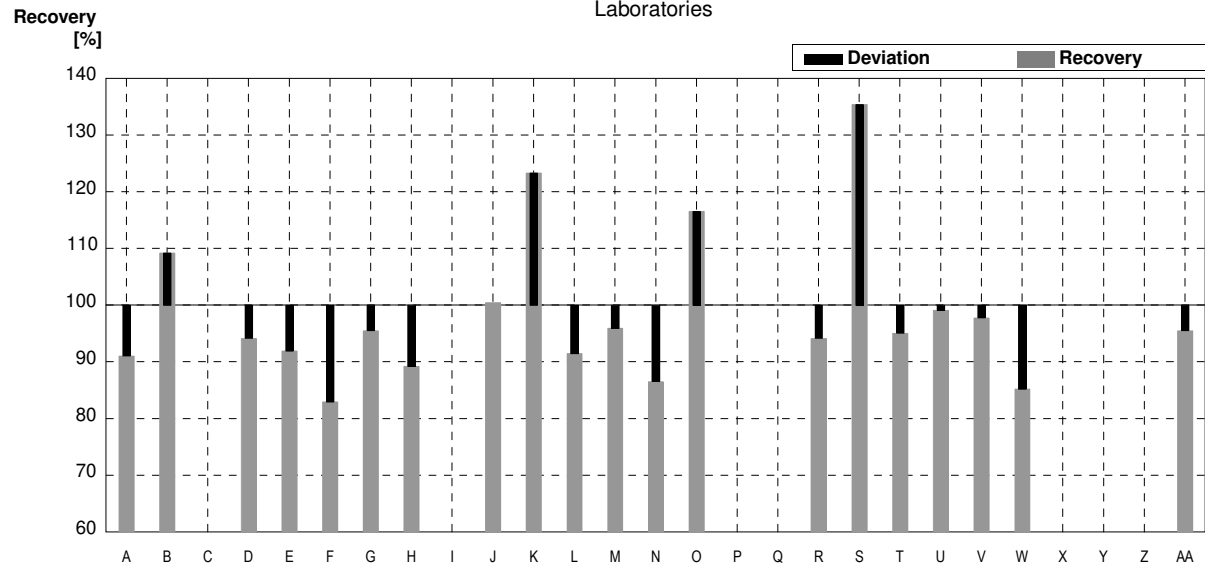
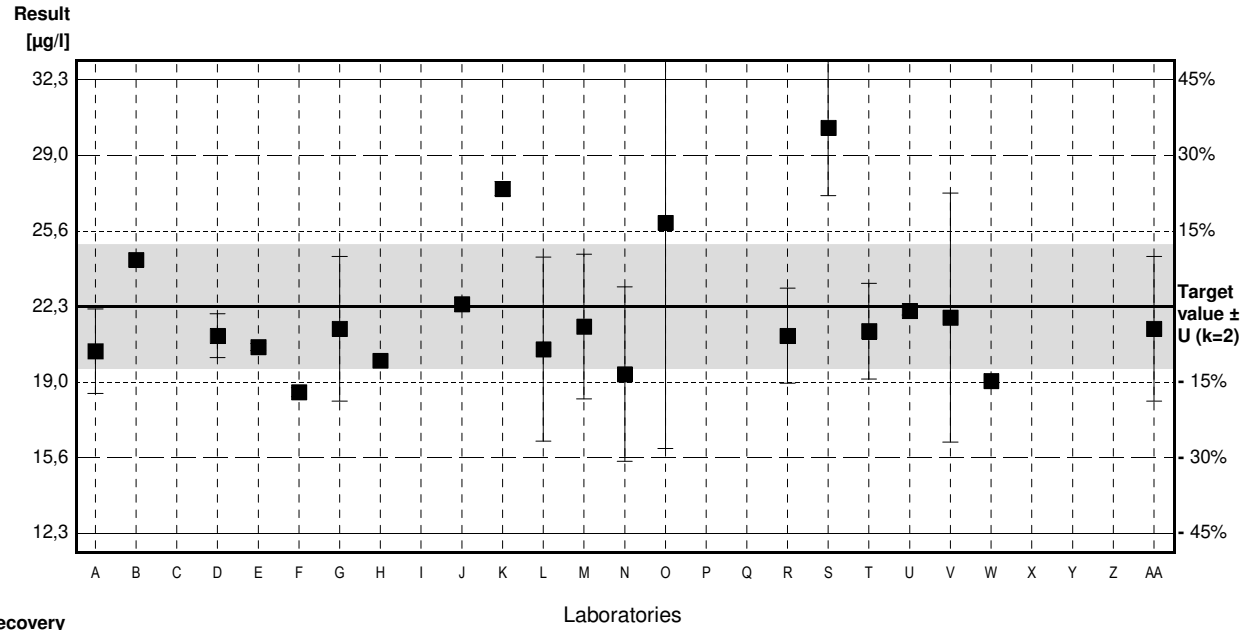
Target value $\pm U$ (k=2) 22,3 $\mu\text{g/l}$ \pm 2,7 $\mu\text{g/l}$

IFA result $\pm U$ (k=2) 21,6 $\mu\text{g/l}$ \pm 2,6 $\mu\text{g/l}$

Stability test $\mu\text{g/l}$

Lab Code	Result	\pm	Unit	Recovery	z-Score
A	20,31	1,87	$\mu\text{g/l}$	91%	-1,27
B	24,36		$\mu\text{g/l}$	109%	1,32
C			$\mu\text{g/l}$		
D	21,0	0,97	$\mu\text{g/l}$	94%	-0,83
E	20,5	0,153	$\mu\text{g/l}$	92%	-1,15
F	18,5	0,2	$\mu\text{g/l}$	83%	-2,43
G	21,3	3,20	$\mu\text{g/l}$	96%	-0,64
H	19,9		$\mu\text{g/l}$	89%	-1,54
I			$\mu\text{g/l}$		
J	22,4		$\mu\text{g/l}$	100%	0,06
K	27,5 *	0,312	$\mu\text{g/l}$	123%	3,33
L	20,4	4,07	$\mu\text{g/l}$	91%	-1,22
M	21,4	3,2	$\mu\text{g/l}$	96%	-0,58
N	19,3	3,86	$\mu\text{g/l}$	87%	-1,92
O	26,0 *	10	$\mu\text{g/l}$	117%	2,37
P			$\mu\text{g/l}$		
Q			$\mu\text{g/l}$		
R	21,0	2,10	$\mu\text{g/l}$	94%	-0,83
S	30,2 *	3,0	$\mu\text{g/l}$	135%	5,06
T	21,2	2,12	$\mu\text{g/l}$	95%	-0,70
U	22,1	0,188	$\mu\text{g/l}$	99%	-0,13
V	21,8	5,5	$\mu\text{g/l}$	98%	-0,32
W	19,0		$\mu\text{g/l}$	85%	-2,11
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		
Z			$\mu\text{g/l}$		
AA	21,3	3,2	$\mu\text{g/l}$	96%	-0,64

	All results	Outliers excl.	Unit
Mean \pm CI(99%)	22,0 \pm 1,9	20,9 \pm 1,0	$\mu\text{g/l}$
Recov. \pm CI(99%)	98,5 \pm 8,4	93,8 \pm 4,4	%
SD between labs	2,9	1,4	$\mu\text{g/l}$
RSD between labs	13,4	6,6	%
n for calculation	20	17	



Sample M168B

Parameter Zinc

Target value $\pm U$ (k=2) 50,0 $\mu\text{g/l}$ \pm 2,7 $\mu\text{g/l}$

IFA result $\pm U$ (k=2) 51 $\mu\text{g/l}$ \pm 6 $\mu\text{g/l}$

Stability test $\mu\text{g/l}$

Lab Code	Result	\pm	Unit	Recovery	z-Score
A	46,48	4,28	$\mu\text{g/l}$	93%	-1,01
B	55,71		$\mu\text{g/l}$	111%	1,63
C			$\mu\text{g/l}$		
D	48,4	1,28	$\mu\text{g/l}$	97%	-0,46
E	52,2	0,27	$\mu\text{g/l}$	104%	0,63
F	46,0	0,2	$\mu\text{g/l}$	92%	-1,14
G	49,0	7,35	$\mu\text{g/l}$	98%	-0,29
H	48,4		$\mu\text{g/l}$	97%	-0,46
I			$\mu\text{g/l}$		
J	51,3		$\mu\text{g/l}$	103%	0,37
K	62,4 *	0,71	$\mu\text{g/l}$	125%	3,54
L	45,7	9,15	$\mu\text{g/l}$	91%	-1,23
M	50,1	7,5	$\mu\text{g/l}$	100%	0,03
N	44,0	8,8	$\mu\text{g/l}$	88%	-1,71
O	53,0	10	$\mu\text{g/l}$	106%	0,86
P			$\mu\text{g/l}$		
Q			$\mu\text{g/l}$		
R	47,0	4,70	$\mu\text{g/l}$	94%	-0,86
S	53	5,3	$\mu\text{g/l}$	106%	0,86
T	48,1	4,81	$\mu\text{g/l}$	96%	-0,54
U	48,5	0,231	$\mu\text{g/l}$	97%	-0,43
V	49,8	12,5	$\mu\text{g/l}$	100%	-0,06
W	43,5		$\mu\text{g/l}$	87%	-1,86
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		
Z			$\mu\text{g/l}$		
AA	51	8	$\mu\text{g/l}$	102%	0,29

	All results	Outliers excl.	Unit
Mean \pm CI(99%)	49,7 \pm 2,8	49,0 \pm 2,1	$\mu\text{g/l}$
Recov. \pm CI(99%)	99,4 \pm 5,5	98,0 \pm 4,2	%
SD between labs	4,3	3,2	$\mu\text{g/l}$
RSD between labs	8,7	6,6	%
n for calculation	20	19	

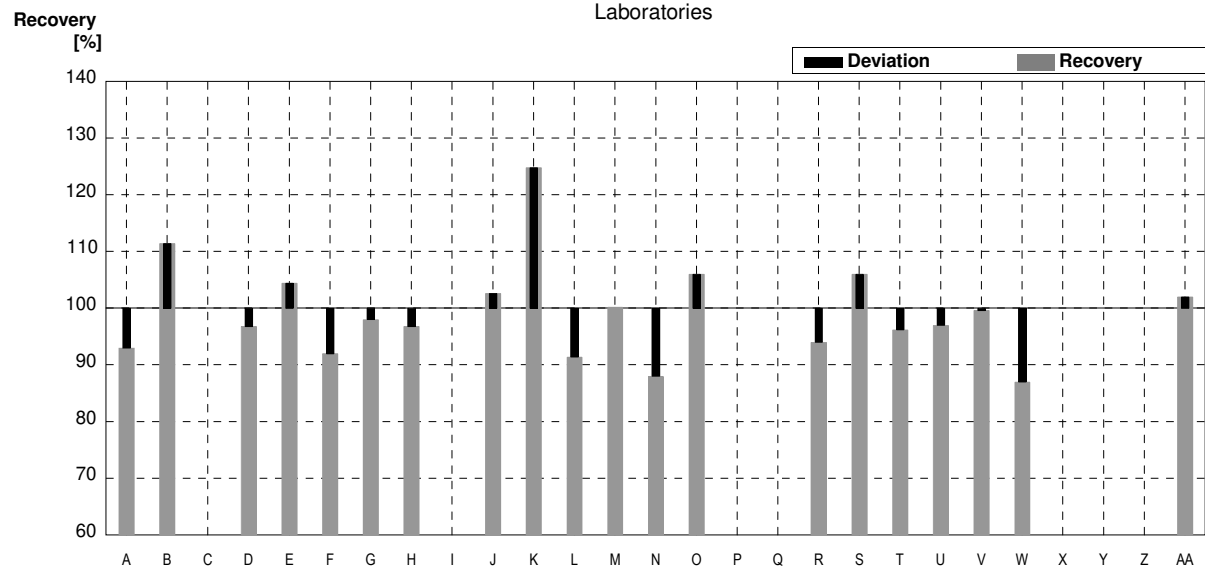
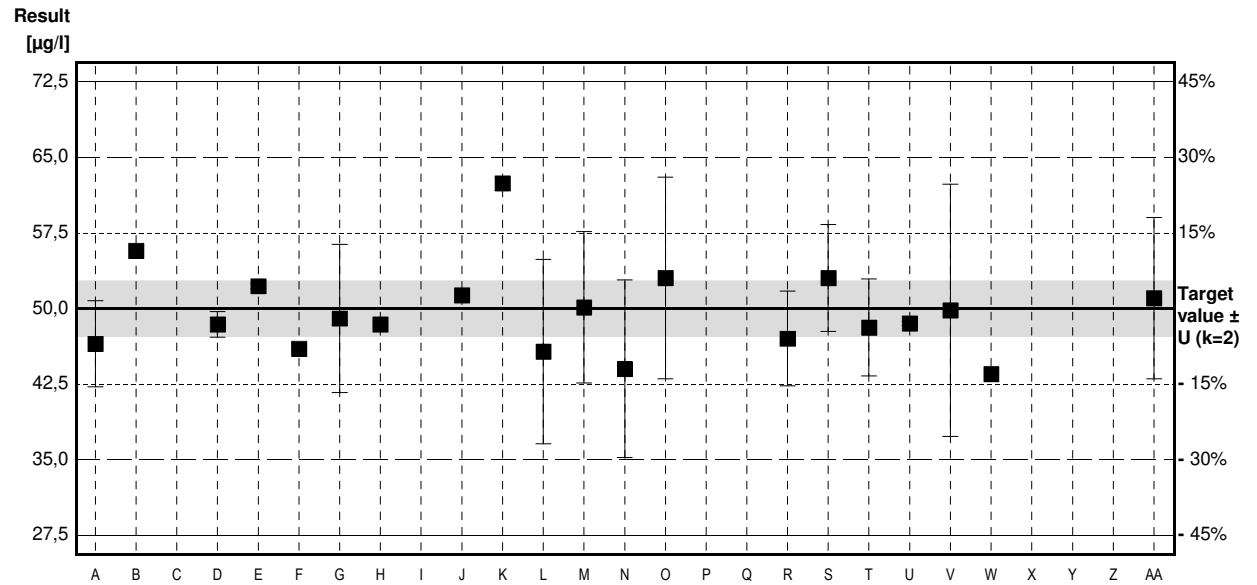


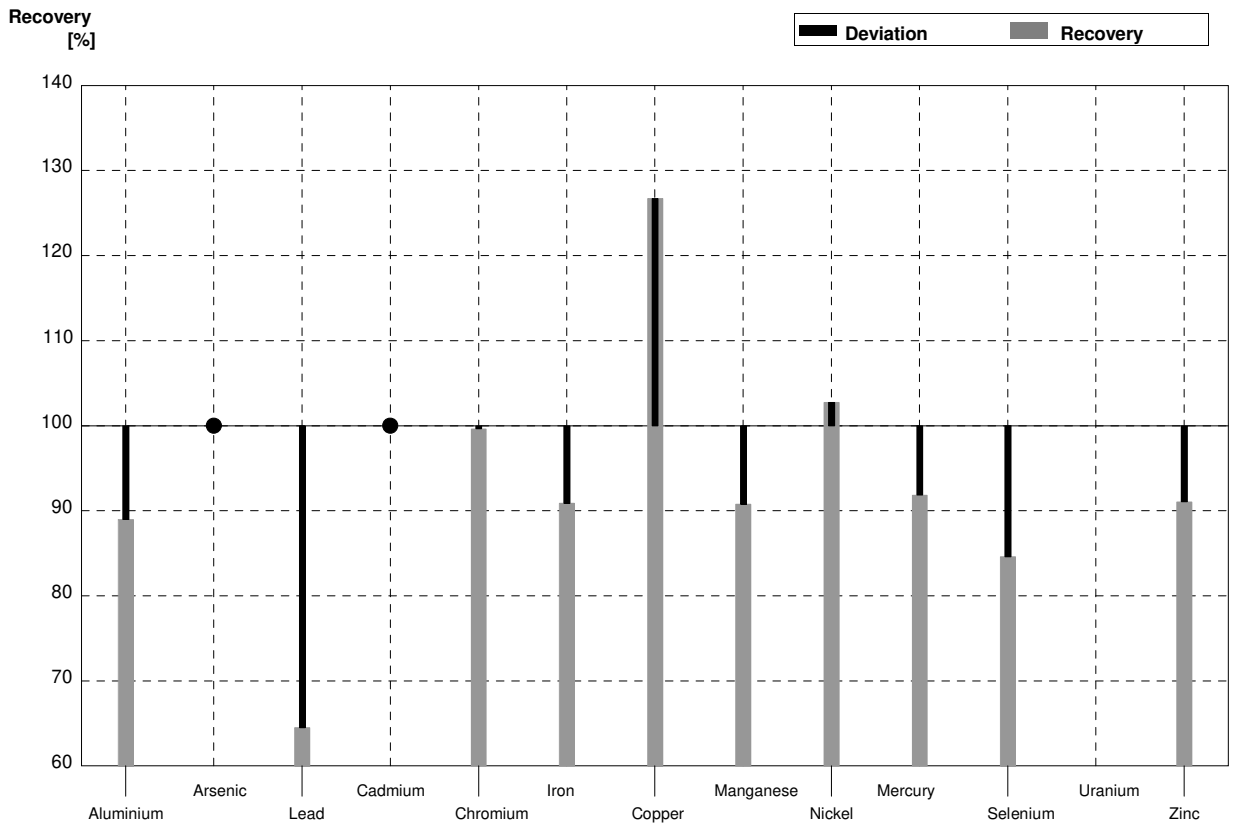
Illustration of Results Laboratory Oriented Part

Round M168
Metals

Sample Dispatch: 4 September 2023

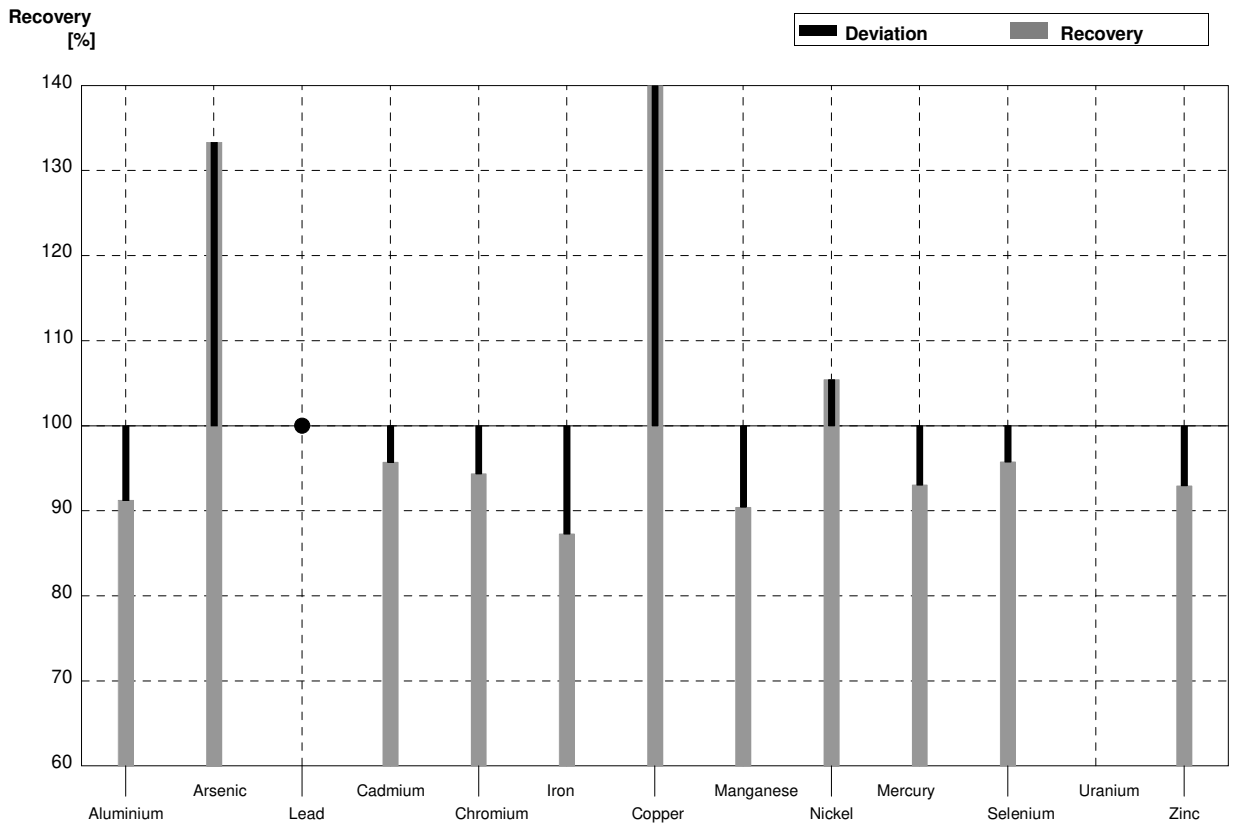
Sample M168A
Laboratory A

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	23,32	2,47	µg/l	89%
Arsenic	1,552	0,014	<5		µg/l	•
Lead	6,85	0,05	4,42	0,37	µg/l	65%
Cadmium	0,1031	0,0019	<1		µg/l	•
Chromium	2,89	0,03	2,88	0,18	µg/l	100%
Iron	71,7	0,3	65,18	8,02	µg/l	91%
Copper	4,60	0,04	5,83	0,33	µg/l	127%
Manganese	27,82	0,15	25,26	1,87	µg/l	91%
Nickel	5,42	0,05	5,57	0,30	µg/l	103%
Mercury	2,655	0,018	2,439	0,24	µg/l	92%
Selenium	3,51	0,03	2,97	0,18	µg/l	85%
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7	20,31	1,87	µg/l	91%



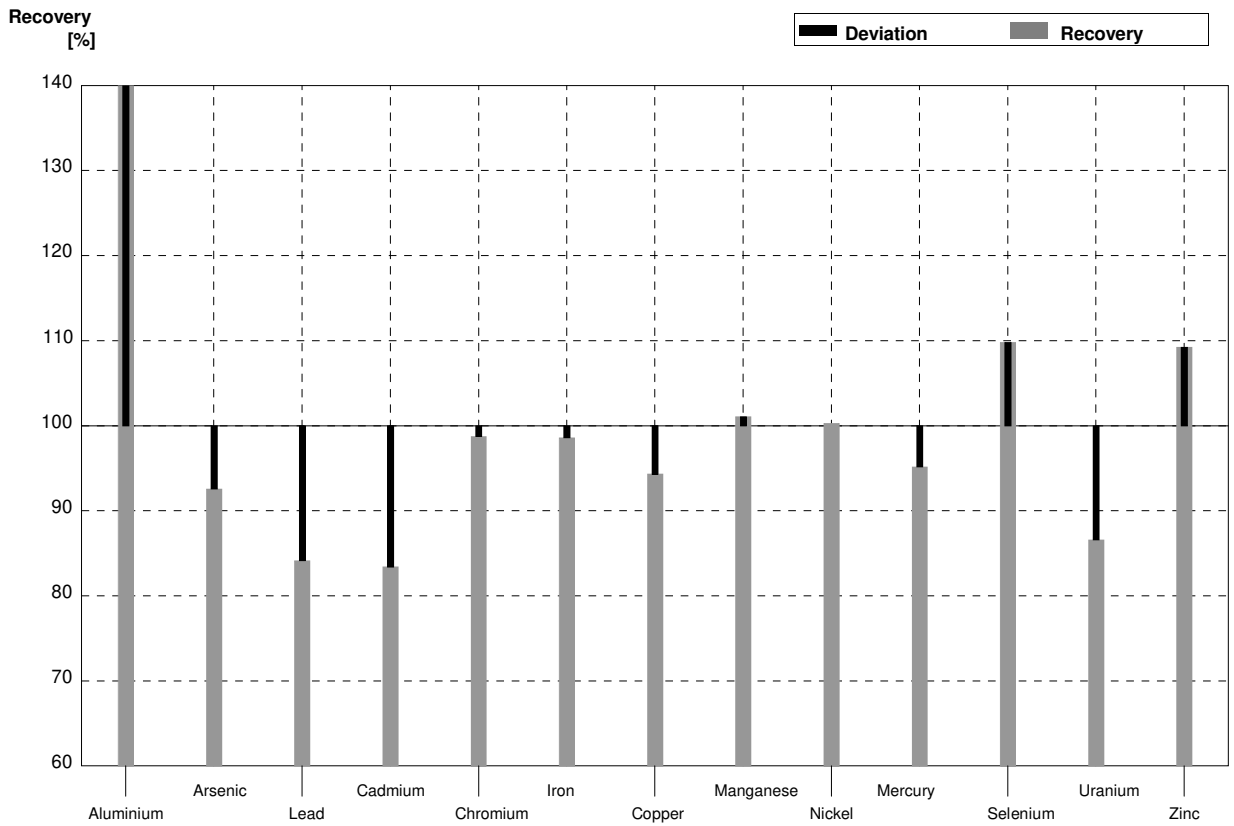
Sample M168B
Laboratory A

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	45,90	4,87	µg/l	91%
Arsenic	5,73	0,04	7,64	0,83	µg/l	133%
Lead	2,91	0,02	<5		µg/l	•
Cadmium	1,567	0,013	1,50	0,07	µg/l	96%
Chromium	9,78	0,08	9,23	0,58	µg/l	94%
Iron	17,54	0,18	15,31	1,88	µg/l	87%
Copper	1,41	0,03	3,23	0,18	µg/l	229%
Manganese	37,05	0,18	33,51	2,48	µg/l	90%
Nickel	5,14	0,04	5,42	0,29	µg/l	105%
Mercury	1,379	0,018	1,283	0,13	µg/l	93%
Selenium	2,83	0,02	2,71	0,16	µg/l	96%
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7	46,48	4,28	µg/l	93%



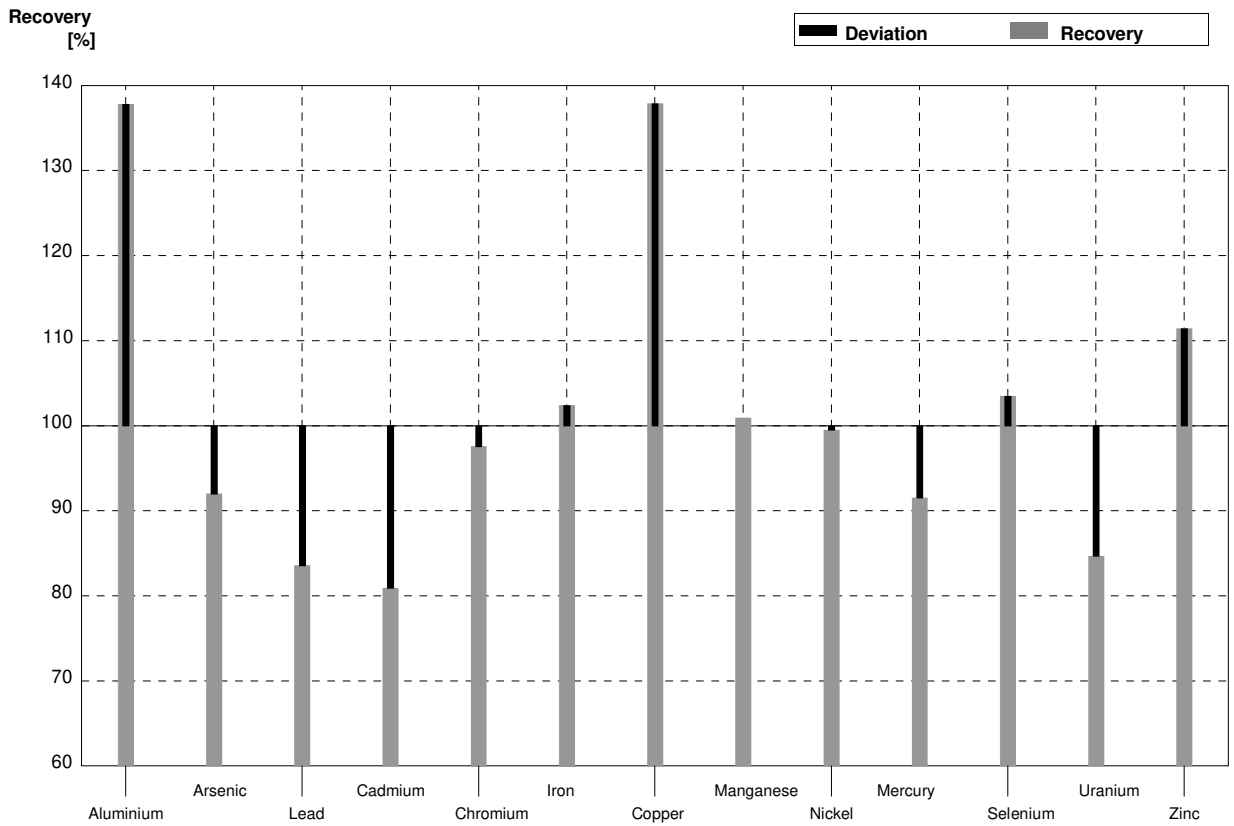
Sample M168A
Laboratory B

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	42,82		µg/l	163%
Arsenic	1,552	0,014	1,437		µg/l	93%
Lead	6,85	0,05	5,764		µg/l	84%
Cadmium	0,1031	0,0019	0,086		µg/l	83%
Chromium	2,89	0,03	2,854		µg/l	99%
Iron	71,7	0,3	70,70		µg/l	99%
Copper	4,60	0,04	4,339		µg/l	94%
Manganese	27,82	0,15	28,12		µg/l	101%
Nickel	5,42	0,05	5,435		µg/l	100%
Mercury	2,655	0,018	2,527		µg/l	95%
Selenium	3,51	0,03	3,854		µg/l	110%
Uranium	0,455	0,006	0,394		µg/l	87%
Zinc	22,3	2,7	24,36		µg/l	109%



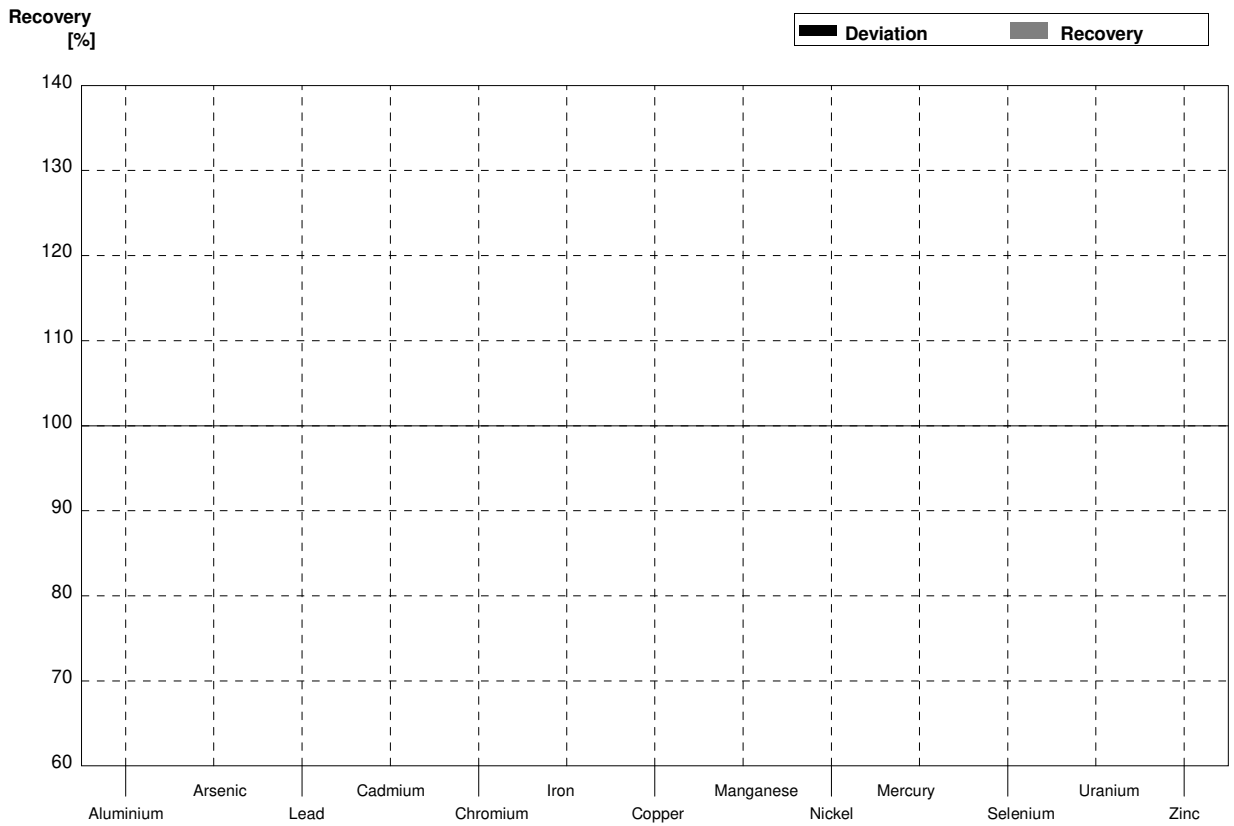
Sample M168B
Laboratory B

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	69,31		µg/l	138%
Arsenic	5,73	0,04	5,271		µg/l	92%
Lead	2,91	0,02	2,432		µg/l	84%
Cadmium	1,567	0,013	1,268		µg/l	81%
Chromium	9,78	0,08	9,542		µg/l	98%
Iron	17,54	0,18	17,96		µg/l	102%
Copper	1,41	0,03	1,944		µg/l	138%
Manganese	37,05	0,18	37,39		µg/l	101%
Nickel	5,14	0,04	5,114		µg/l	99%
Mercury	1,379	0,018	1,262		µg/l	92%
Selenium	2,83	0,02	2,929		µg/l	103%
Uranium	2,109	0,018	1,786		µg/l	85%
Zinc	50,0	2,7	55,71		µg/l	111%



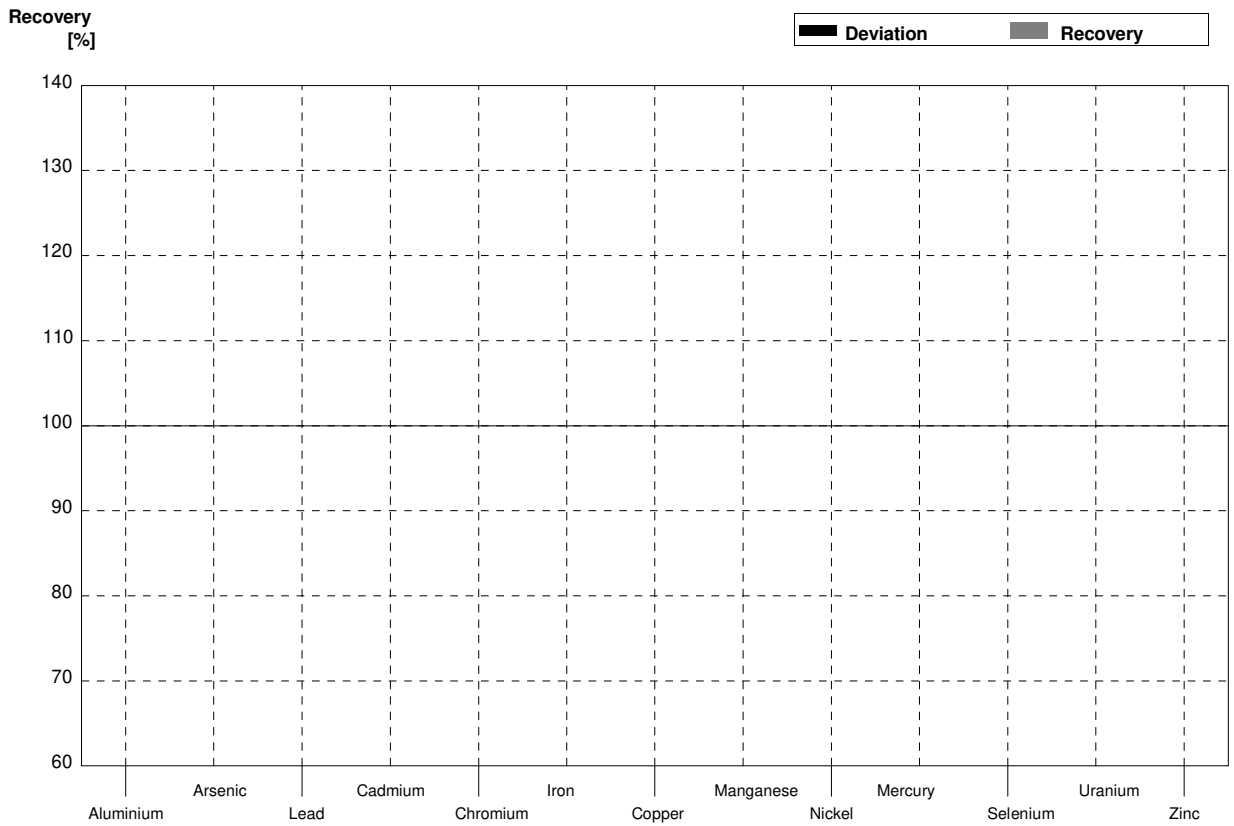
Sample M168A
Laboratory C

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4			µg/l	
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3			µg/l	
Copper	4,60	0,04			µg/l	
Manganese	27,82	0,15			µg/l	
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



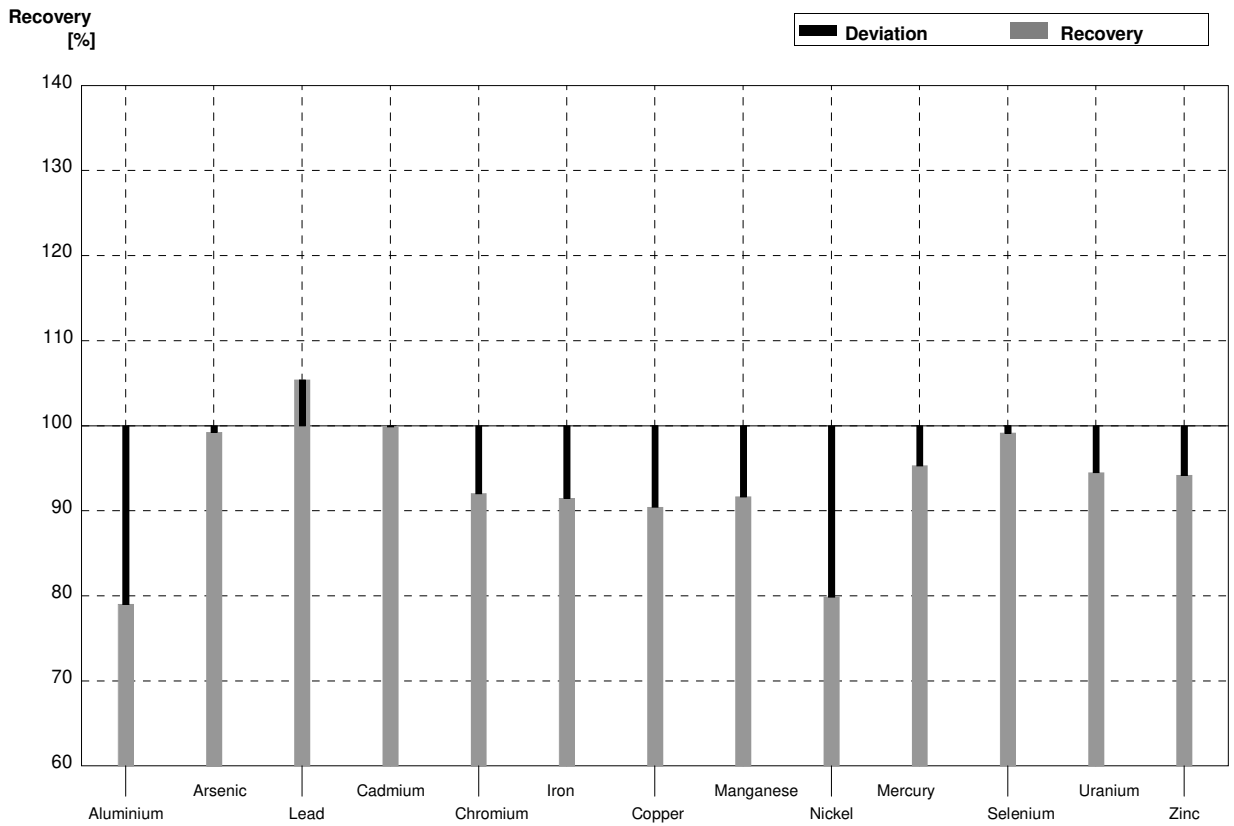
Sample M168B
Laboratory C

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5			µg/l	
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18			µg/l	
Copper	1,41	0,03			µg/l	
Manganese	37,05	0,18			µg/l	
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



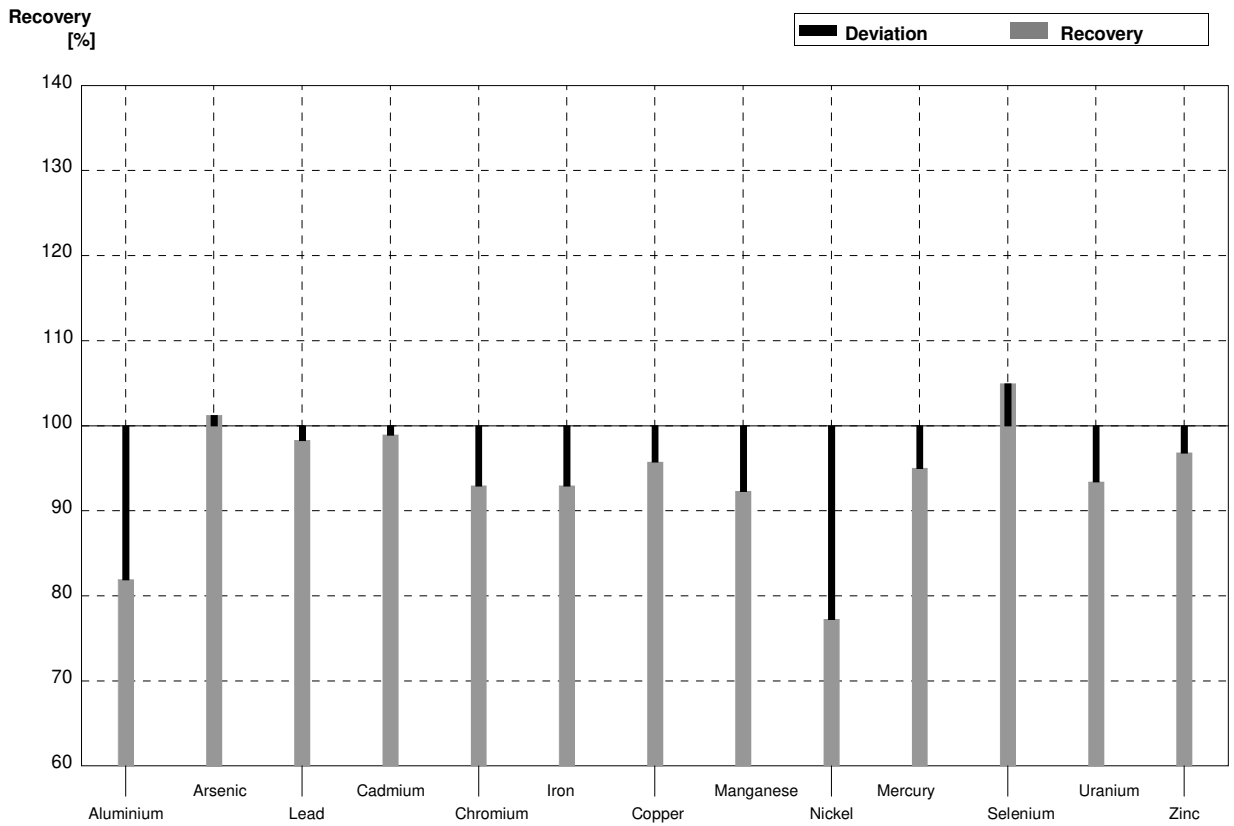
Sample M168A
Laboratory D

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	20,7	1,26	µg/l	79%
Arsenic	1,552	0,014	1,54	0,052	µg/l	99%
Lead	6,85	0,05	7,22	0,363	µg/l	105%
Cadmium	0,1031	0,0019	0,103	0,0033	µg/l	100%
Chromium	2,89	0,03	2,66	0,076	µg/l	92%
Iron	71,7	0,3	65,6	1,62	µg/l	91%
Copper	4,60	0,04	4,16	0,073	µg/l	90%
Manganese	27,82	0,15	25,5	0,65	µg/l	92%
Nickel	5,42	0,05	4,33	0,427	µg/l	80%
Mercury	2,655	0,018	2,53	0,023	µg/l	95%
Selenium	3,51	0,03	3,48	0,088	µg/l	99%
Uranium	0,455	0,006	0,430	0,0087	µg/l	95%
Zinc	22,3	2,7	21,0	0,97	µg/l	94%



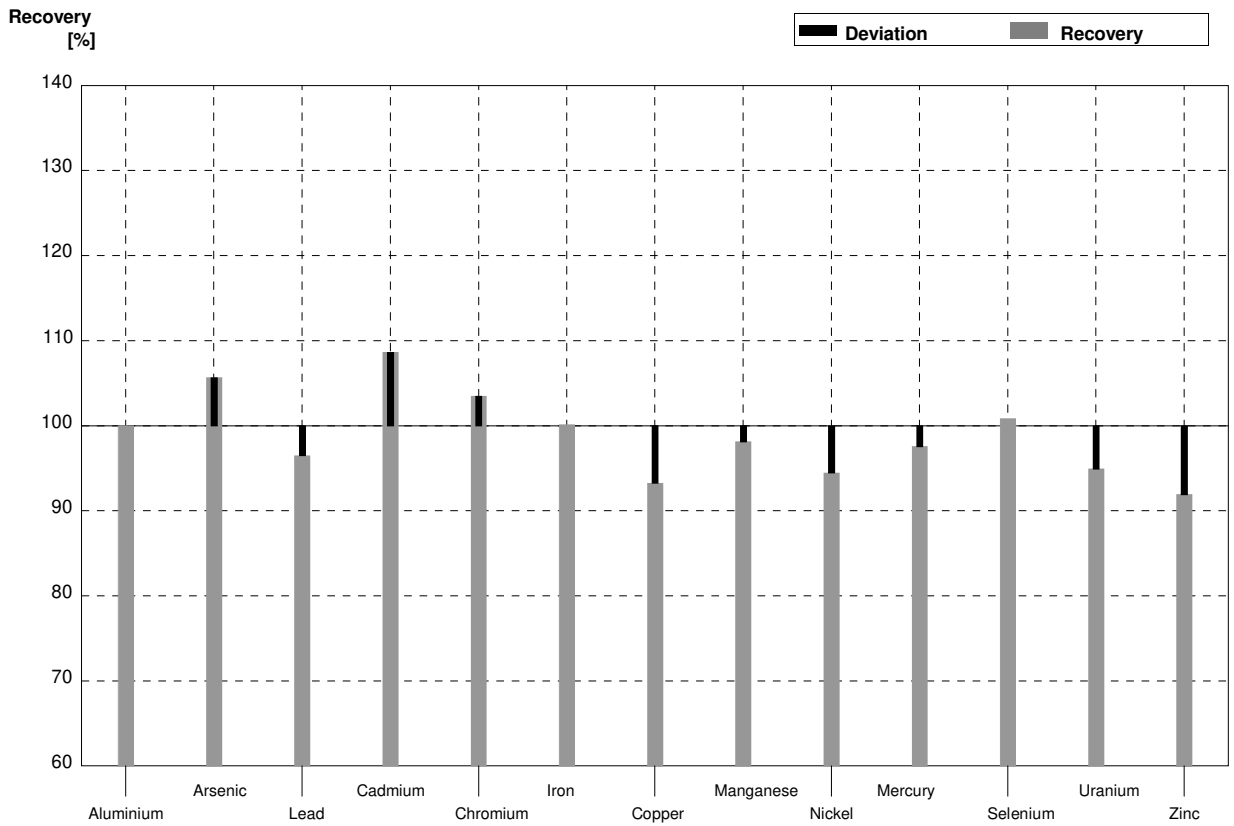
Sample M168B
Laboratory D

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	41,2	2,78	µg/l	82%
Arsenic	5,73	0,04	5,80	0,102	µg/l	101%
Lead	2,91	0,02	2,86	0,067	µg/l	98%
Cadmium	1,567	0,013	1,55	0,024	µg/l	99%
Chromium	9,78	0,08	9,09	0,204	µg/l	93%
Iron	17,54	0,18	16,3	0,43	µg/l	93%
Copper	1,41	0,03	1,35	0,099	µg/l	96%
Manganese	37,05	0,18	34,2	0,97	µg/l	92%
Nickel	5,14	0,04	3,97	0,451	µg/l	77%
Mercury	1,379	0,018	1,31	0,021	µg/l	95%
Selenium	2,83	0,02	2,97	0,088	µg/l	105%
Uranium	2,109	0,018	1,97	0,036	µg/l	93%
Zinc	50,0	2,7	48,4	1,28	µg/l	97%



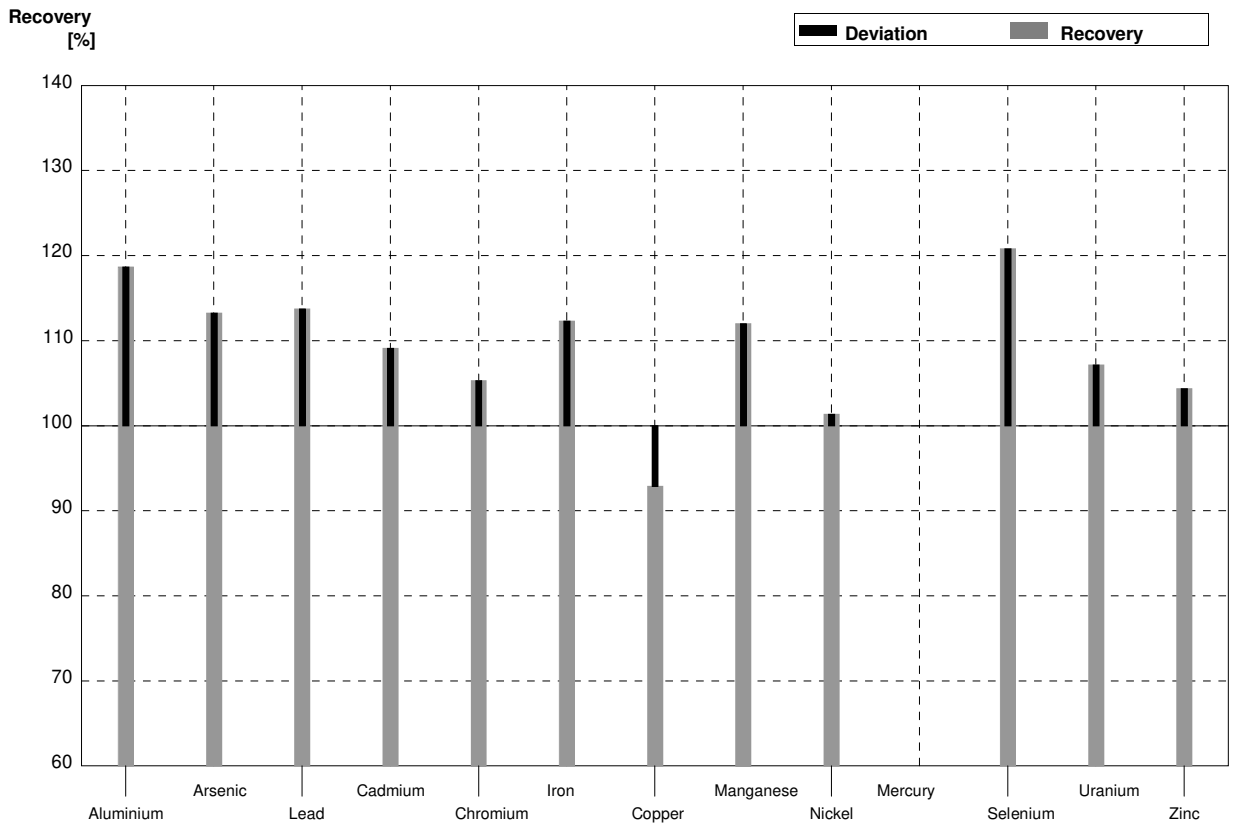
Sample M168A
Laboratory E

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	26,2	0,379	µg/l	100%
Arsenic	1,552	0,014	1,64	0,021	µg/l	106%
Lead	6,85	0,05	6,61	0,10	µg/l	96%
Cadmium	0,1031	0,0019	0,112	0,002	µg/l	109%
Chromium	2,89	0,03	2,99	0,047	µg/l	103%
Iron	71,7	0,3	71,8	0,55	µg/l	100%
Copper	4,60	0,04	4,29	0,036	µg/l	93%
Manganese	27,82	0,15	27,3	0,32	µg/l	98%
Nickel	5,42	0,05	5,12	0,08	µg/l	94%
Mercury	2,655	0,018	2,59	0,069	µg/l	98%
Selenium	3,51	0,03	3,54	0,010	µg/l	101%
Uranium	0,455	0,006	0,432	0,006	µg/l	95%
Zinc	22,3	2,7	20,5	0,153	µg/l	92%



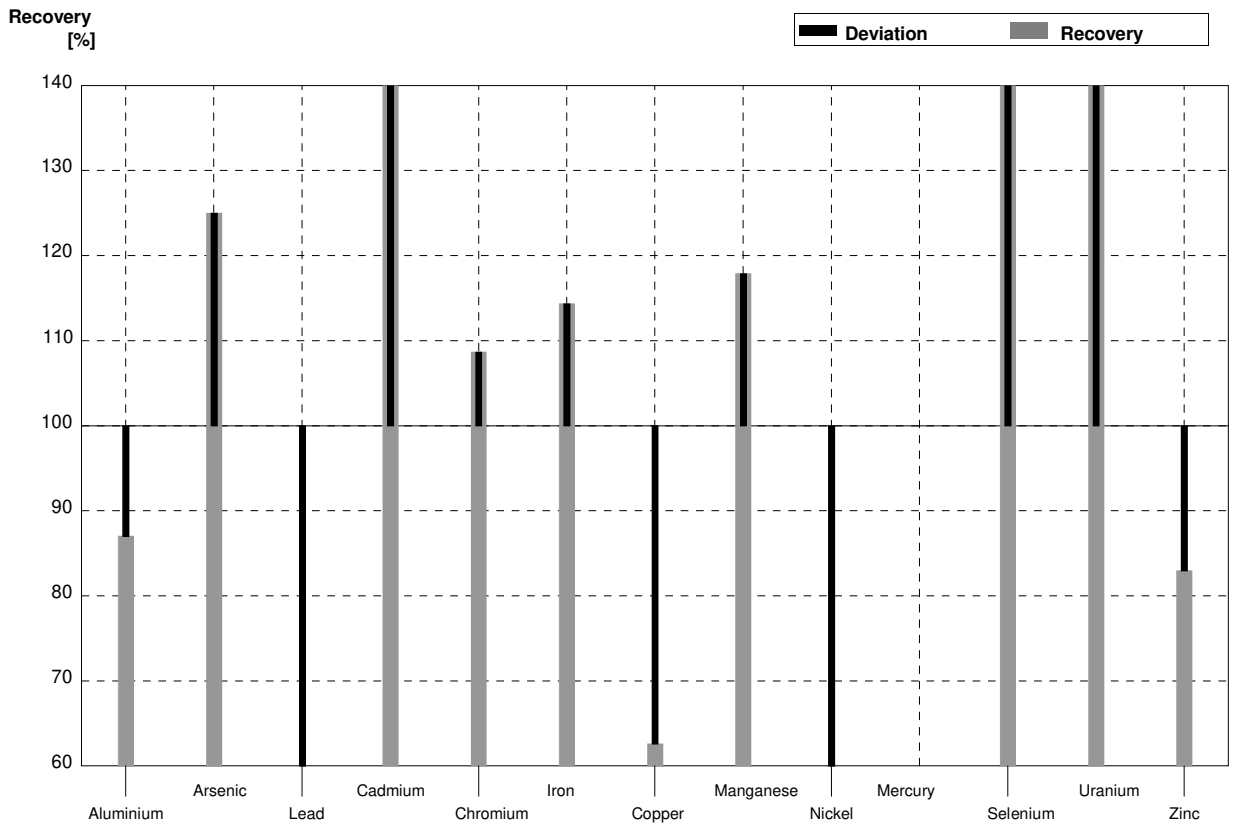
Sample M168B
Laboratory E

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	59,7	1,2	µg/l	119%
Arsenic	5,73	0,04	6,49	0,09	µg/l	113%
Lead	2,91	0,02	3,31	0,07	µg/l	114%
Cadmium	1,567	0,013	1,71	0,031	µg/l	109%
Chromium	9,78	0,08	10,3	0,022	µg/l	105%
Iron	17,54	0,18	19,7	0,25	µg/l	112%
Copper	1,41	0,03	1,31	0,006	µg/l	93%
Manganese	37,05	0,18	41,5	0,61	µg/l	112%
Nickel	5,14	0,04	5,21	0,117	µg/l	101%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02	3,42	0,095	µg/l	121%
Uranium	2,109	0,018	2,26	0,05	µg/l	107%
Zinc	50,0	2,7	52,2	0,27	µg/l	104%



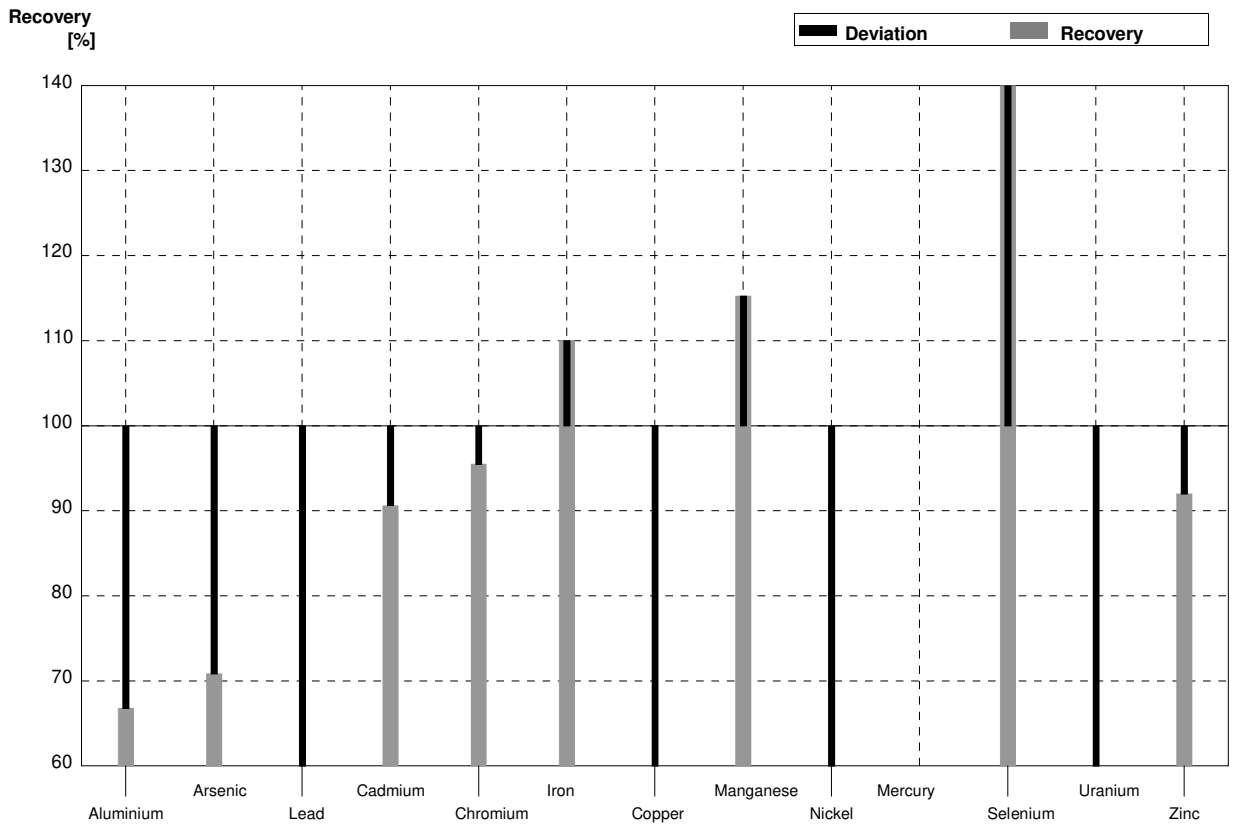
Sample M168A
Laboratory F

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	22,8	0,2	µg/l	87%
Arsenic	1,552	0,014	1,94	0,05	µg/l	125%
Lead	6,85	0,05	0,380	0,05	µg/l	6%
Cadmium	0,1031	0,0019	1,34	0,05	µg/l	1300%
Chromium	2,89	0,03	3,14	0,05	µg/l	109%
Iron	71,7	0,3	82	0,2	µg/l	114%
Copper	4,60	0,04	2,88	0,05	µg/l	63%
Manganese	27,82	0,15	32,8	0,2	µg/l	118%
Nickel	5,42	0,05	0,480	0,05	µg/l	9%
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03	60	0,2	µg/l	1709%
Uranium	0,455	0,006	334	2	µg/l	73407%
Zinc	22,3	2,7	18,5	0,2	µg/l	83%



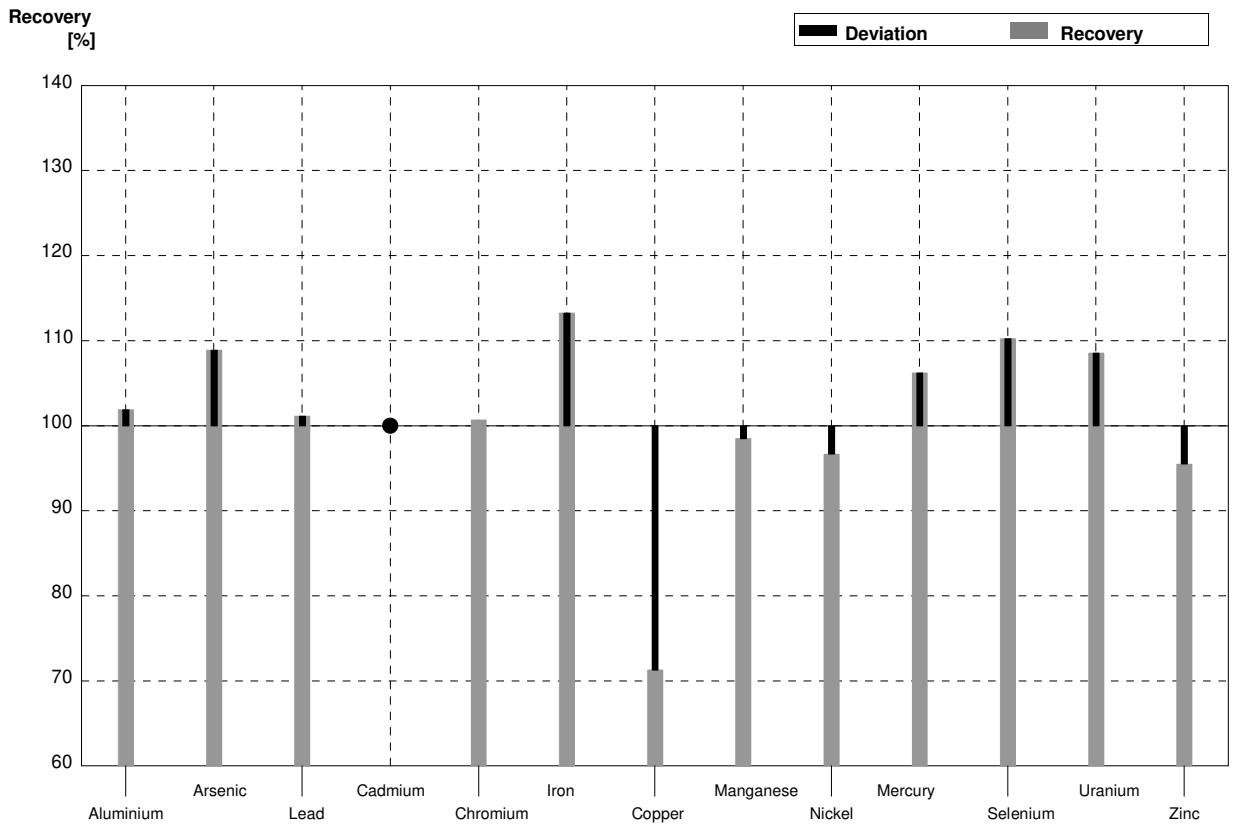
Sample M168B
Laboratory F

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	33,6	0,2	µg/l	67%
Arsenic	5,73	0,04	4,06	0,05	µg/l	71%
Lead	2,91	0,02	0,390	0,05	µg/l	13%
Cadmium	1,567	0,013	1,42	0,05	µg/l	91%
Chromium	9,78	0,08	9,34	0,05	µg/l	96%
Iron	17,54	0,18	19,3	0,2	µg/l	110%
Copper	1,41	0,03	0,150	0,05	µg/l	11%
Manganese	37,05	0,18	42,7	0,2	µg/l	115%
Nickel	5,14	0,04	0,460	0,05	µg/l	9%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02	59,6	0,2	µg/l	2106%
Uranium	2,109	0,018	1,15	0,05	µg/l	55%
Zinc	50,0	2,7	46,0	0,2	µg/l	92%



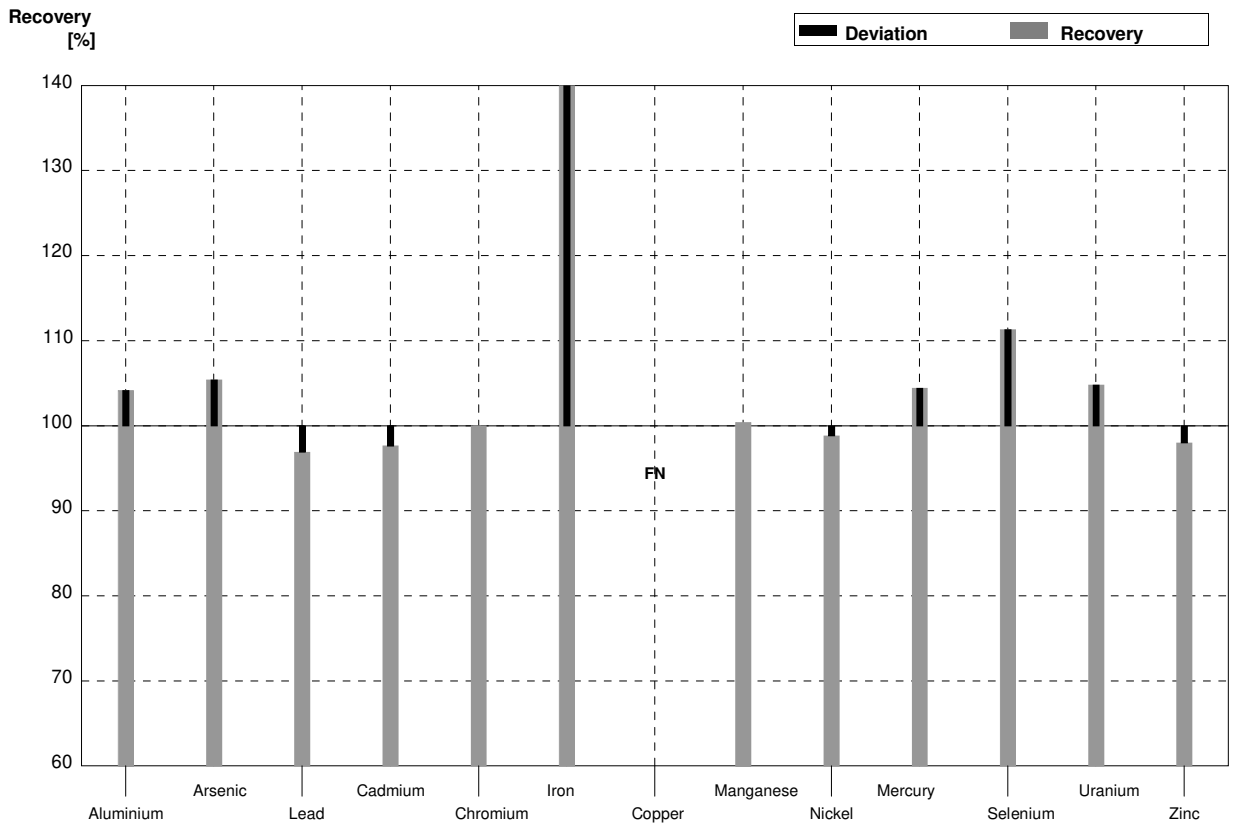
Sample M168A
Laboratory G

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	26,7	4,01	µg/l	102%
Arsenic	1,552	0,014	1,69	0,25	µg/l	109%
Lead	6,85	0,05	6,93	1,04	µg/l	101%
Cadmium	0,1031	0,0019	<0,2		µg/l	•
Chromium	2,89	0,03	2,91	0,44	µg/l	101%
Iron	71,7	0,3	81,2	12	µg/l	113%
Copper	4,60	0,04	3,28	0,49	µg/l	71%
Manganese	27,82	0,15	27,4	4,11	µg/l	98%
Nickel	5,42	0,05	5,24	0,79	µg/l	97%
Mercury	2,655	0,018	2,82	0,42	µg/l	106%
Selenium	3,51	0,03	3,87	0,58	µg/l	110%
Uranium	0,455	0,006	0,494	0,074	µg/l	109%
Zinc	22,3	2,7	21,3	3,20	µg/l	96%



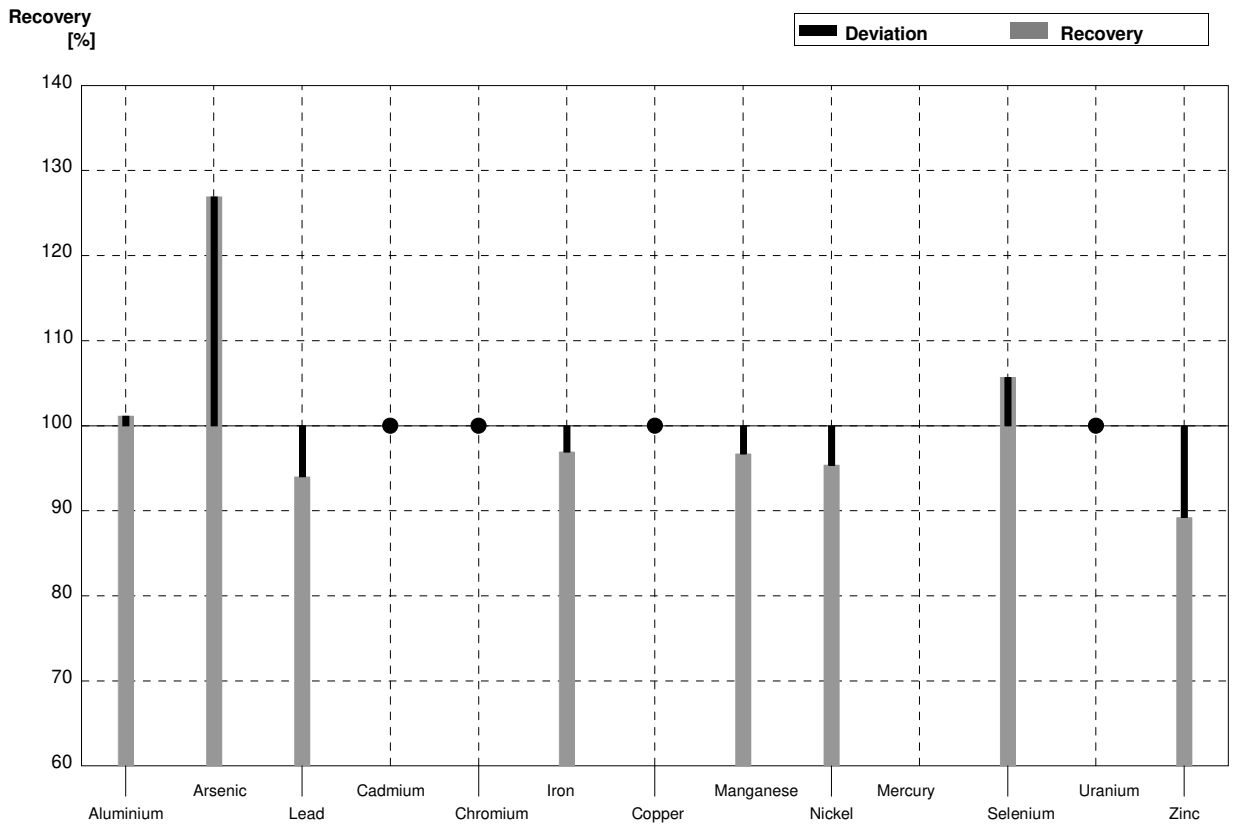
Sample M168B
Laboratory G

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	52,4	7,85	µg/l	104%
Arsenic	5,73	0,04	6,04	0,91	µg/l	105%
Lead	2,91	0,02	2,82	0,42	µg/l	97%
Cadmium	1,567	0,013	1,53	0,23	µg/l	98%
Chromium	9,78	0,08	9,78	1,47	µg/l	100%
Iron	17,54	0,18	26,9	4,04	µg/l	153%
Copper	1,41	0,03	<1		µg/l	FN
Manganese	37,05	0,18	37,2	5,58	µg/l	100%
Nickel	5,14	0,04	5,08	0,76	µg/l	99%
Mercury	1,379	0,018	1,44	0,22	µg/l	104%
Selenium	2,83	0,02	3,15	0,47	µg/l	111%
Uranium	2,109	0,018	2,21	0,33	µg/l	105%
Zinc	50,0	2,7	49,0	7,35	µg/l	98%



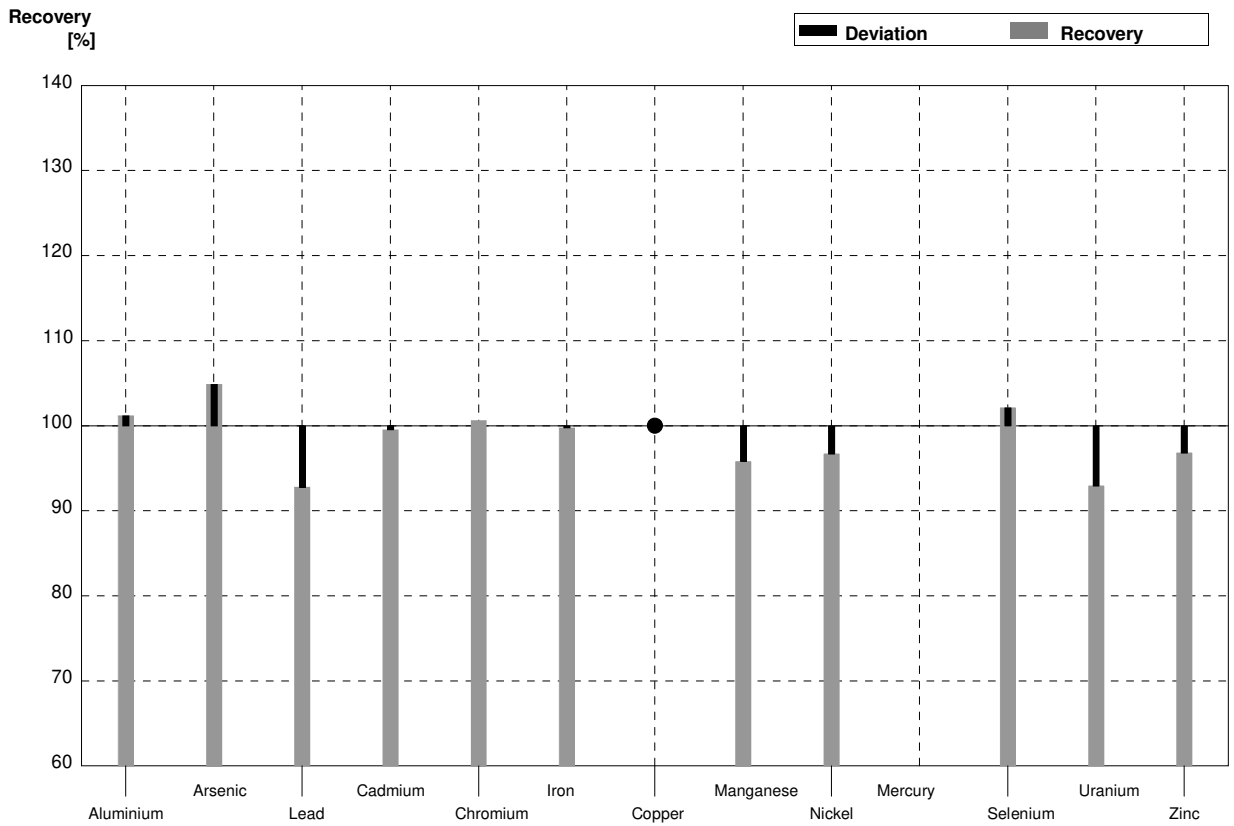
Sample M168A
Laboratory H

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	26,5		µg/l	101%
Arsenic	1,552	0,014	1,97		µg/l	127%
Lead	6,85	0,05	6,44		µg/l	94%
Cadmium	0,1031	0,0019	<0,4		µg/l	•
Chromium	2,89	0,03	<5		µg/l	•
Iron	71,7	0,3	69,5		µg/l	97%
Copper	4,60	0,04	<5		µg/l	•
Manganese	27,82	0,15	26,9		µg/l	97%
Nickel	5,42	0,05	5,17		µg/l	95%
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03	3,71		µg/l	106%
Uranium	0,455	0,006	<2		µg/l	•
Zinc	22,3	2,7	19,9		µg/l	89%



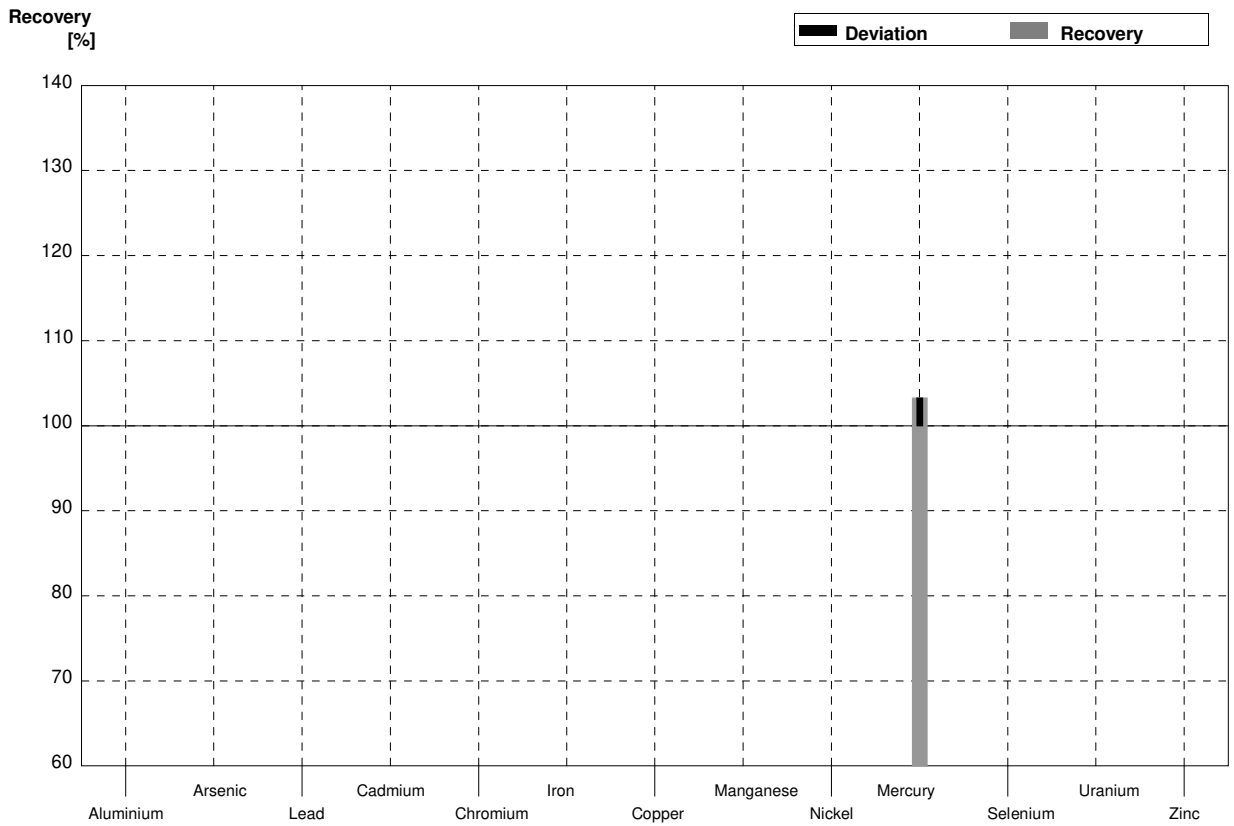
Sample M168B
Laboratory H

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	50,9		µg/l	101%
Arsenic	5,73	0,04	6,01		µg/l	105%
Lead	2,91	0,02	2,70		µg/l	93%
Cadmium	1,567	0,013	1,56		µg/l	100%
Chromium	9,78	0,08	9,84		µg/l	101%
Iron	17,54	0,18	17,5		µg/l	100%
Copper	1,41	0,03	<5		µg/l	•
Manganese	37,05	0,18	35,5		µg/l	96%
Nickel	5,14	0,04	4,97		µg/l	97%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02	2,89		µg/l	102%
Uranium	2,109	0,018	1,96		µg/l	93%
Zinc	50,0	2,7	48,4		µg/l	97%



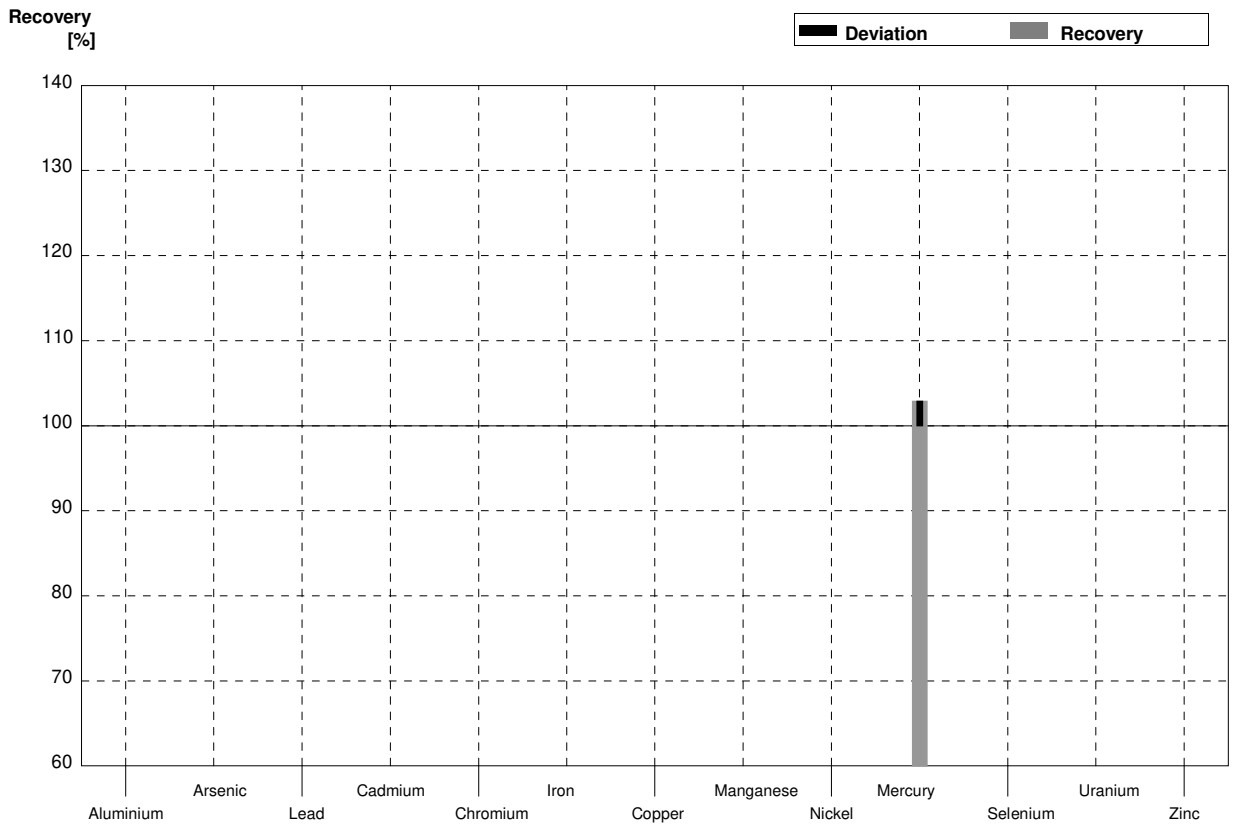
Sample M168A
Laboratory I

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4			µg/l	
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3			µg/l	
Copper	4,60	0,04			µg/l	
Manganese	27,82	0,15			µg/l	
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018	2,743	0,48	µg/l	103%
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



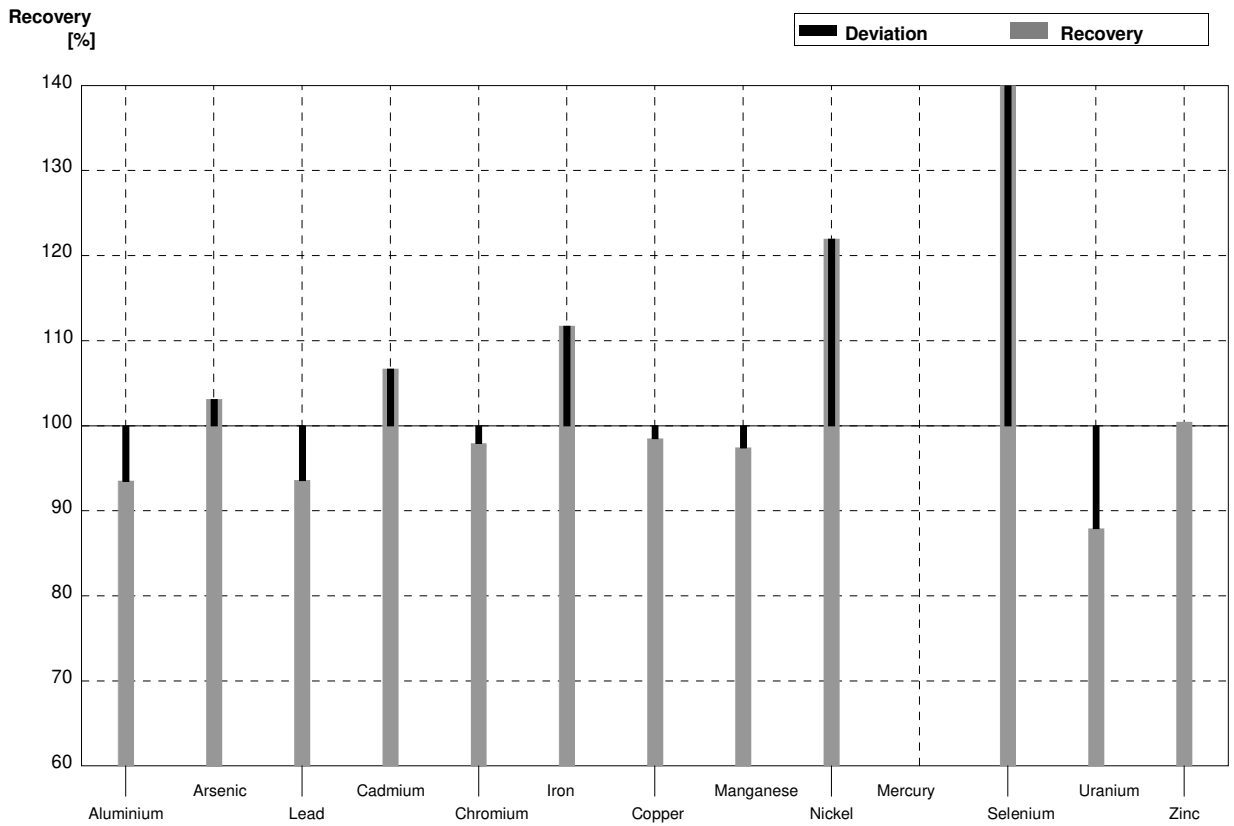
Sample M168B
Laboratory I

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5			µg/l	
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18			µg/l	
Copper	1,41	0,03			µg/l	
Manganese	37,05	0,18			µg/l	
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018	1,419	0,25	µg/l	103%
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



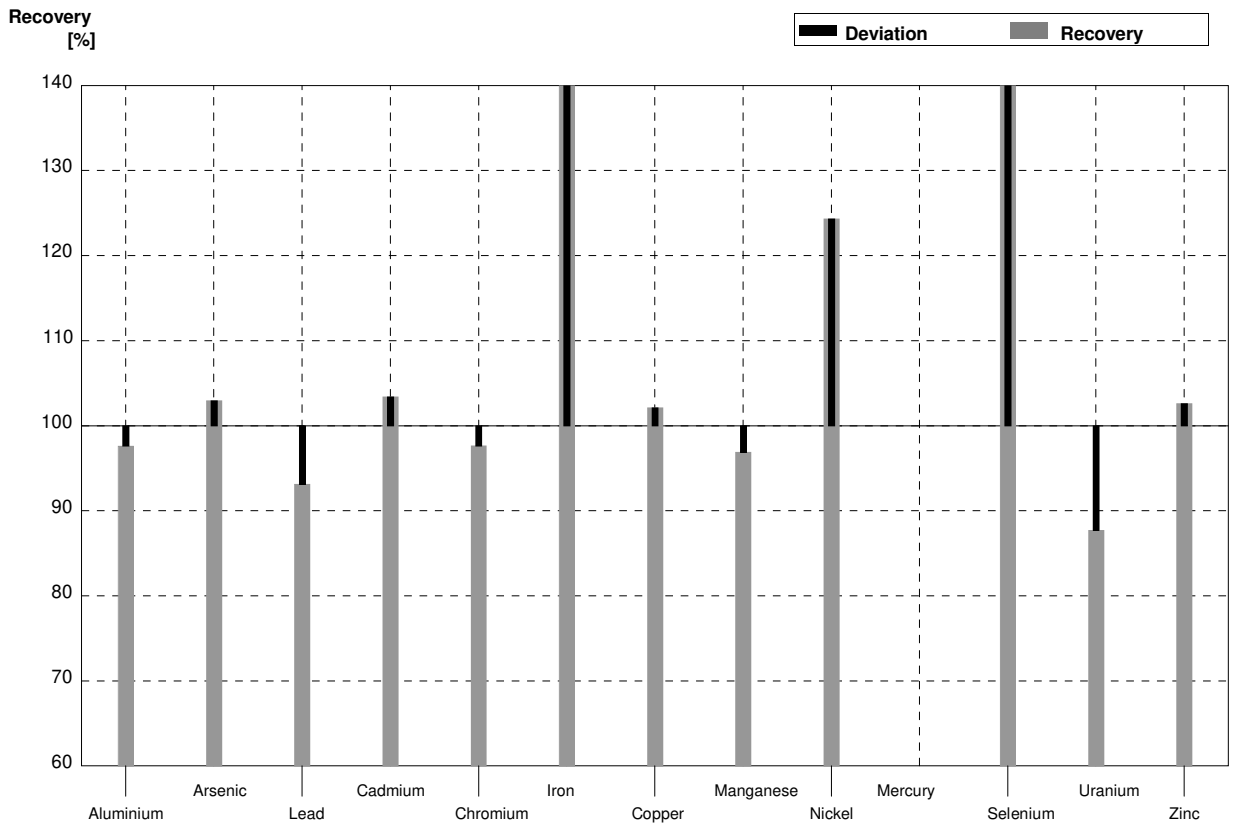
Sample M168A
Laboratory J

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	24,5		µg/l	94%
Arsenic	1,552	0,014	1,60		µg/l	103%
Lead	6,85	0,05	6,41		µg/l	94%
Cadmium	0,1031	0,0019	0,110		µg/l	107%
Chromium	2,89	0,03	2,83		µg/l	98%
Iron	71,7	0,3	80,1		µg/l	112%
Copper	4,60	0,04	4,53		µg/l	98%
Manganese	27,82	0,15	27,1		µg/l	97%
Nickel	5,42	0,05	6,61		µg/l	122%
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03	5,27		µg/l	150%
Uranium	0,455	0,006	0,400		µg/l	88%
Zinc	22,3	2,7	22,4		µg/l	100%



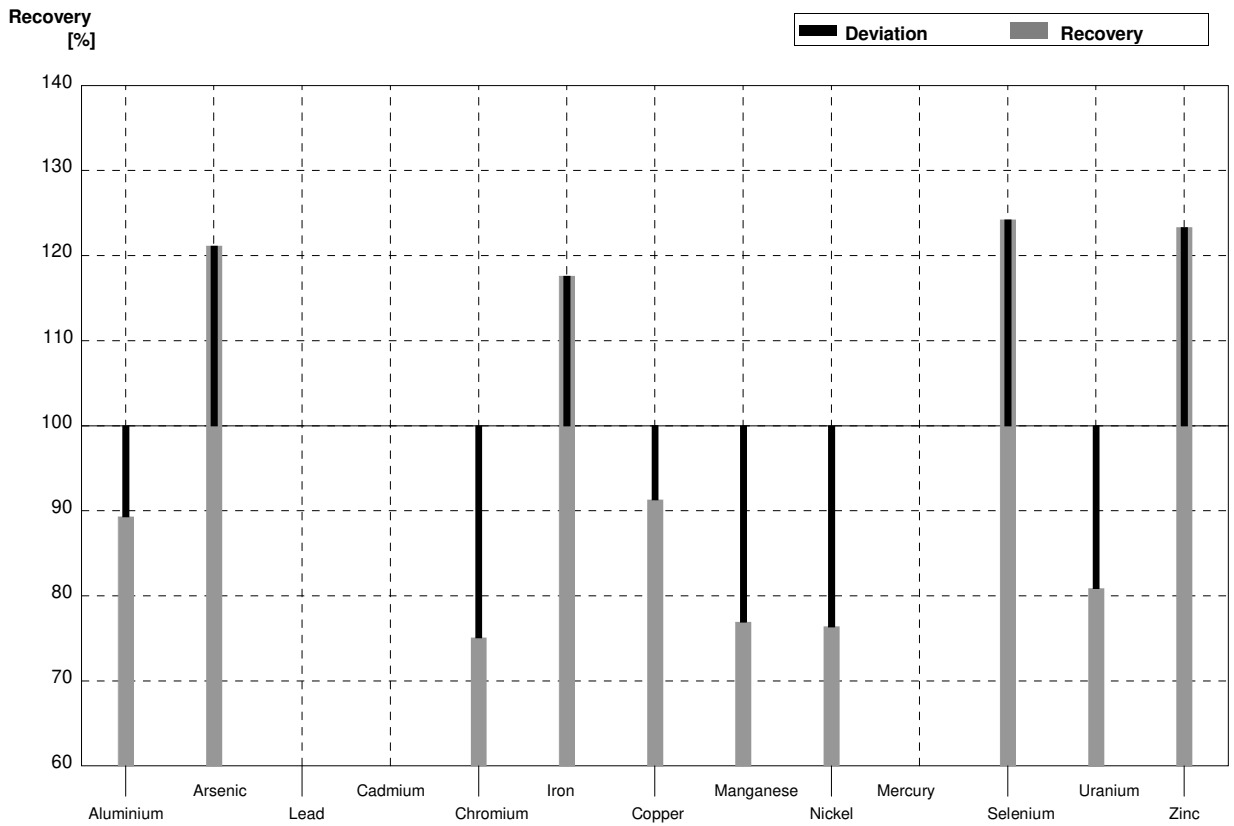
Sample M168B
Laboratory J

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	49,1		µg/l	98%
Arsenic	5,73	0,04	5,90		µg/l	103%
Lead	2,91	0,02	2,71		µg/l	93%
Cadmium	1,567	0,013	1,62		µg/l	103%
Chromium	9,78	0,08	9,55		µg/l	98%
Iron	17,54	0,18	29,7		µg/l	169%
Copper	1,41	0,03	1,44		µg/l	102%
Manganese	37,05	0,18	35,9		µg/l	97%
Nickel	5,14	0,04	6,39		µg/l	124%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02	4,54		µg/l	160%
Uranium	2,109	0,018	1,85		µg/l	88%
Zinc	50,0	2,7	51,3		µg/l	103%



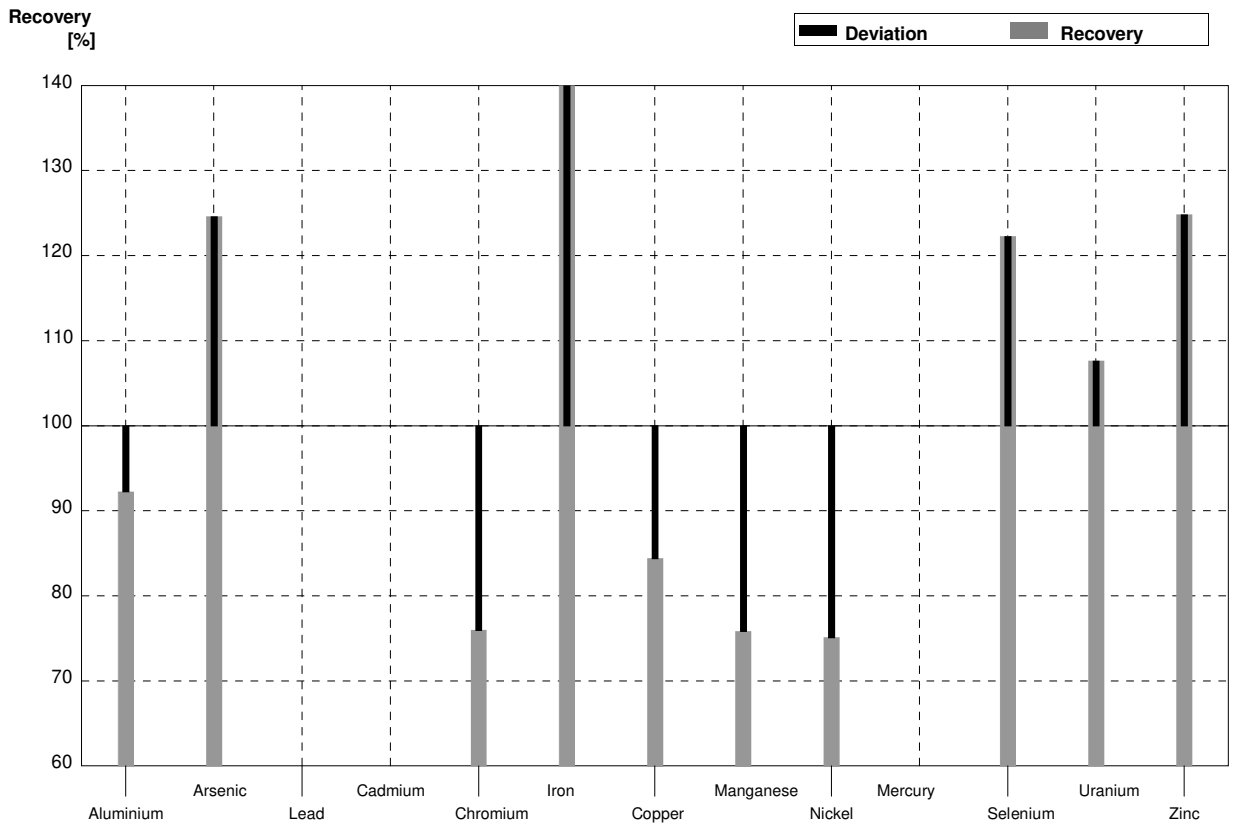
Sample M168A
Laboratory K

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	23,4	0,53	µg/l	89%
Arsenic	1,552	0,014	1,88	0,0230	µg/l	121%
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03	2,17	0,211	µg/l	75%
Iron	71,7	0,3	84,3	1,26	µg/l	118%
Copper	4,60	0,04	4,20	0,063	µg/l	91%
Manganese	27,82	0,15	21,4	0,412	µg/l	77%
Nickel	5,42	0,05	4,14	0,078	µg/l	76%
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03	4,36	0,84	µg/l	124%
Uranium	0,455	0,006	0,368	6,43	µg/l	81%
Zinc	22,3	2,7	27,5	0,312	µg/l	123%



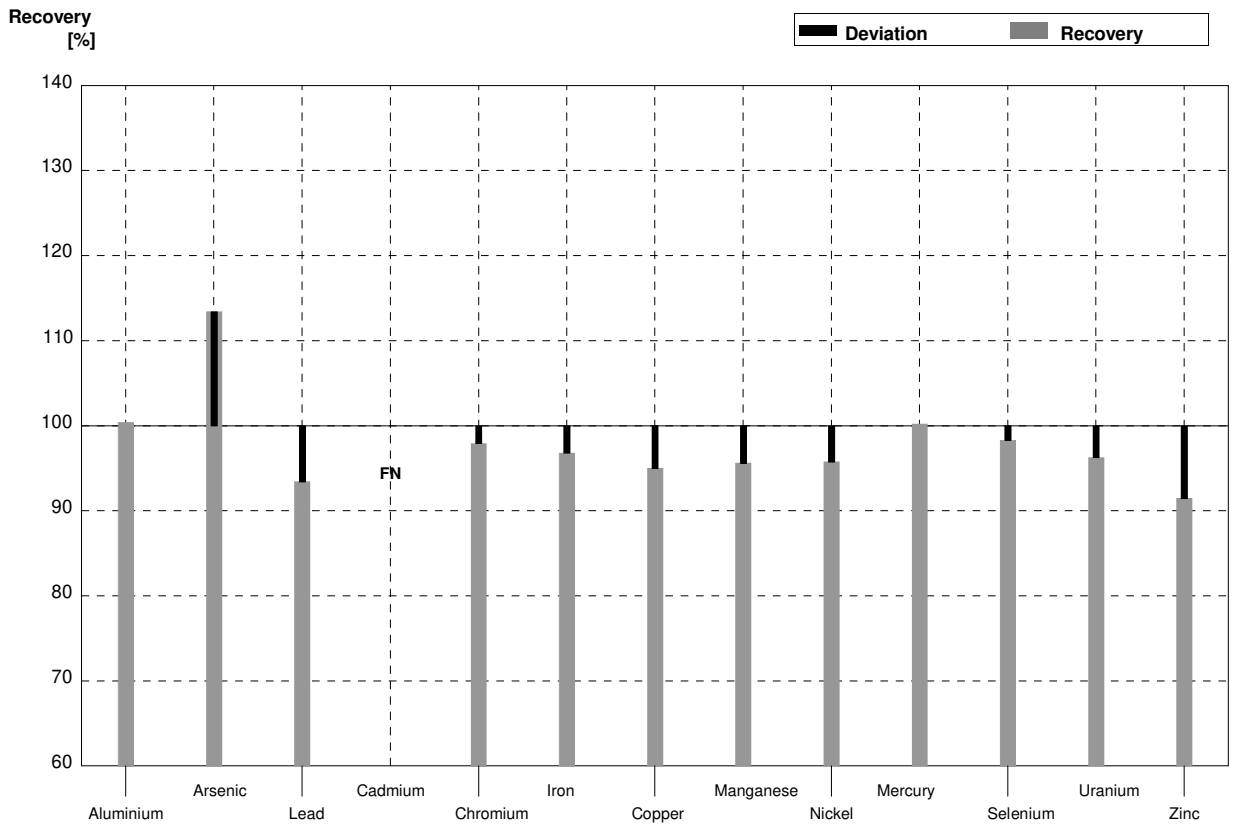
Sample M168B
Laboratory K

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	46,4	1,05	µg/l	92%
Arsenic	5,73	0,04	7,14	0,087	µg/l	125%
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08	7,43	0,72	µg/l	76%
Iron	17,54	0,18	44,4	0,67	µg/l	253%
Copper	1,41	0,03	1,19	0,0179	µg/l	84%
Manganese	37,05	0,18	28,1	0,54	µg/l	76%
Nickel	5,14	0,04	3,86	0,073	µg/l	75%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02	3,46	0,67	µg/l	122%
Uranium	2,109	0,018	2,27	0,0470	µg/l	108%
Zinc	50,0	2,7	62,4	0,71	µg/l	125%



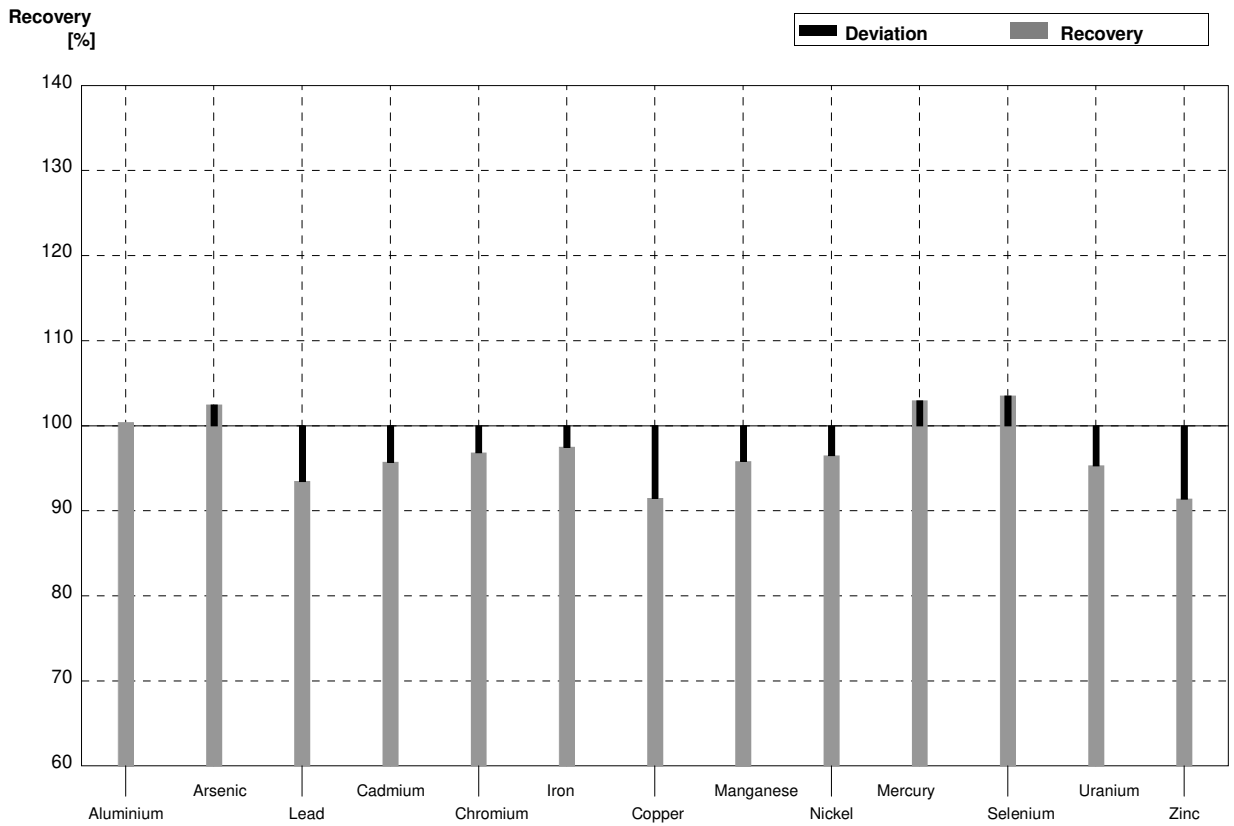
Sample M168A
Laboratory L

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	26,3	5,26	µg/l	100%
Arsenic	1,552	0,014	1,76	0,35	µg/l	113%
Lead	6,85	0,05	6,40	1,28	µg/l	93%
Cadmium	0,1031	0,0019	<0,1		µg/l	FN
Chromium	2,89	0,03	2,83	0,57	µg/l	98%
Iron	71,7	0,3	69,4	13,88	µg/l	97%
Copper	4,60	0,04	4,37	0,87	µg/l	95%
Manganese	27,82	0,15	26,6	5,31	µg/l	96%
Nickel	5,42	0,05	5,19	1,04	µg/l	96%
Mercury	2,655	0,018	2,66	0,53	µg/l	100%
Selenium	3,51	0,03	3,45	0,69	µg/l	98%
Uranium	0,455	0,006	0,438	0,074	µg/l	96%
Zinc	22,3	2,7	20,4	4,07	µg/l	91%



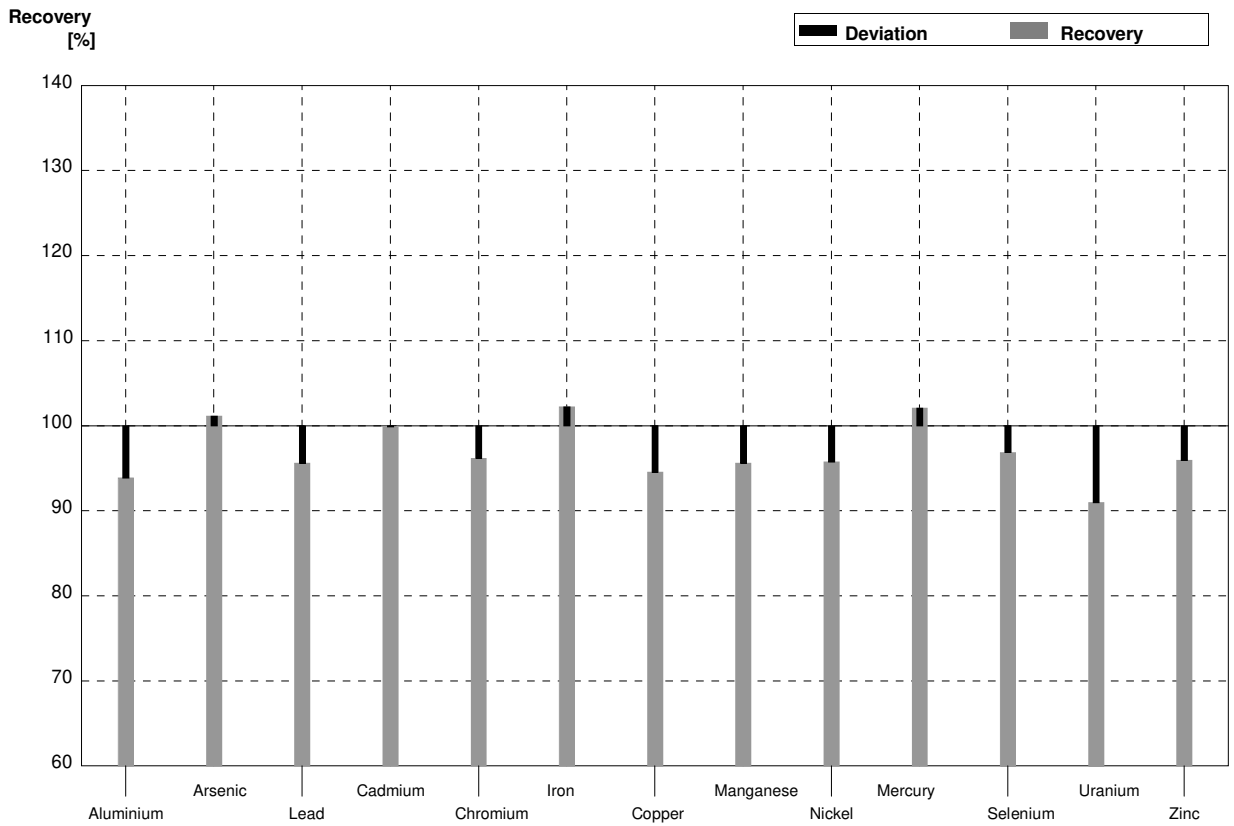
Sample M168B
Laboratory L

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	50,5	10,10	µg/l	100%
Arsenic	5,73	0,04	5,87	1,17	µg/l	102%
Lead	2,91	0,02	2,72	0,54	µg/l	93%
Cadmium	1,567	0,013	1,50	0,30	µg/l	96%
Chromium	9,78	0,08	9,47	1,89	µg/l	97%
Iron	17,54	0,18	17,1	3,41	µg/l	97%
Copper	1,41	0,03	1,29	0,26	µg/l	91%
Manganese	37,05	0,18	35,5	7,10	µg/l	96%
Nickel	5,14	0,04	4,96	0,99	µg/l	96%
Mercury	1,379	0,018	1,42	0,29	µg/l	103%
Selenium	2,83	0,02	2,93	0,59	µg/l	104%
Uranium	2,109	0,018	2,01	0,39	µg/l	95%
Zinc	50,0	2,7	45,7	9,15	µg/l	91%



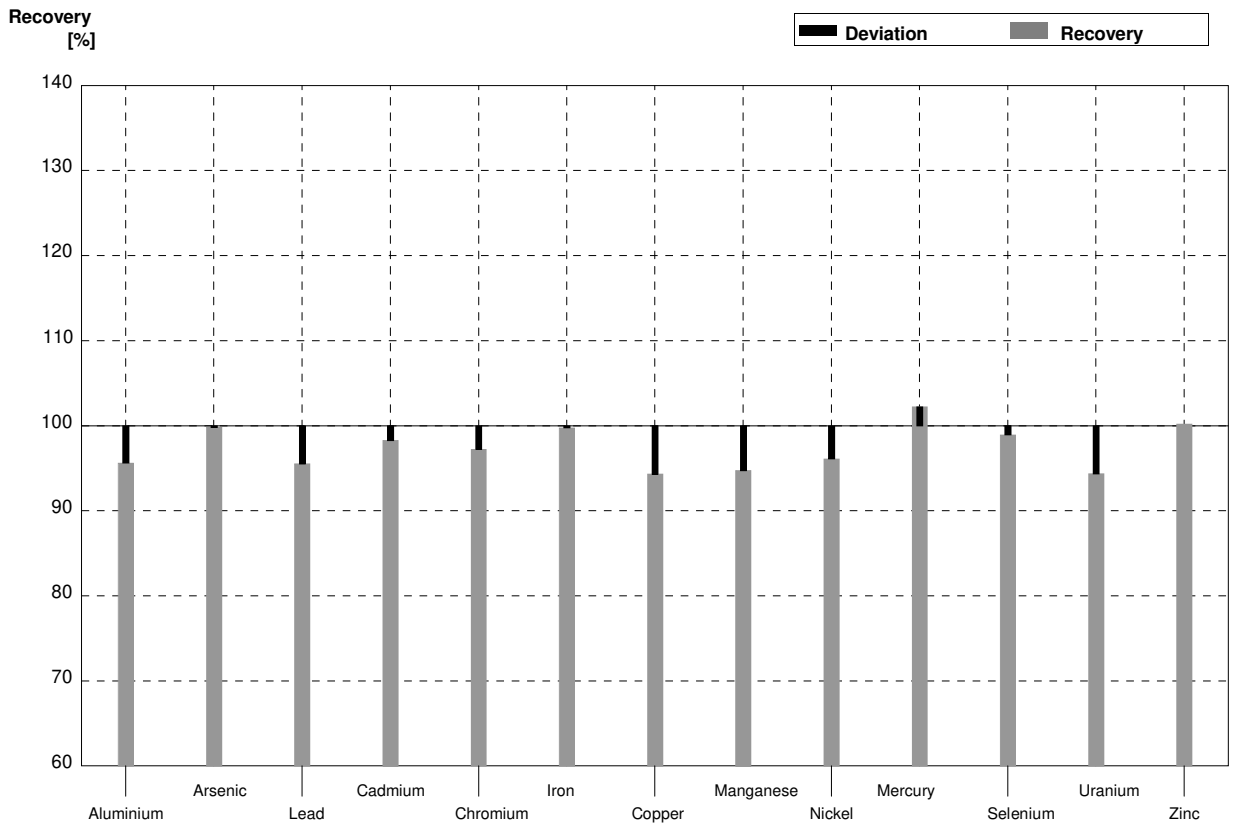
Sample M168A
Laboratory M

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	24,6	4,9	µg/l	94%
Arsenic	1,552	0,014	1,57	0,24	µg/l	101%
Lead	6,85	0,05	6,55	0,79	µg/l	96%
Cadmium	0,1031	0,0019	0,103	0,012	µg/l	100%
Chromium	2,89	0,03	2,78	0,42	µg/l	96%
Iron	71,7	0,3	73,3	11,0	µg/l	102%
Copper	4,60	0,04	4,35	0,52	µg/l	95%
Manganese	27,82	0,15	26,6	3,2	µg/l	96%
Nickel	5,42	0,05	5,19	0,57	µg/l	96%
Mercury	2,655	0,018	2,71	0,60	µg/l	102%
Selenium	3,51	0,03	3,40	0,51	µg/l	97%
Uranium	0,455	0,006	0,414	0,062	µg/l	91%
Zinc	22,3	2,7	21,4	3,2	µg/l	96%



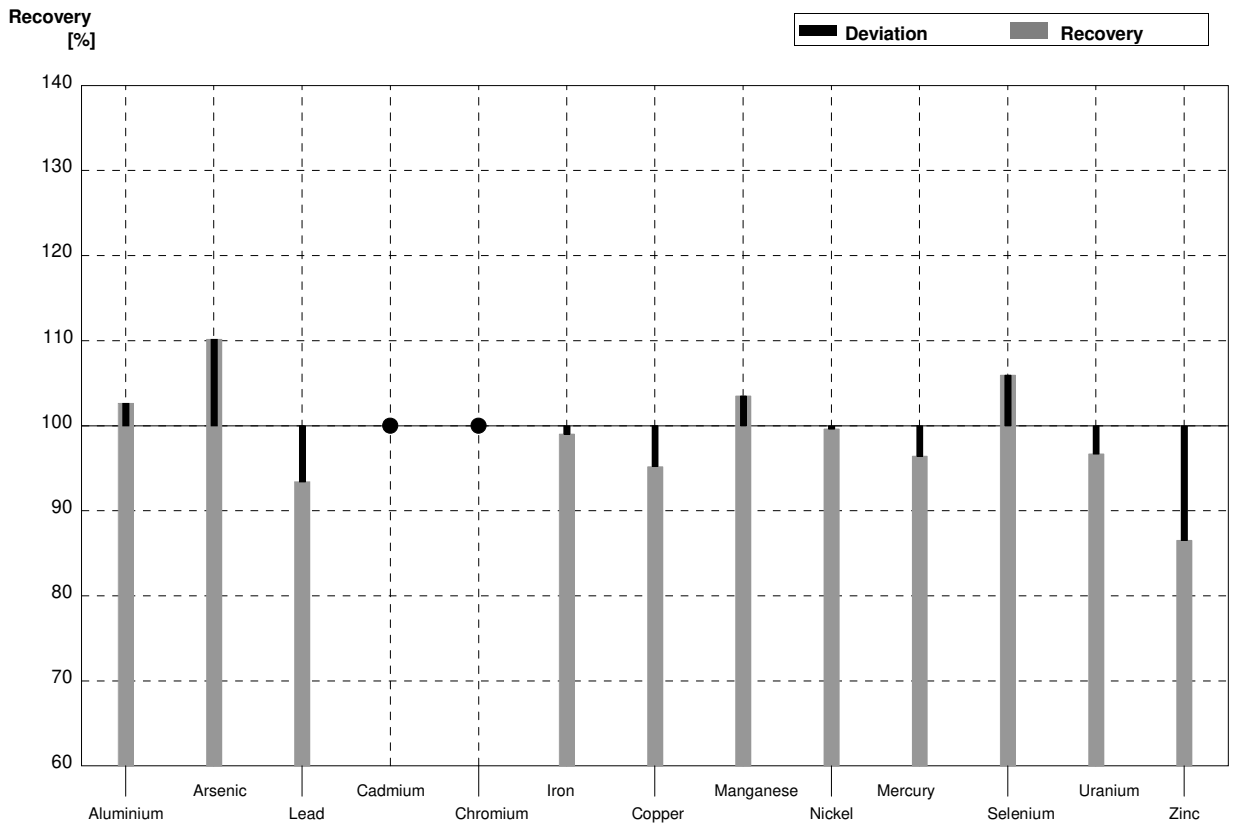
Sample M168B
Laboratory M

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	48,1	9,6	µg/l	96%
Arsenic	5,73	0,04	5,72	0,86	µg/l	100%
Lead	2,91	0,02	2,78	0,33	µg/l	96%
Cadmium	1,567	0,013	1,54	0,18	µg/l	98%
Chromium	9,78	0,08	9,51	1,4	µg/l	97%
Iron	17,54	0,18	17,5	2,6	µg/l	100%
Copper	1,41	0,03	1,33	0,16	µg/l	94%
Manganese	37,05	0,18	35,1	4,2	µg/l	95%
Nickel	5,14	0,04	4,94	0,54	µg/l	96%
Mercury	1,379	0,018	1,41	0,31	µg/l	102%
Selenium	2,83	0,02	2,80	0,42	µg/l	99%
Uranium	2,109	0,018	1,99	0,30	µg/l	94%
Zinc	50,0	2,7	50,1	7,5	µg/l	100%



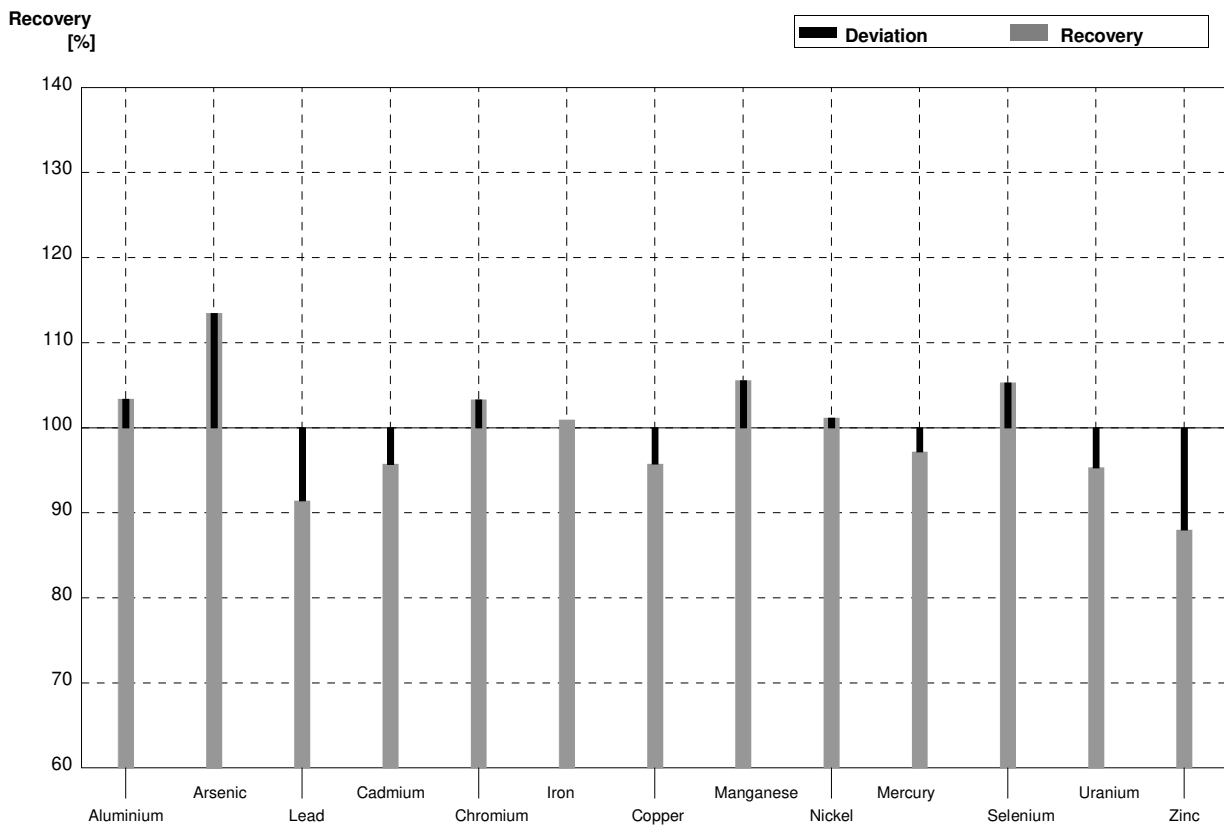
Sample M168A
Laboratory N

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	26,9	5,4	µg/l	103%
Arsenic	1,552	0,014	1,71	0,342	µg/l	110%
Lead	6,85	0,05	6,4	1,27	µg/l	93%
Cadmium	0,1031	0,0019	<0,5		µg/l	•
Chromium	2,89	0,03	<5		µg/l	•
Iron	71,7	0,3	71	14,2	µg/l	99%
Copper	4,60	0,04	4,38	0,88	µg/l	95%
Manganese	27,82	0,15	28,8	5,8	µg/l	104%
Nickel	5,42	0,05	5,4	1,08	µg/l	100%
Mercury	2,655	0,018	2,56	0,51	µg/l	96%
Selenium	3,51	0,03	3,72	0,74	µg/l	106%
Uranium	0,455	0,006	0,440	0,088	µg/l	97%
Zinc	22,3	2,7	19,3	3,86	µg/l	87%



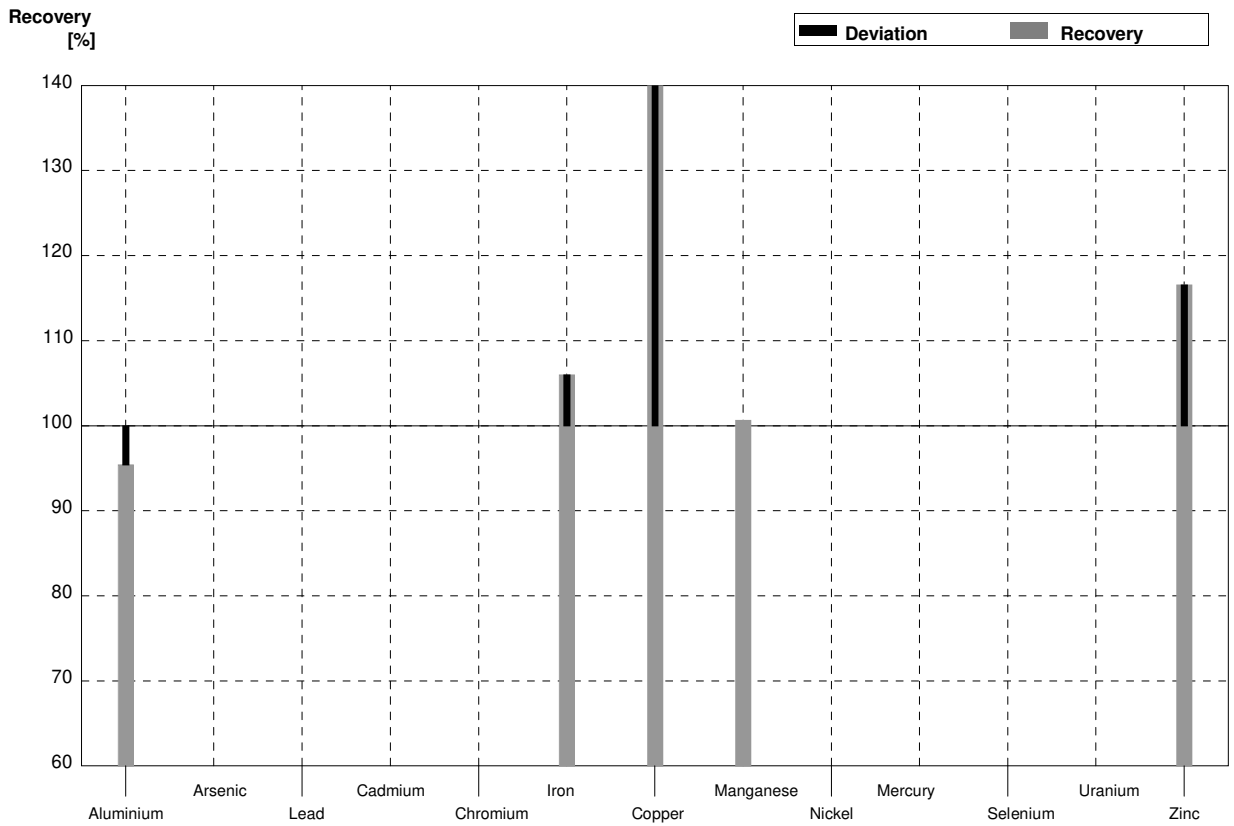
Sample M168B
Laboratory N

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	52	10,4	µg/l	103%
Arsenic	5,73	0,04	6,50	1,30	µg/l	113%
Lead	2,91	0,02	2,66	0,53	µg/l	91%
Cadmium	1,567	0,013	1,50	0,225	µg/l	96%
Chromium	9,78	0,08	10,1	1,52	µg/l	103%
Iron	17,54	0,18	17,7	3,54	µg/l	101%
Copper	1,41	0,03	1,35	0,270	µg/l	96%
Manganese	37,05	0,18	39,1	7,8	µg/l	106%
Nickel	5,14	0,04	5,2	1,04	µg/l	101%
Mercury	1,379	0,018	1,34	0,268	µg/l	97%
Selenium	2,83	0,02	2,98	0,60	µg/l	105%
Uranium	2,109	0,018	2,01	0,402	µg/l	95%
Zinc	50,0	2,7	44,0	8,8	µg/l	88%



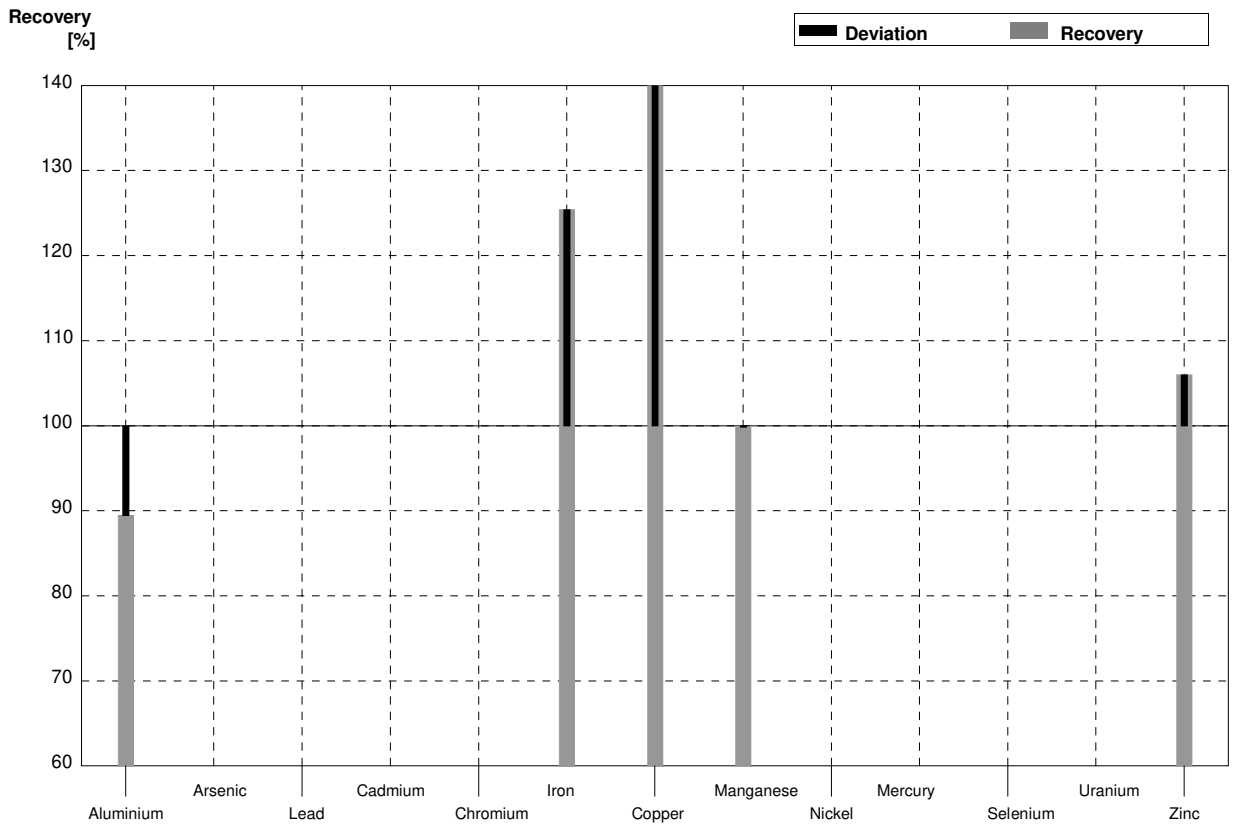
Sample M168A
Laboratory O

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	25,0	4	µg/l	95%
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3	76,0	4	µg/l	106%
Copper	4,60	0,04	7,0	5	µg/l	152%
Manganese	27,82	0,15	28,0	2	µg/l	101%
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7	26,0	10	µg/l	117%



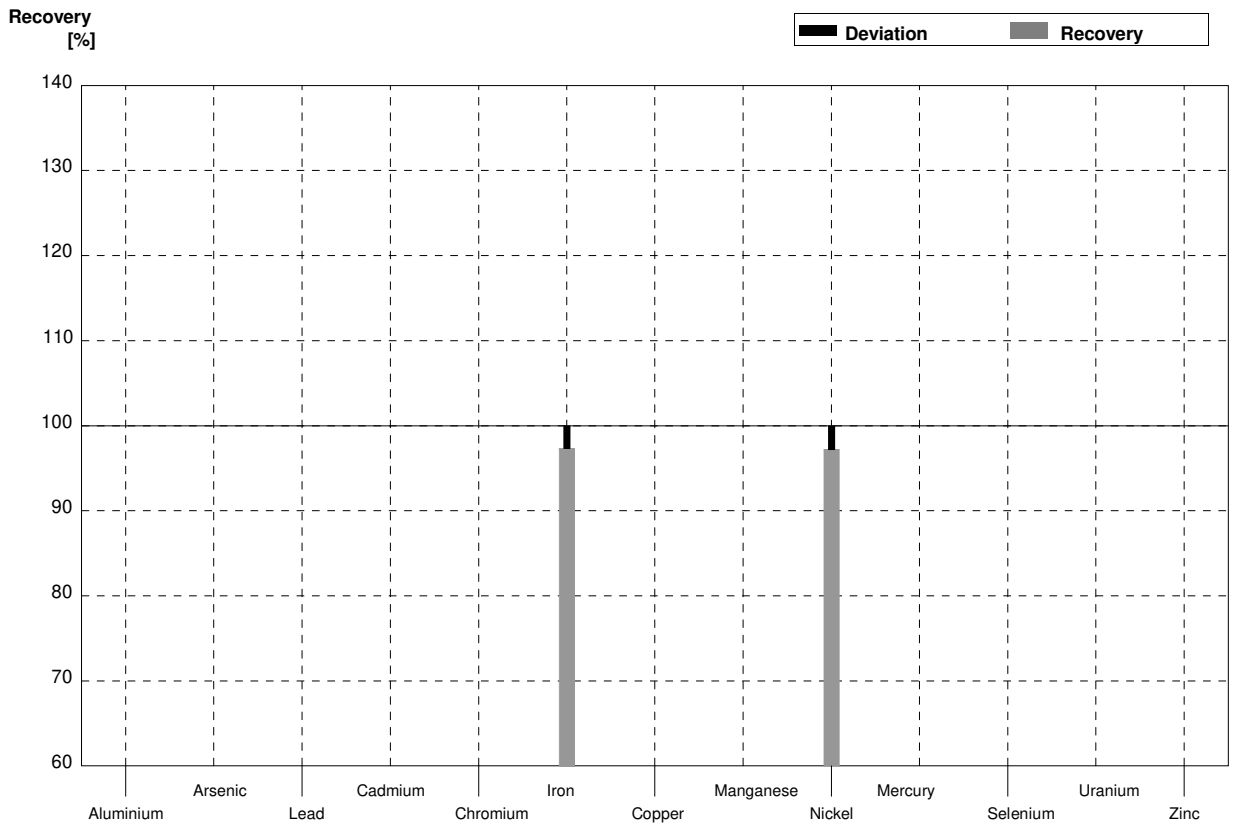
Sample M168B
Laboratory O

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	45,0	4	µg/l	89%
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18	22,0	4	µg/l	125%
Copper	1,41	0,03	5,0	5	µg/l	355%
Manganese	37,05	0,18	37,0	2	µg/l	100%
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7	53,0	10	µg/l	106%



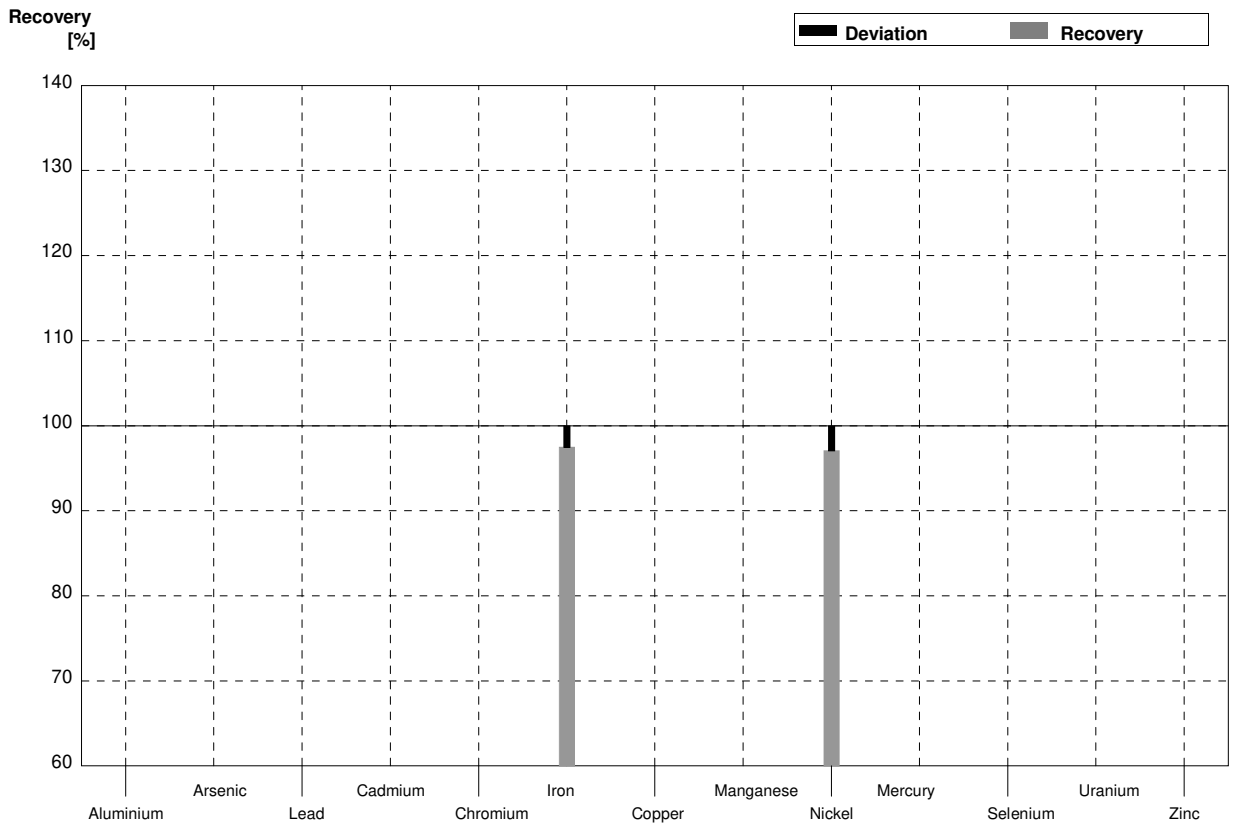
Sample M168A
Laboratory P

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4			µg/l	
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3	69,8	5,6	µg/l	97%
Copper	4,60	0,04			µg/l	
Manganese	27,82	0,15			µg/l	
Nickel	5,42	0,05	5,27	0,42	µg/l	97%
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



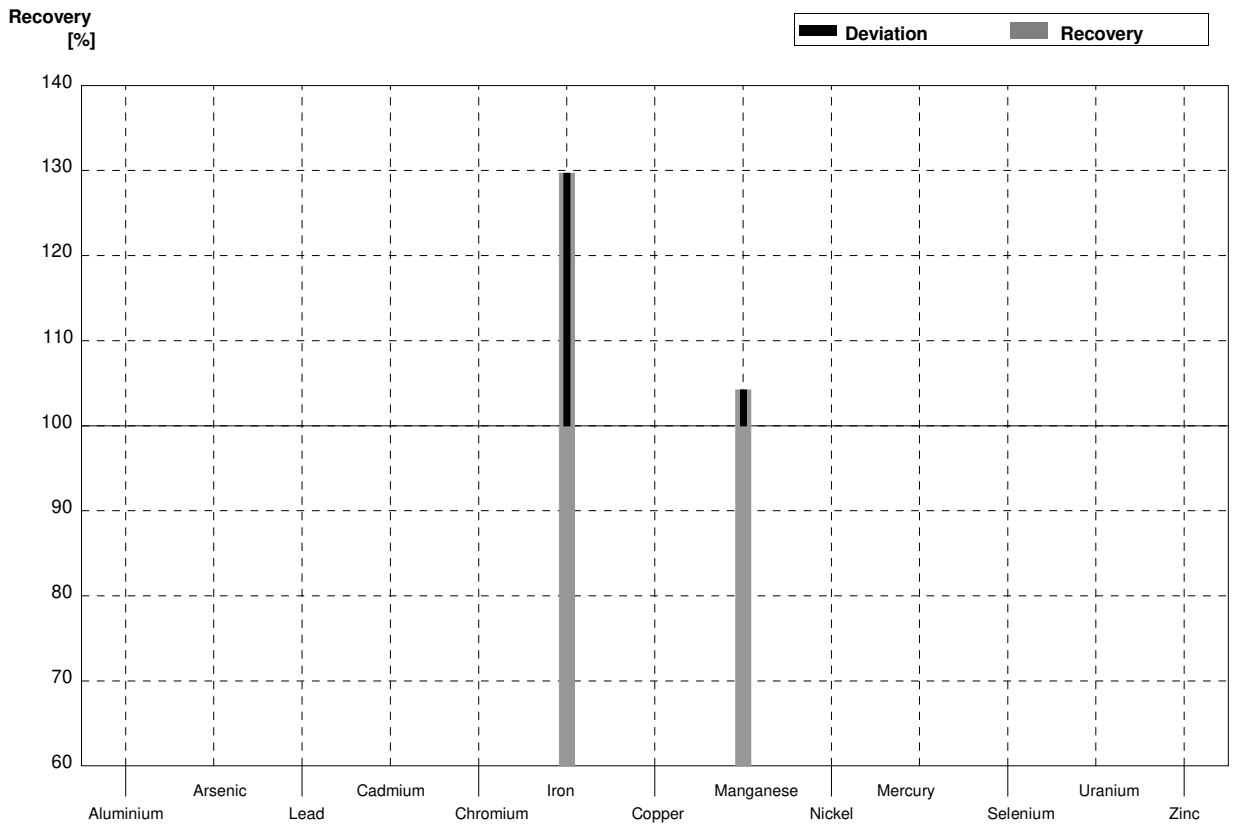
Sample M168B
Laboratory P

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5			µg/l	
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18	17,1	1,4	µg/l	97%
Copper	1,41	0,03			µg/l	
Manganese	37,05	0,18			µg/l	
Nickel	5,14	0,04	4,99	0,40	µg/l	97%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



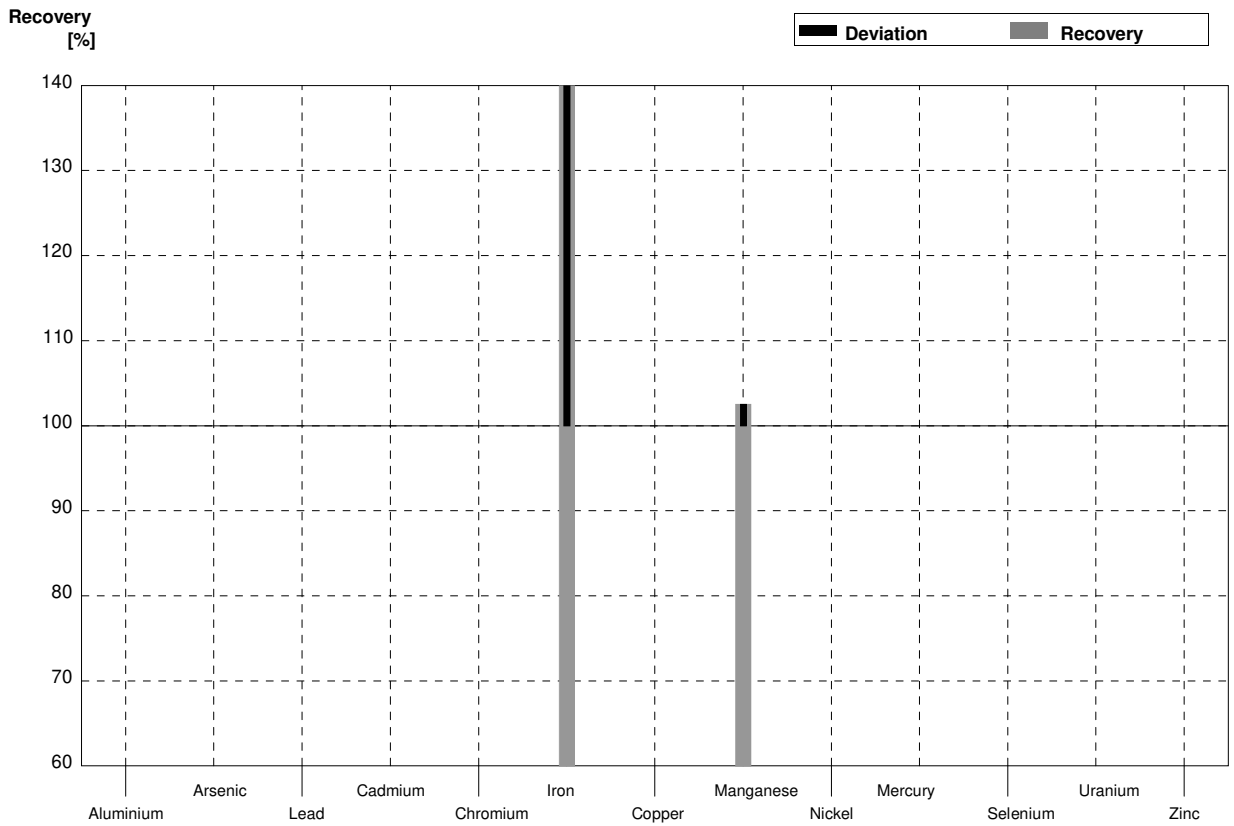
Sample M168A
Laboratory Q

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4			µg/l	
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3	93,0	12,03	µg/l	130%
Copper	4,60	0,04			µg/l	
Manganese	27,82	0,15	29,0	4,24	µg/l	104%
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



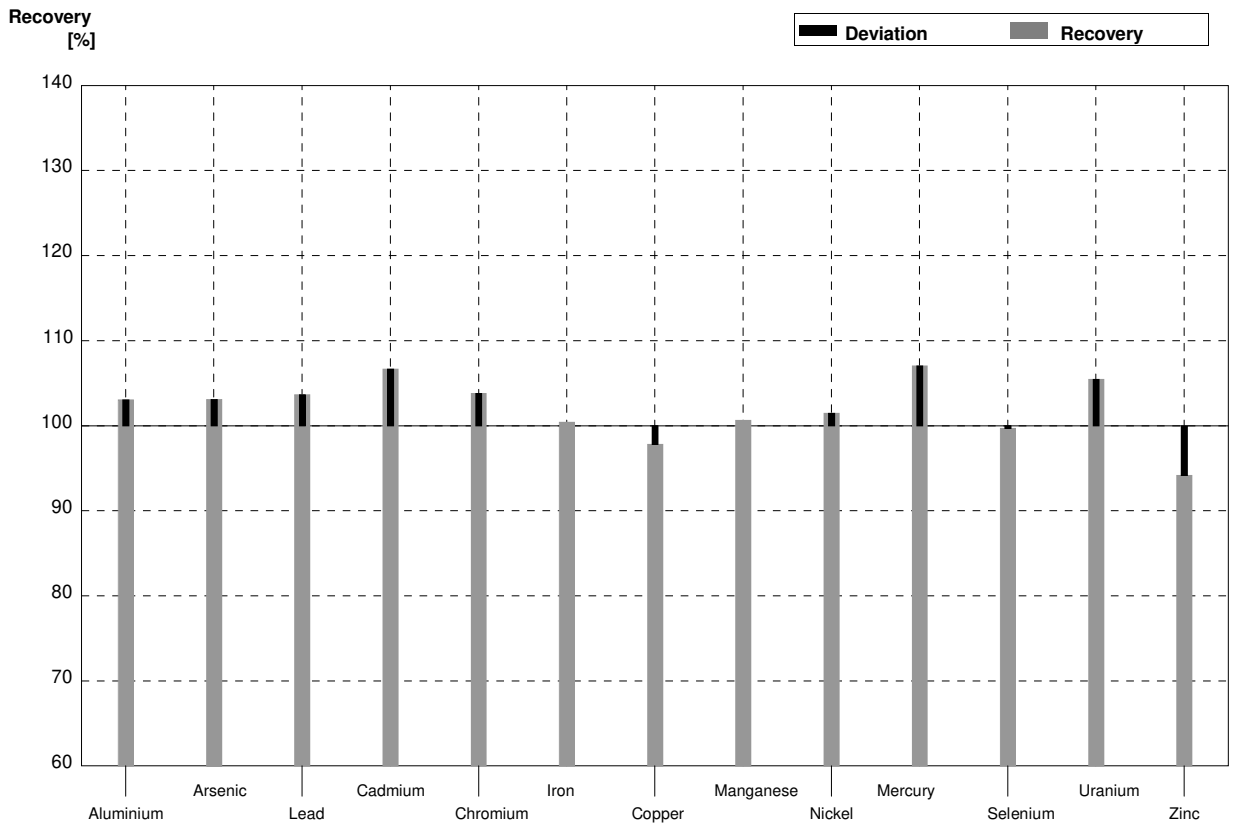
Sample M168B
Laboratory Q

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5			µg/l	
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18	33,0	4,27	µg/l	188%
Copper	1,41	0,03			µg/l	
Manganese	37,05	0,18	38,0	5,55	µg/l	103%
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



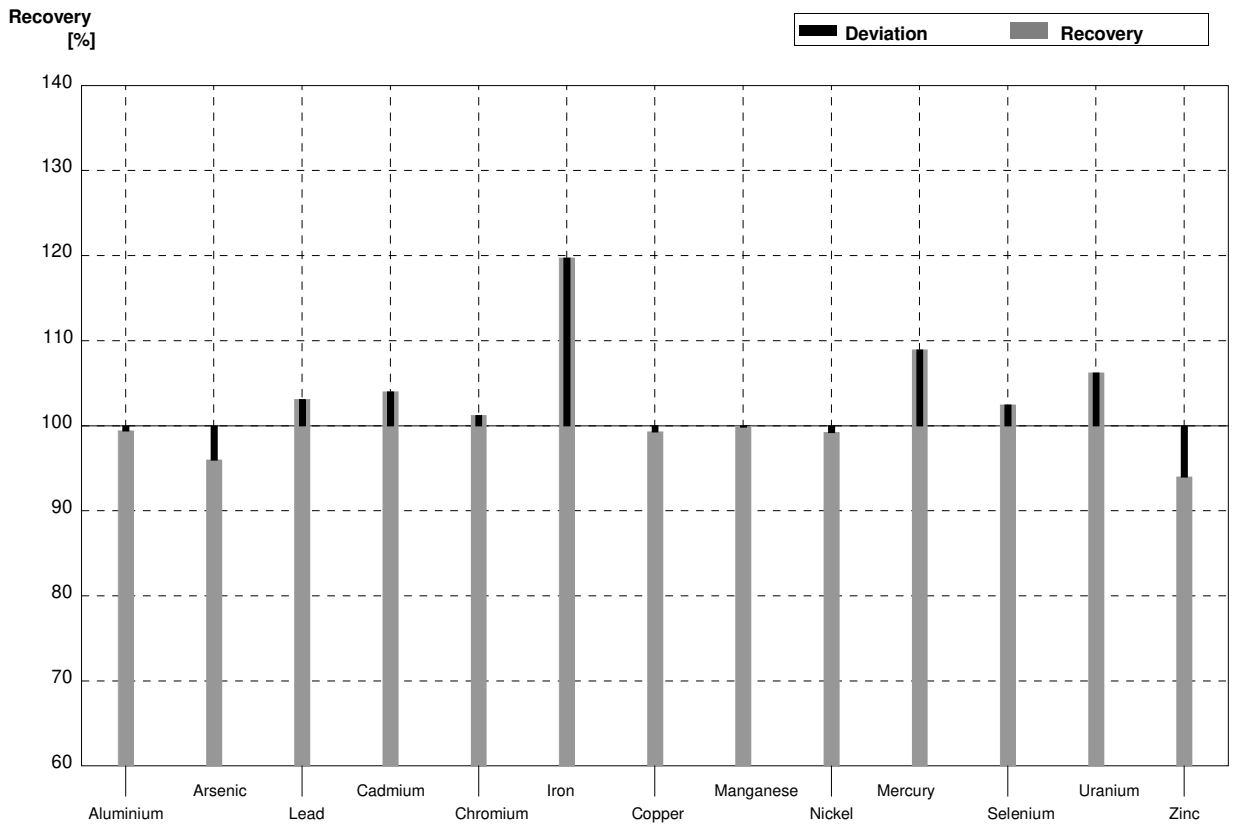
Sample M168A
Laboratory R

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	27,0	2,70	µg/l	103%
Arsenic	1,552	0,014	1,60	0,192	µg/l	103%
Lead	6,85	0,05	7,10	0,57	µg/l	104%
Cadmium	0,1031	0,0019	0,110	0,0088	µg/l	107%
Chromium	2,89	0,03	3,00	0,360	µg/l	104%
Iron	71,7	0,3	72,0	18,72	µg/l	100%
Copper	4,60	0,04	4,50	0,360	µg/l	98%
Manganese	27,82	0,15	28,0	2,80	µg/l	101%
Nickel	5,42	0,05	5,50	0,550	µg/l	101%
Mercury	2,655	0,018	2,842	0,426	µg/l	107%
Selenium	3,51	0,03	3,50	0,525	µg/l	100%
Uranium	0,455	0,006	0,480	0,0240	µg/l	105%
Zinc	22,3	2,7	21,0	2,10	µg/l	94%



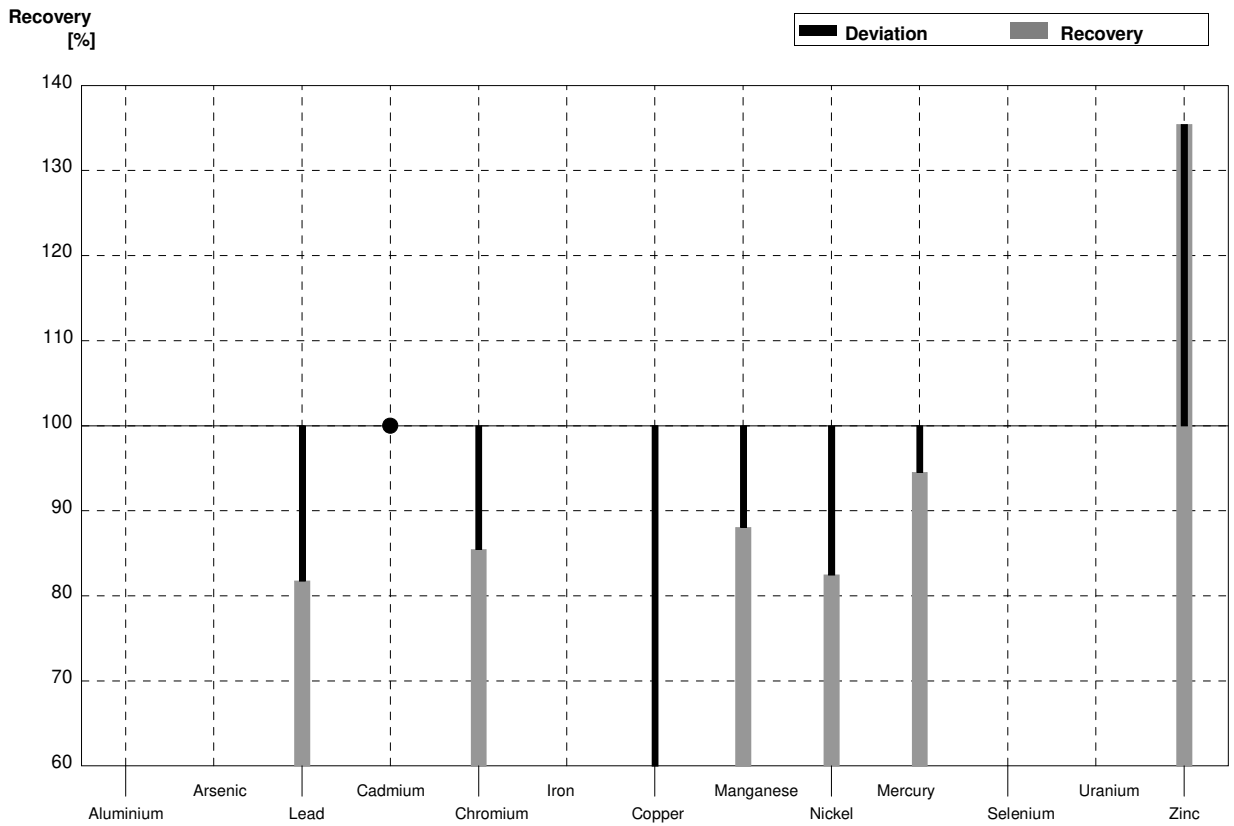
Sample M168B
Laboratory R

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	50,0	5,00	µg/l	99%
Arsenic	5,73	0,04	5,50	0,660	µg/l	96%
Lead	2,91	0,02	3,00	0,240	µg/l	103%
Cadmium	1,567	0,013	1,63	0,130	µg/l	104%
Chromium	9,78	0,08	9,90	1,188	µg/l	101%
Iron	17,54	0,18	21,0	5,46	µg/l	120%
Copper	1,41	0,03	1,40	0,112	µg/l	99%
Manganese	37,05	0,18	37,0	3,70	µg/l	100%
Nickel	5,14	0,04	5,10	0,510	µg/l	99%
Mercury	1,379	0,018	1,502	0,2253	µg/l	109%
Selenium	2,83	0,02	2,90	0,435	µg/l	102%
Uranium	2,109	0,018	2,24	0,112	µg/l	106%
Zinc	50,0	2,7	47,0	4,70	µg/l	94%



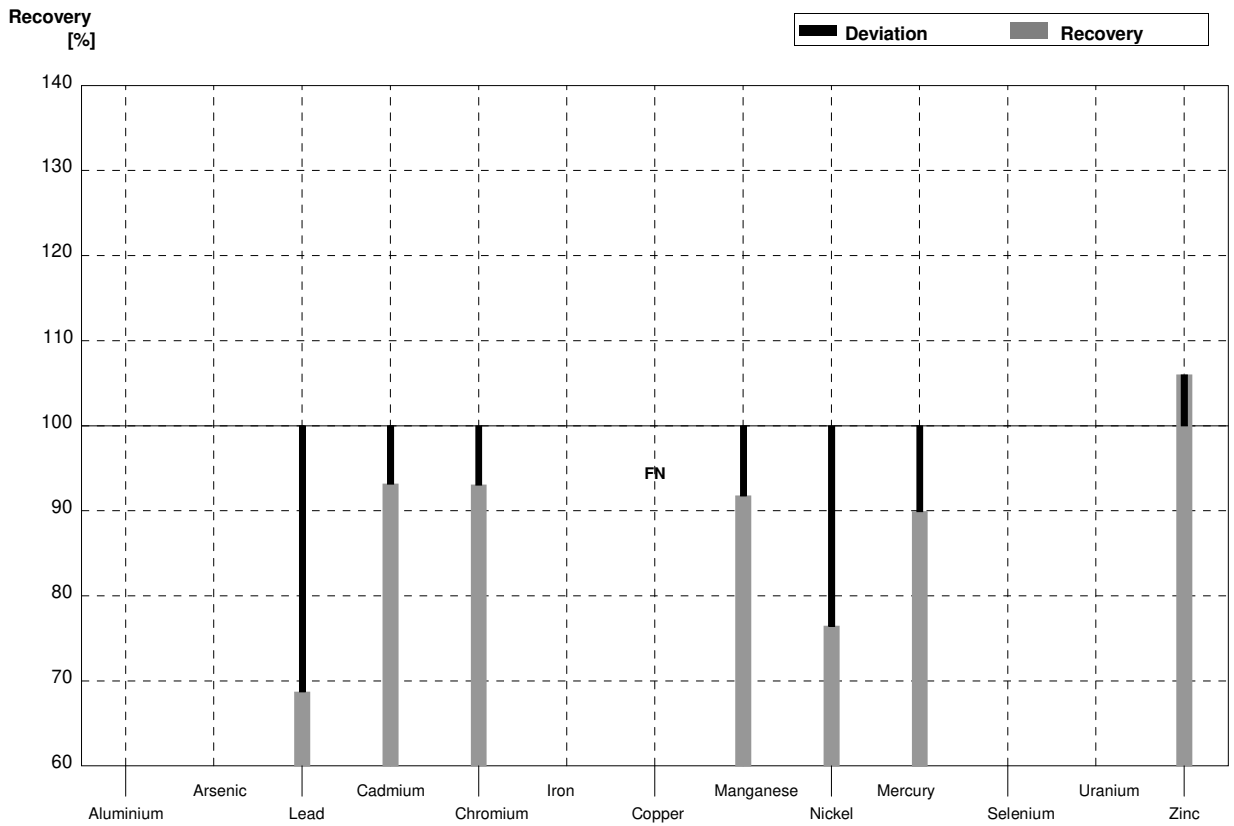
Sample M168A
Laboratory S

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4			µg/l	
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05	5,6	0,56	µg/l	82%
Cadmium	0,1031	0,0019	<0,1	0,025	µg/l	•
Chromium	2,89	0,03	2,47	0,25	µg/l	85%
Iron	71,7	0,3			µg/l	
Copper	4,60	0,04	1,84	0,18	µg/l	40%
Manganese	27,82	0,15	24,5	2,5	µg/l	88%
Nickel	5,42	0,05	4,47	0,45	µg/l	82%
Mercury	2,655	0,018	2,51	0,25	µg/l	95%
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7	30,2	3,0	µg/l	135%



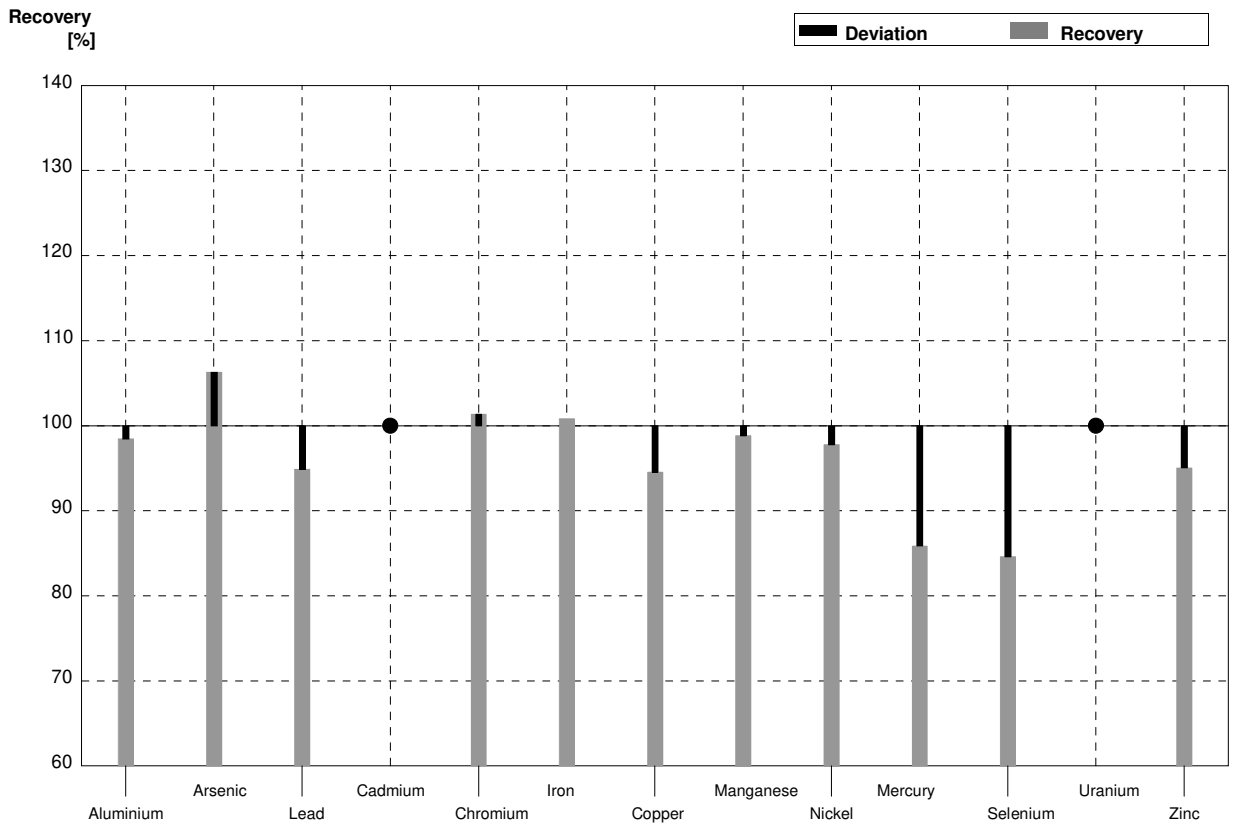
Sample M168B
Laboratory S

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5			µg/l	
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02	2,00	0,20	µg/l	69%
Cadmium	1,567	0,013	1,46	0,15	µg/l	93%
Chromium	9,78	0,08	9,1	0,91	µg/l	93%
Iron	17,54	0,18			µg/l	
Copper	1,41	0,03	<1	0,25	µg/l	FN
Manganese	37,05	0,18	34,0	3,4	µg/l	92%
Nickel	5,14	0,04	3,93	0,39	µg/l	76%
Mercury	1,379	0,018	1,24	0,12	µg/l	90%
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7	53	5,3	µg/l	106%



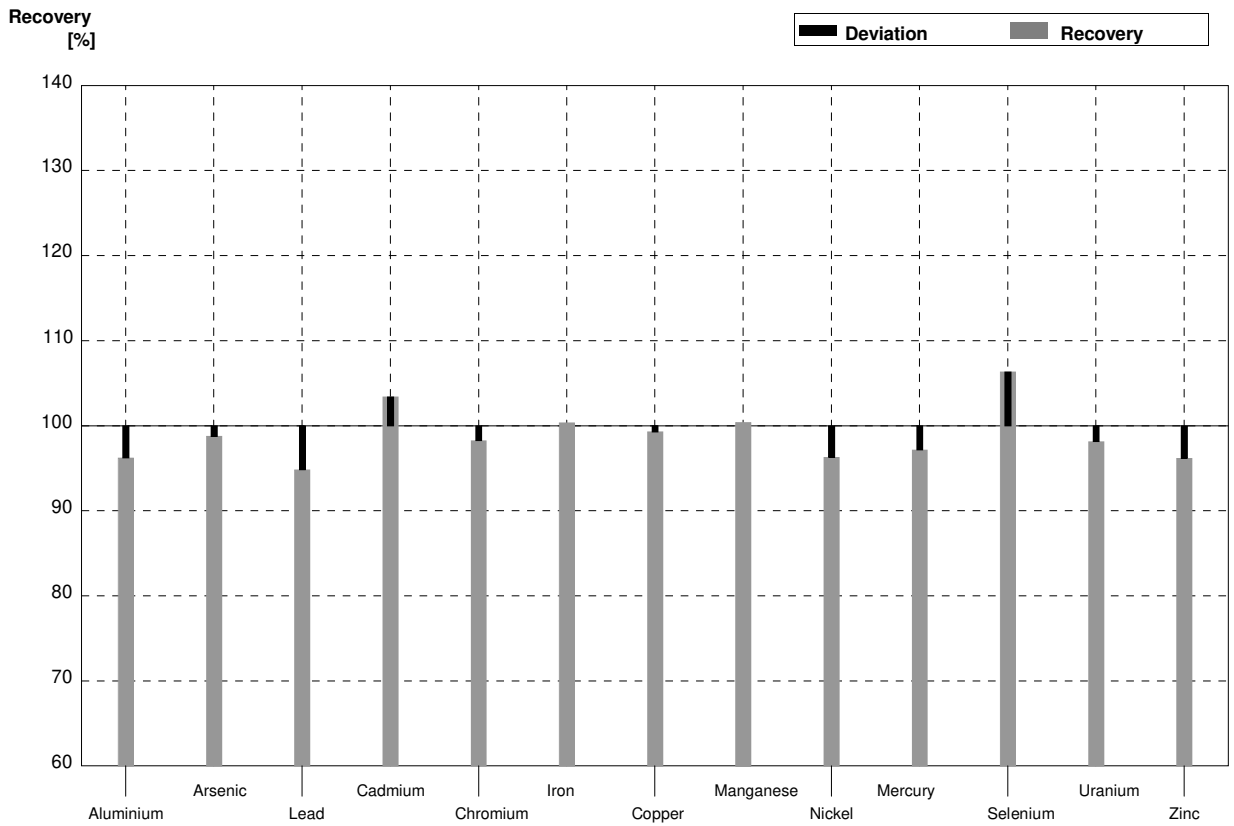
Sample M168A
Laboratory T

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	25,8	2,58	µg/l	98%
Arsenic	1,552	0,014	1,65	0,25	µg/l	106%
Lead	6,85	0,05	6,5	0,65	µg/l	95%
Cadmium	0,1031	0,0019	<0,2		µg/l	•
Chromium	2,89	0,03	2,93	0,29	µg/l	101%
Iron	71,7	0,3	72,3	7,23	µg/l	101%
Copper	4,60	0,04	4,35	0,435	µg/l	95%
Manganese	27,82	0,15	27,5	2,75	µg/l	99%
Nickel	5,42	0,05	5,3	0,53	µg/l	98%
Mercury	2,655	0,018	2,28	0,264	µg/l	86%
Selenium	3,51	0,03	2,97	0,446	µg/l	85%
Uranium	0,455	0,006	<1,0		µg/l	•
Zinc	22,3	2,7	21,2	2,12	µg/l	95%



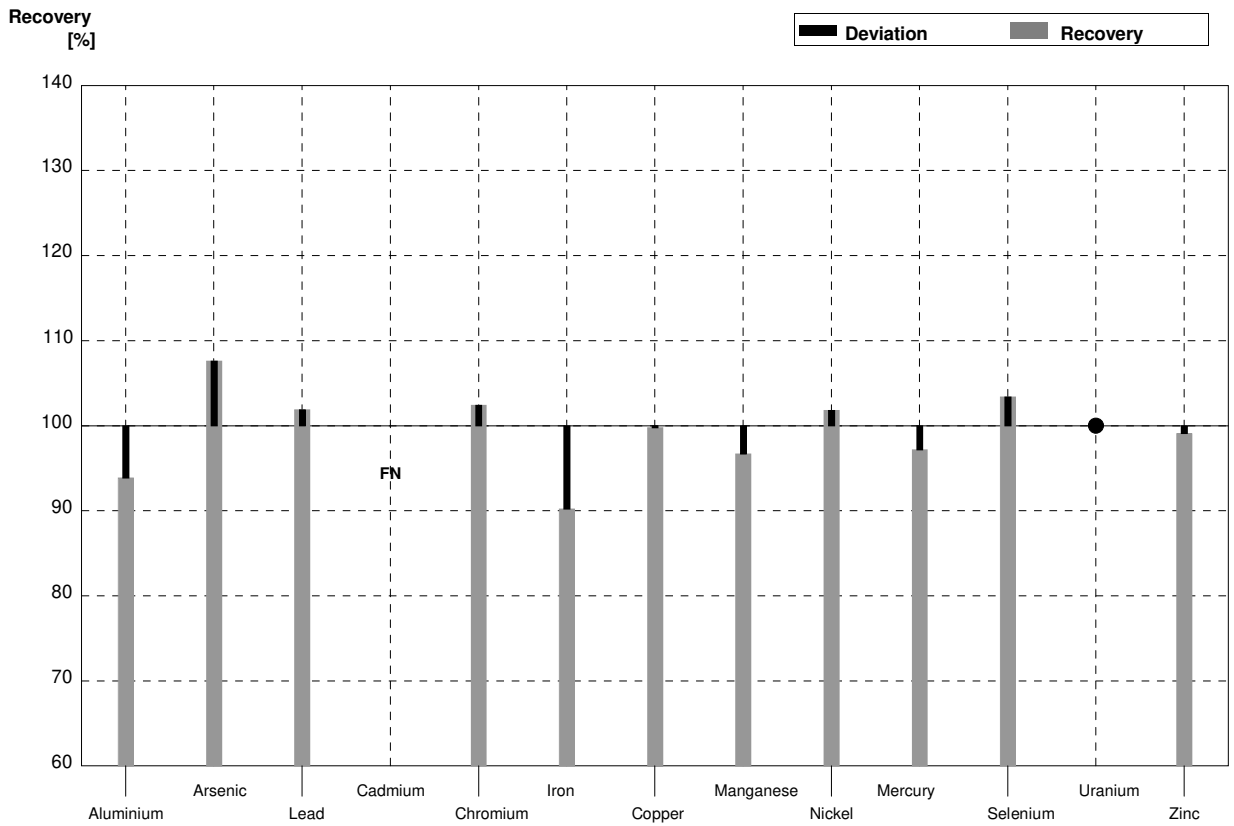
Sample M168B
Laboratory T

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	48,4	4,84	µg/l	96%
Arsenic	5,73	0,04	5,66	0,849	µg/l	99%
Lead	2,91	0,02	2,76	0,276	µg/l	95%
Cadmium	1,567	0,013	1,62	0,162	µg/l	103%
Chromium	9,78	0,08	9,61	0,961	µg/l	98%
Iron	17,54	0,18	17,6	1,76	µg/l	100%
Copper	1,41	0,03	1,40	0,14	µg/l	99%
Manganese	37,05	0,18	37,2	3,72	µg/l	100%
Nickel	5,14	0,04	4,95	0,495	µg/l	96%
Mercury	1,379	0,018	1,34	0,134	µg/l	97%
Selenium	2,83	0,02	3,01	0,452	µg/l	106%
Uranium	2,109	0,018	2,07	0,203	µg/l	98%
Zinc	50,0	2,7	48,1	4,81	µg/l	96%



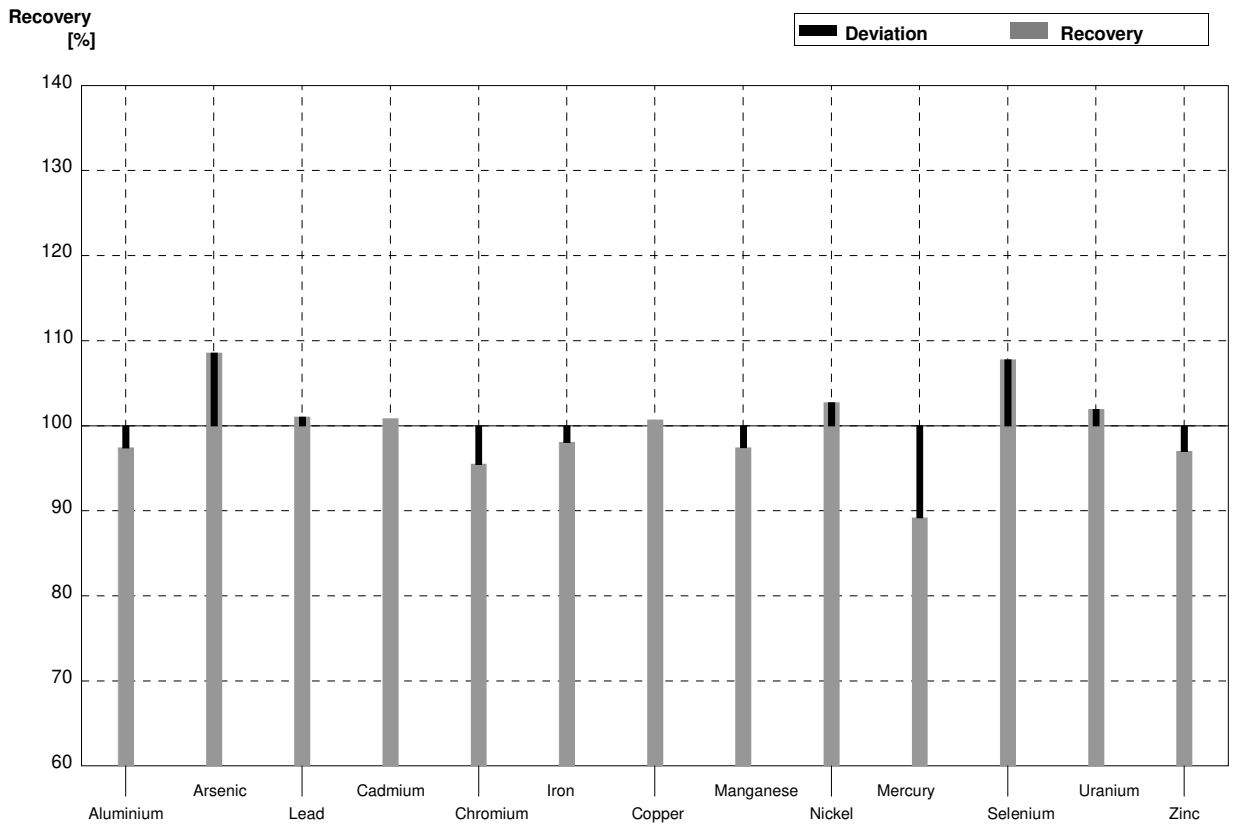
Sample M168A
Laboratory U

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	24,6	0,795	µg/l	94%
Arsenic	1,552	0,014	1,67	0,107	µg/l	108%
Lead	6,85	0,05	6,98	0,0751	µg/l	102%
Cadmium	0,1031	0,0019	<0,100		µg/l	FN
Chromium	2,89	0,03	2,96	0,107	µg/l	102%
Iron	71,7	0,3	64,7	0,508	µg/l	90%
Copper	4,60	0,04	4,59	0,0801	µg/l	100%
Manganese	27,82	0,15	26,9	0,711	µg/l	97%
Nickel	5,42	0,05	5,52	0,0288	µg/l	102%
Mercury	2,655	0,018	2,58	0,0121	µg/l	97%
Selenium	3,51	0,03	3,63	0,0631	µg/l	103%
Uranium	0,455	0,006	<1,00		µg/l	•
Zinc	22,3	2,7	22,1	0,188	µg/l	99%



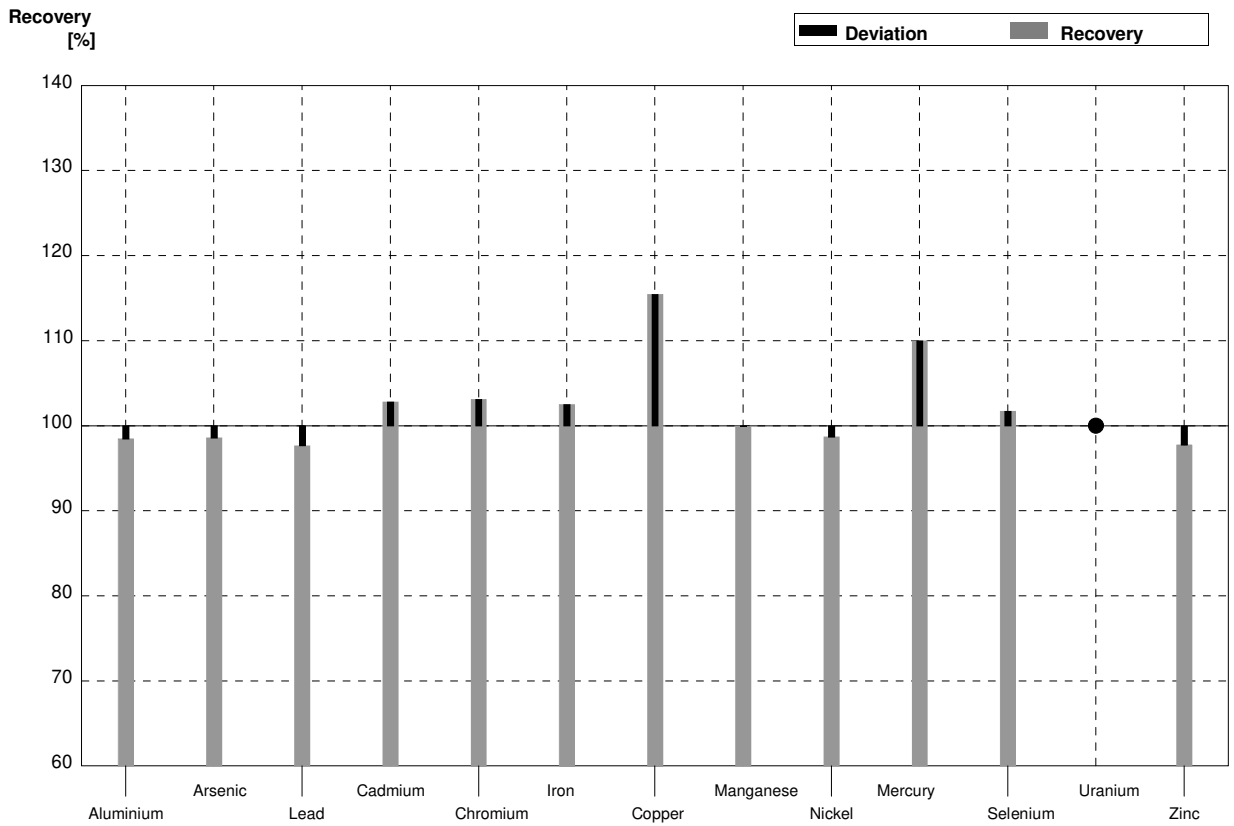
Sample M168B
Laboratory U

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	49,0	0,569	µg/l	97%
Arsenic	5,73	0,04	6,22	0,0943	µg/l	109%
Lead	2,91	0,02	2,94	0,0754	µg/l	101%
Cadmium	1,567	0,013	1,58	0,0386	µg/l	101%
Chromium	9,78	0,08	9,34	0,117	µg/l	96%
Iron	17,54	0,18	17,2	0,546	µg/l	98%
Copper	1,41	0,03	1,42	0,0948	µg/l	101%
Manganese	37,05	0,18	36,1	0,705	µg/l	97%
Nickel	5,14	0,04	5,28	0,0288	µg/l	103%
Mercury	1,379	0,018	1,23	0,00922	µg/l	89%
Selenium	2,83	0,02	3,05	0,0643	µg/l	108%
Uranium	2,109	0,018	2,15	0,0512	µg/l	102%
Zinc	50,0	2,7	48,5	0,231	µg/l	97%



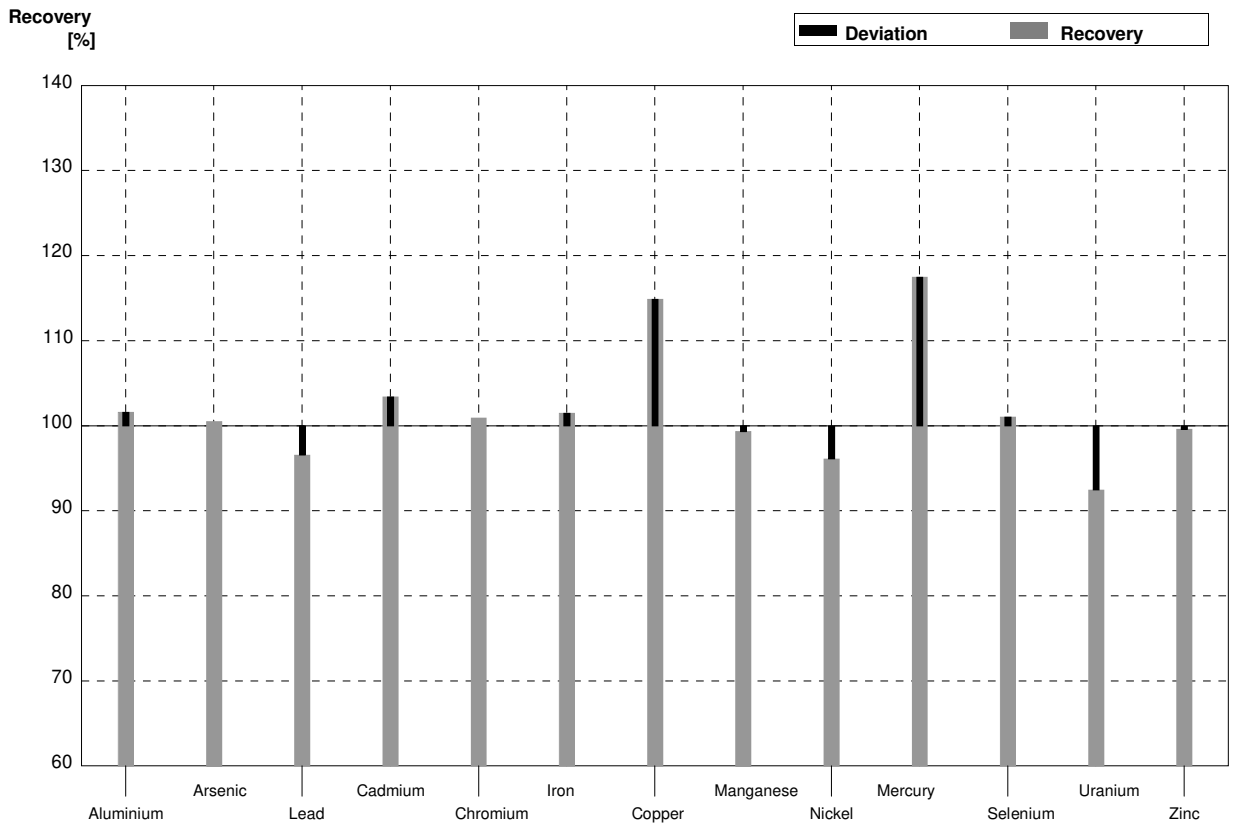
Sample M168A
Laboratory V

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	25,8	6,5	µg/l	98%
Arsenic	1,552	0,014	1,53	0,46	µg/l	99%
Lead	6,85	0,05	6,69	1,7	µg/l	98%
Cadmium	0,1031	0,0019	0,106	0,027	µg/l	103%
Chromium	2,89	0,03	2,98	0,89	µg/l	103%
Iron	71,7	0,3	73,5	22	µg/l	103%
Copper	4,60	0,04	5,31	1,33	µg/l	115%
Manganese	27,82	0,15	27,8	8,3	µg/l	100%
Nickel	5,42	0,05	5,35	1,3	µg/l	99%
Mercury	2,655	0,018	2,92	0,88	µg/l	110%
Selenium	3,51	0,03	3,57	1,4	µg/l	102%
Uranium	0,455	0,006	<0,5		µg/l	•
Zinc	22,3	2,7	21,8	5,5	µg/l	98%



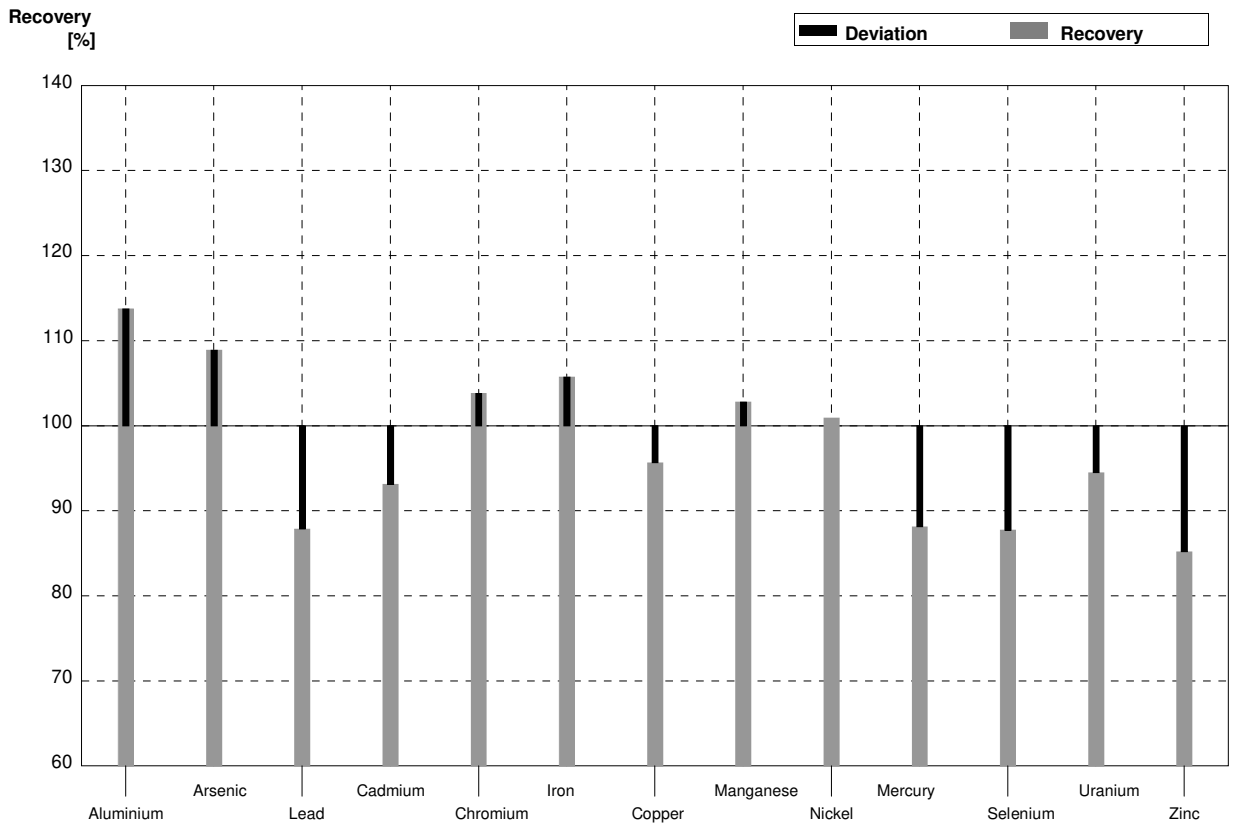
Sample M168B
Laboratory V

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	51,1	12,8	µg/l	102%
Arsenic	5,73	0,04	5,76	1,7	µg/l	101%
Lead	2,91	0,02	2,81	0,7	µg/l	97%
Cadmium	1,567	0,013	1,62	0,41	µg/l	103%
Chromium	9,78	0,08	9,87	3,0	µg/l	101%
Iron	17,54	0,18	17,8	5,3	µg/l	101%
Copper	1,41	0,03	1,62	0,41	µg/l	115%
Manganese	37,05	0,18	36,8	11	µg/l	99%
Nickel	5,14	0,04	4,94	1,2	µg/l	96%
Mercury	1,379	0,018	1,62	0,49	µg/l	117%
Selenium	2,83	0,02	2,86	1,1	µg/l	101%
Uranium	2,109	0,018	1,95	0,59	µg/l	92%
Zinc	50,0	2,7	49,8	12,5	µg/l	100%



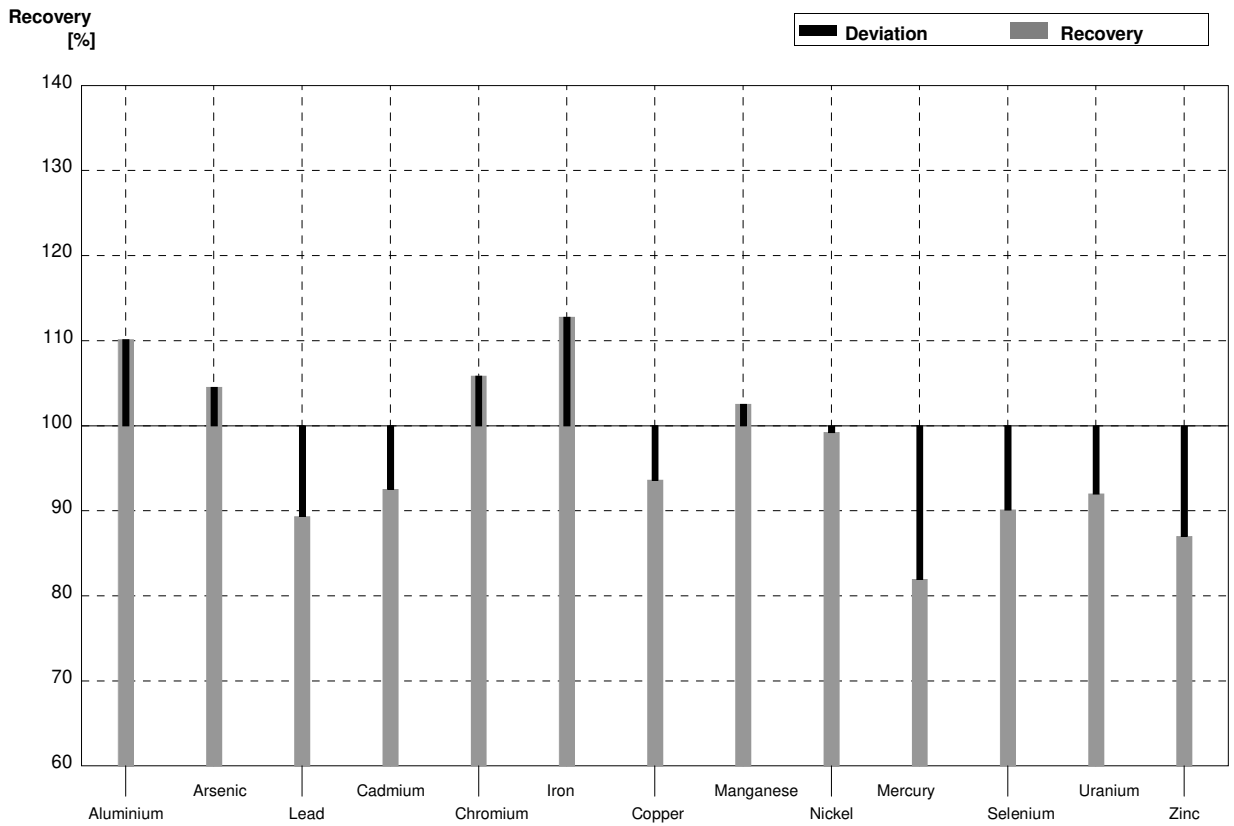
Sample M168A
Laboratory W

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	29,8		µg/l	114%
Arsenic	1,552	0,014	1,69		µg/l	109%
Lead	6,85	0,05	6,02		µg/l	88%
Cadmium	0,1031	0,0019	0,096		µg/l	93%
Chromium	2,89	0,03	3,00		µg/l	104%
Iron	71,7	0,3	75,8		µg/l	106%
Copper	4,60	0,04	4,40		µg/l	96%
Manganese	27,82	0,15	28,6		µg/l	103%
Nickel	5,42	0,05	5,47		µg/l	101%
Mercury	2,655	0,018	2,34		µg/l	88%
Selenium	3,51	0,03	3,08		µg/l	88%
Uranium	0,455	0,006	0,430		µg/l	95%
Zinc	22,3	2,7	19,0		µg/l	85%



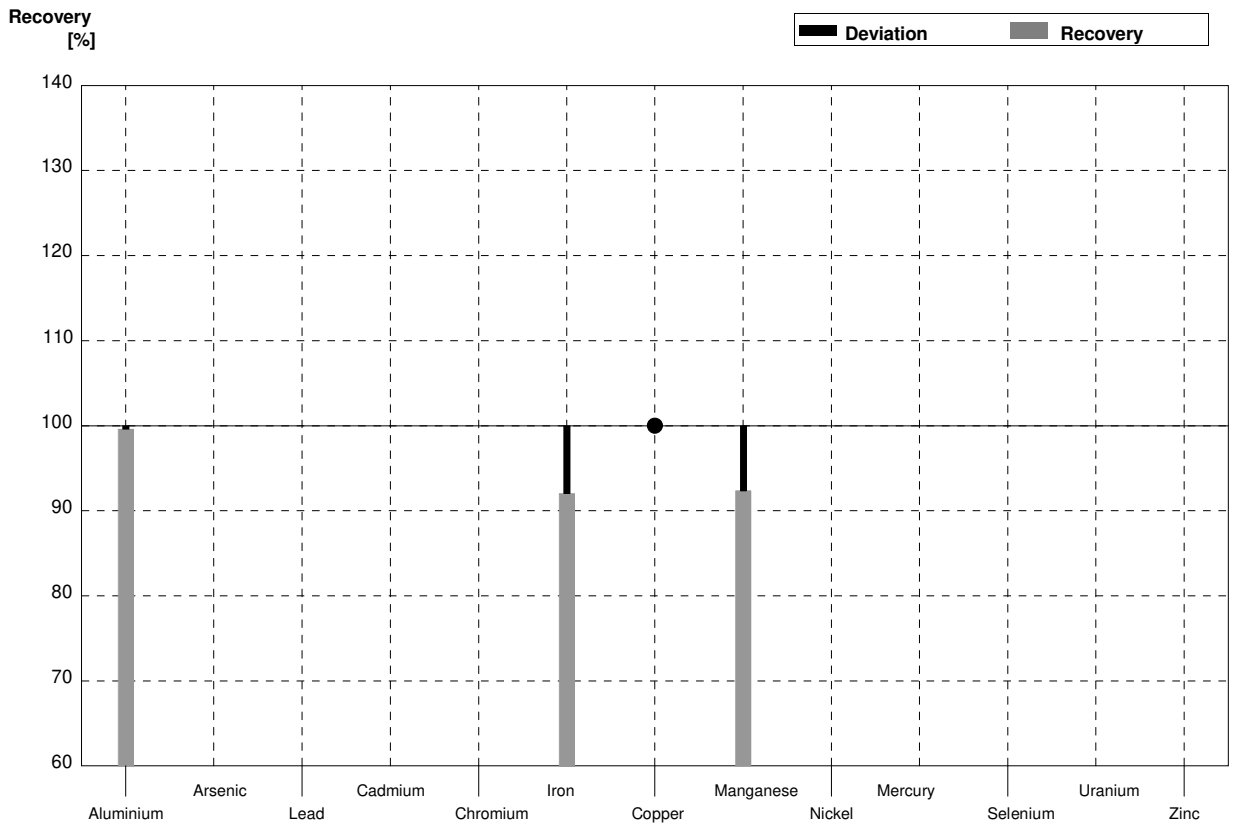
Sample M168B
Laboratory W

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	55,4		µg/l	110%
Arsenic	5,73	0,04	5,99		µg/l	105%
Lead	2,91	0,02	2,60		µg/l	89%
Cadmium	1,567	0,013	1,45		µg/l	93%
Chromium	9,78	0,08	10,35		µg/l	106%
Iron	17,54	0,18	19,78		µg/l	113%
Copper	1,41	0,03	1,32		µg/l	94%
Manganese	37,05	0,18	38,0		µg/l	103%
Nickel	5,14	0,04	5,1		µg/l	99%
Mercury	1,379	0,018	1,13		µg/l	82%
Selenium	2,83	0,02	2,55		µg/l	90%
Uranium	2,109	0,018	1,94		µg/l	92%
Zinc	50,0	2,7	43,5		µg/l	87%



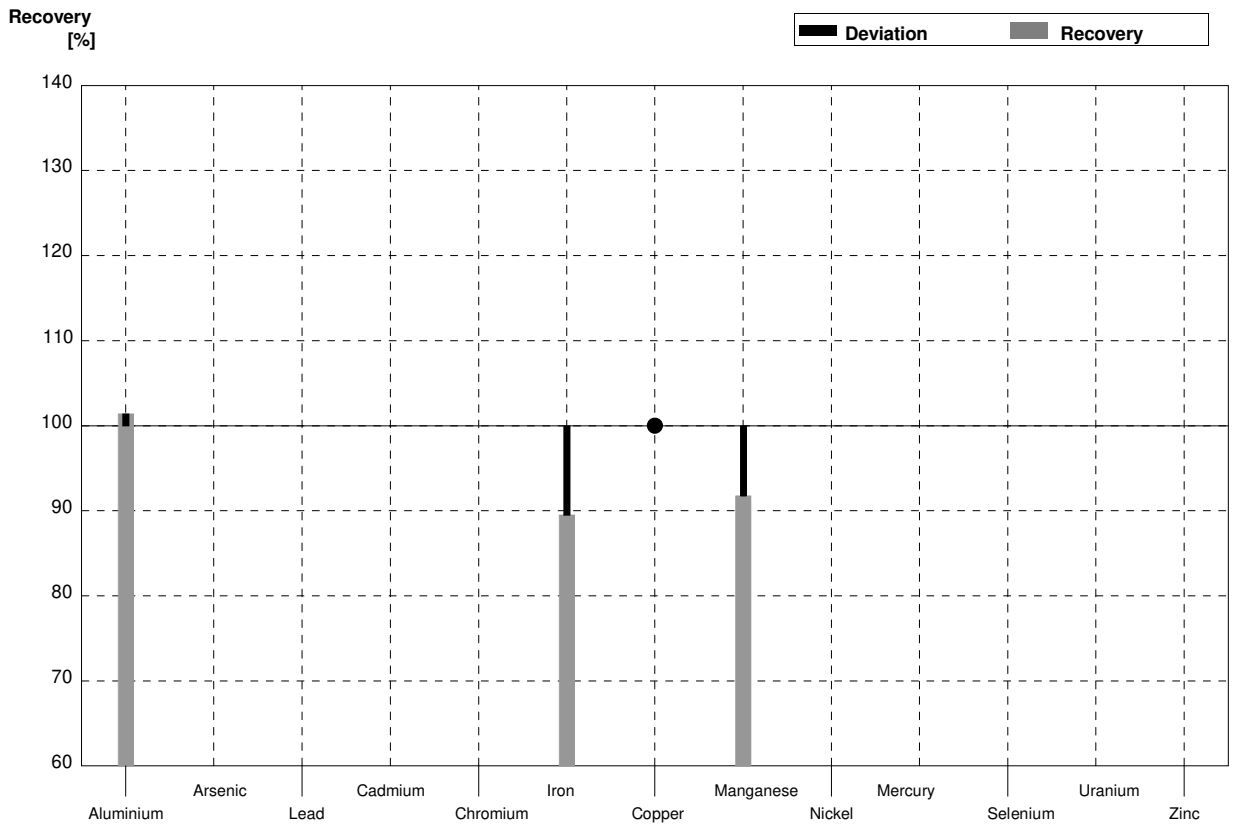
Sample M168A
Laboratory X

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	26,1	4,4	µg/l	100%
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3	66	12	µg/l	92%
Copper	4,60	0,04	<10		µg/l	•
Manganese	27,82	0,15	25,7	4,7	µg/l	92%
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



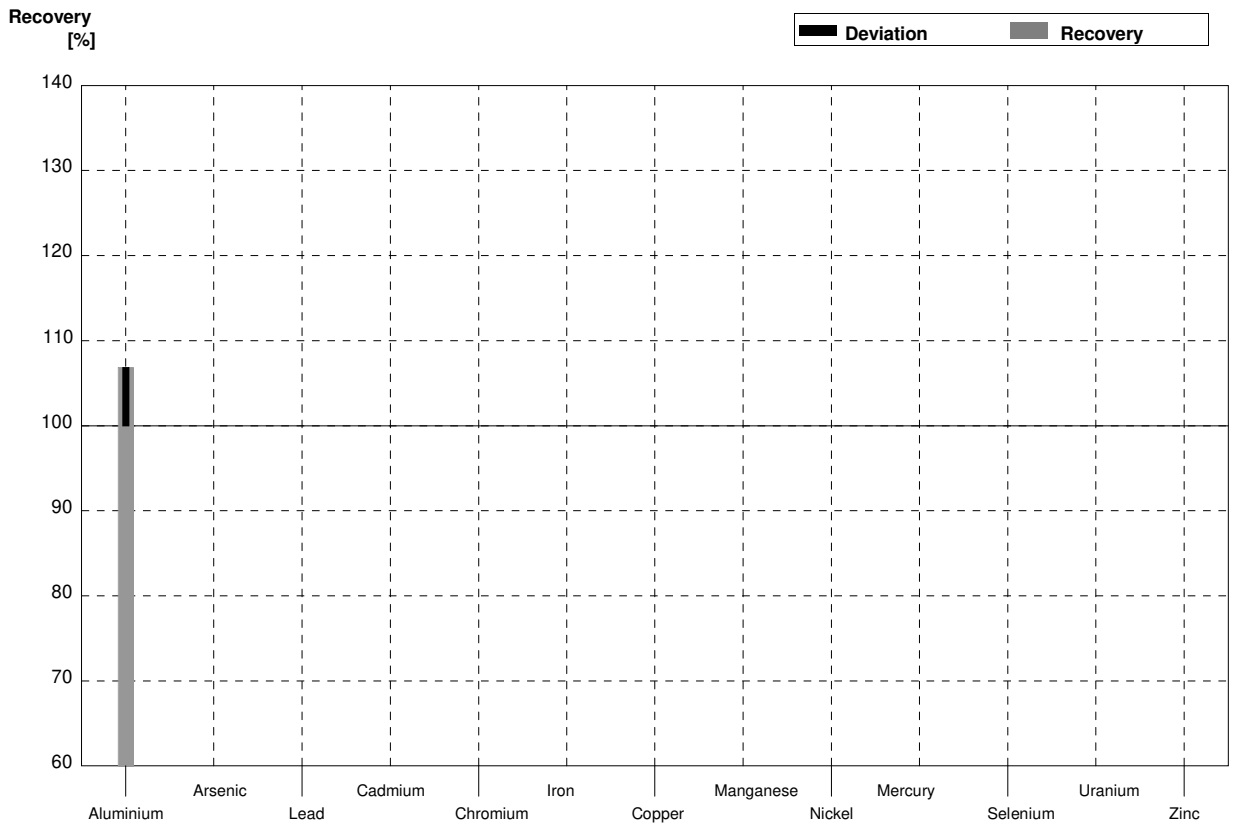
Sample M168B
Laboratory X

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	51	9	µg/l	101%
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18	15,7	2,8	µg/l	90%
Copper	1,41	0,03	<10		µg/l	•
Manganese	37,05	0,18	34,0	6,1	µg/l	92%
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



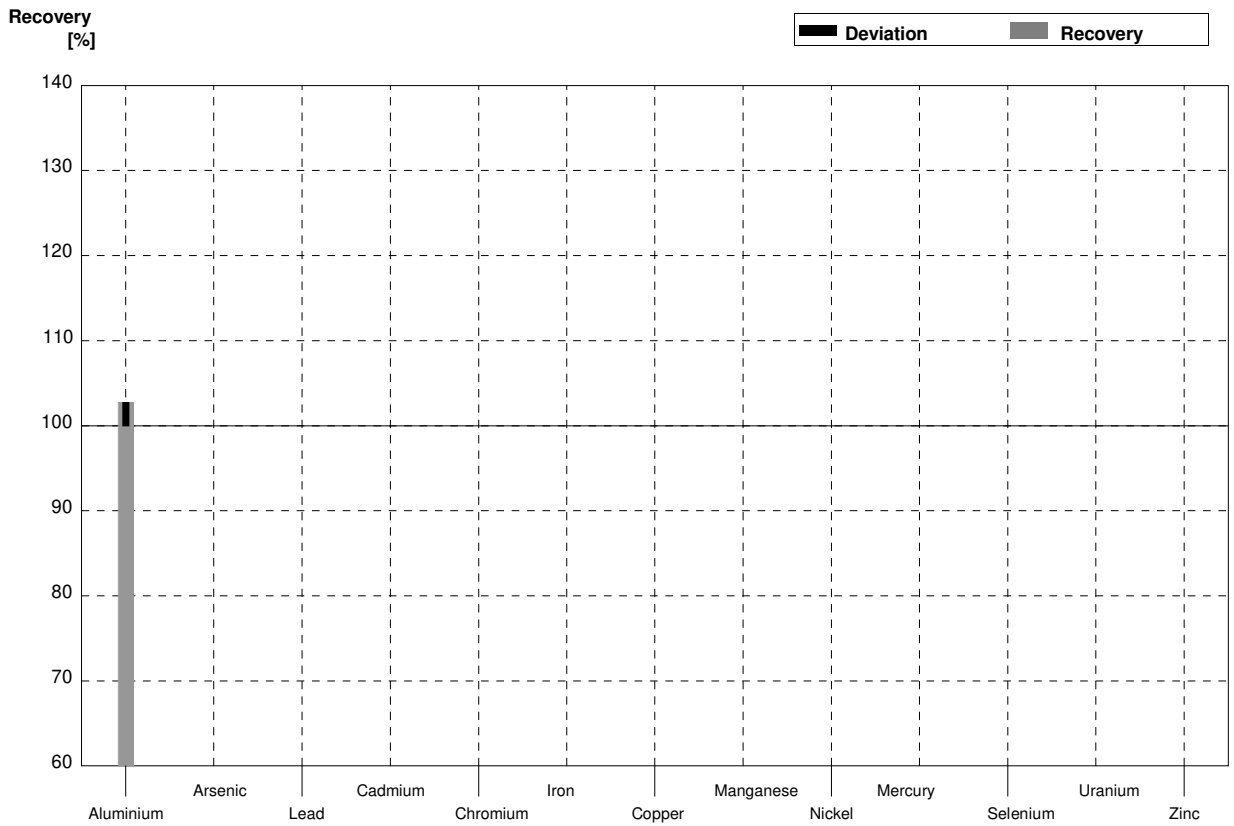
Sample M168A
Laboratory Y

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	28,0	1,50	µg/l	107%
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3			µg/l	
Copper	4,60	0,04			µg/l	
Manganese	27,82	0,15			µg/l	
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



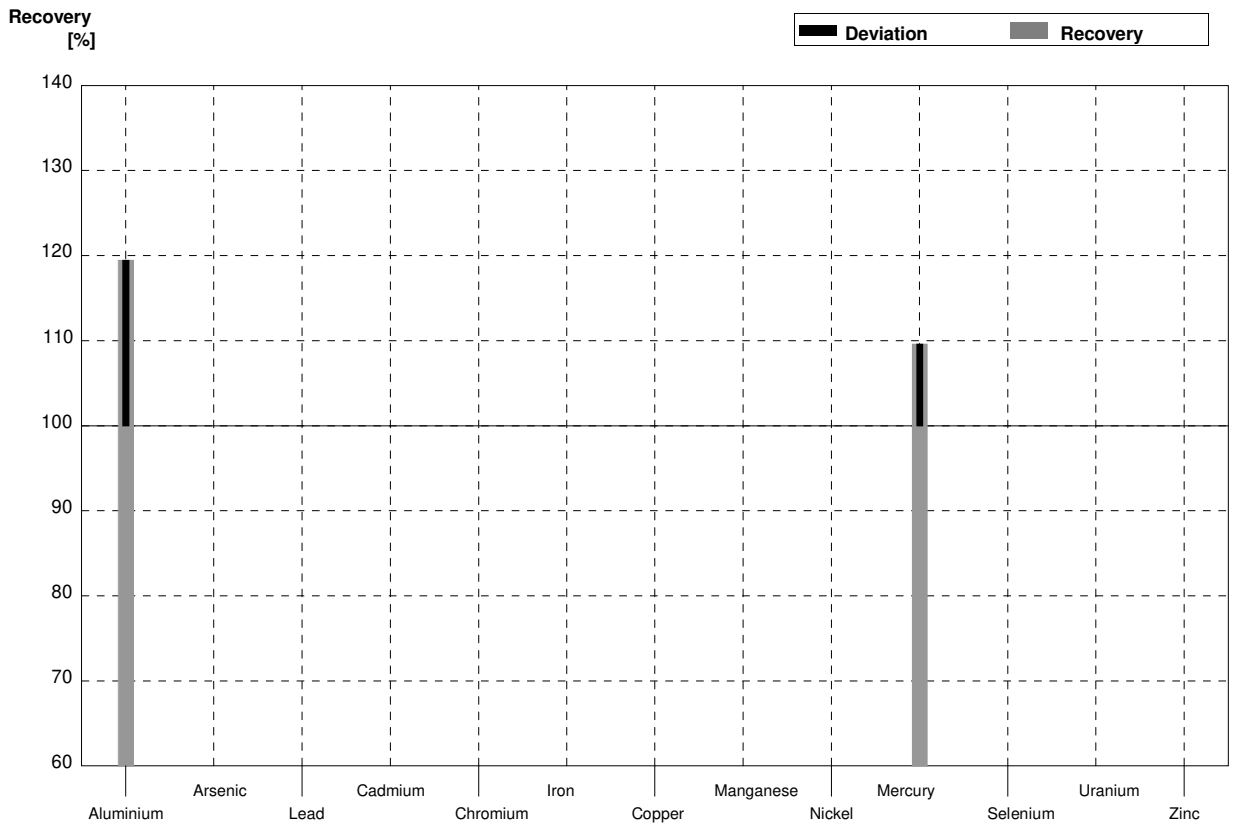
Sample M168B
Laboratory Y

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	51,7	2,78	µg/l	103%
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18			µg/l	
Copper	1,41	0,03			µg/l	
Manganese	37,05	0,18			µg/l	
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



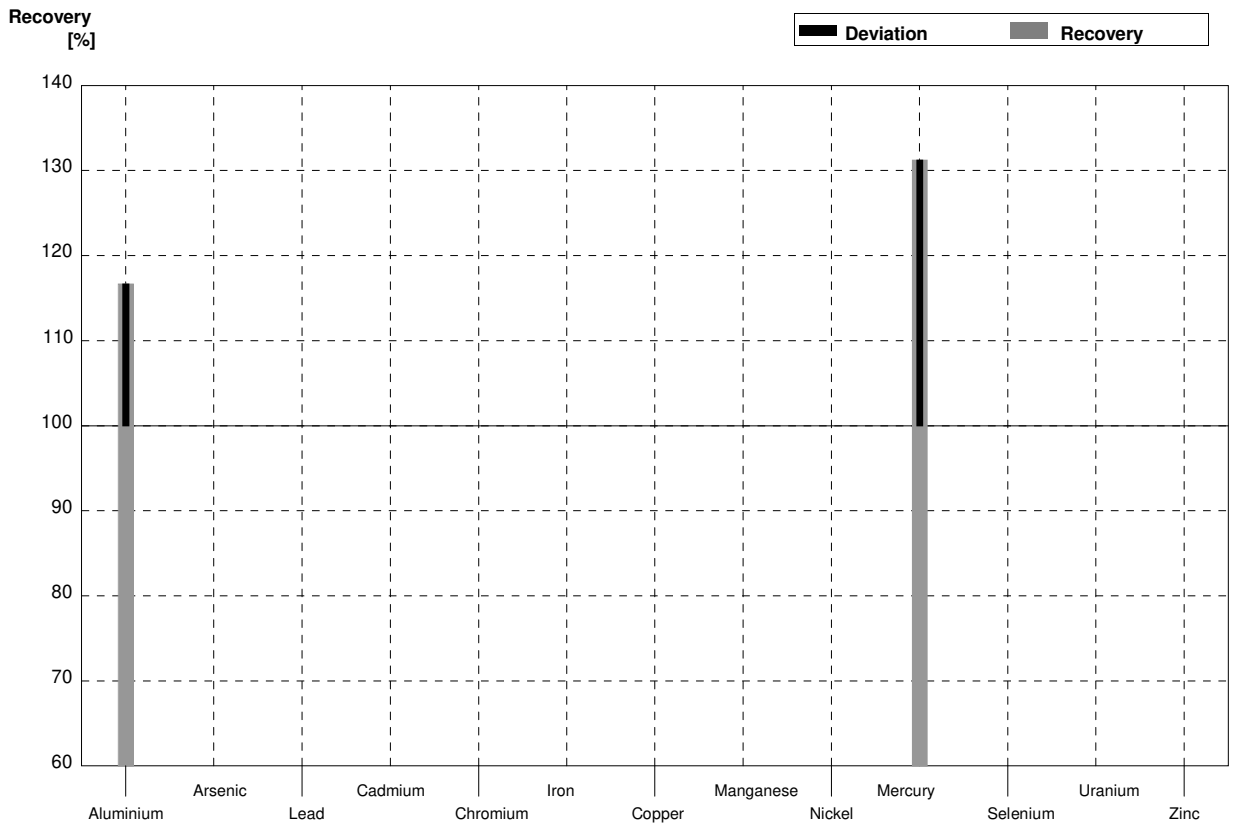
Sample M168A
Laboratory Z

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	31,3	6,3	µg/l	119%
Arsenic	1,552	0,014			µg/l	
Lead	6,85	0,05			µg/l	
Cadmium	0,1031	0,0019			µg/l	
Chromium	2,89	0,03			µg/l	
Iron	71,7	0,3			µg/l	
Copper	4,60	0,04			µg/l	
Manganese	27,82	0,15			µg/l	
Nickel	5,42	0,05			µg/l	
Mercury	2,655	0,018	2,91	0,88	µg/l	110%
Selenium	3,51	0,03			µg/l	
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7			µg/l	



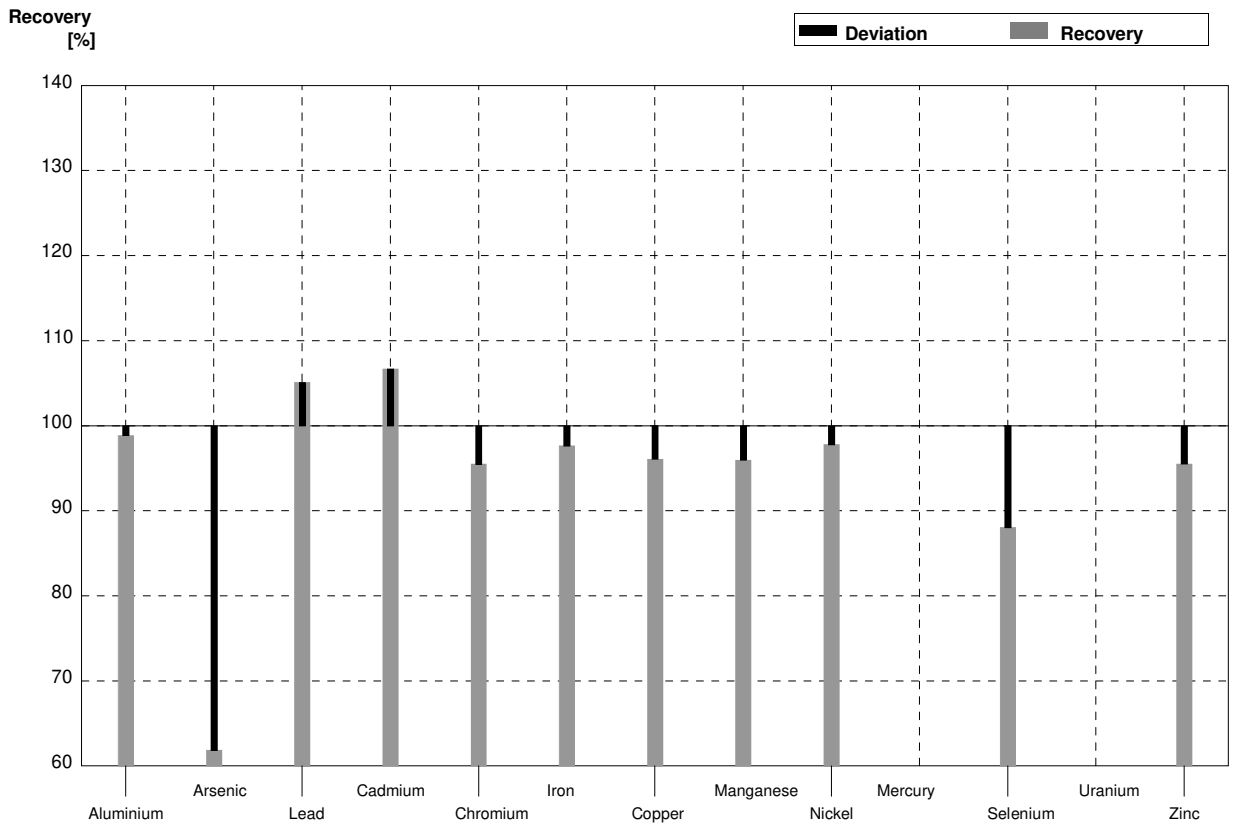
Sample M168B
Laboratory Z

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	58,7	11,7	µg/l	117%
Arsenic	5,73	0,04			µg/l	
Lead	2,91	0,02			µg/l	
Cadmium	1,567	0,013			µg/l	
Chromium	9,78	0,08			µg/l	
Iron	17,54	0,18			µg/l	
Copper	1,41	0,03			µg/l	
Manganese	37,05	0,18			µg/l	
Nickel	5,14	0,04			µg/l	
Mercury	1,379	0,018	1,81	0,54	µg/l	131%
Selenium	2,83	0,02			µg/l	
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7			µg/l	



Sample M168A
Laboratory AA

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	26,2	0,4	25,9	3,9	µg/l	99%
Arsenic	1,552	0,014	0,96	0,14	µg/l	62%
Lead	6,85	0,05	7,2	1,1	µg/l	105%
Cadmium	0,1031	0,0019	0,110	0,017	µg/l	107%
Chromium	2,89	0,03	2,76	0,41	µg/l	96%
Iron	71,7	0,3	70	11	µg/l	98%
Copper	4,60	0,04	4,42	0,66	µg/l	96%
Manganese	27,82	0,15	26,7	4,0	µg/l	96%
Nickel	5,42	0,05	5,3	0,8	µg/l	98%
Mercury	2,655	0,018			µg/l	
Selenium	3,51	0,03	3,09	0,46	µg/l	88%
Uranium	0,455	0,006			µg/l	
Zinc	22,3	2,7	21,3	3,2	µg/l	96%



Sample M168B
Laboratory AA

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Aluminium	50,3	0,5	58	9	µg/l	115%
Arsenic	5,73	0,04	5,2	0,8	µg/l	91%
Lead	2,91	0,02	3,00	0,45	µg/l	103%
Cadmium	1,567	0,013	1,61	0,24	µg/l	103%
Chromium	9,78	0,08	10,0	1,5	µg/l	102%
Iron	17,54	0,18	16,4	2,5	µg/l	94%
Copper	1,41	0,03	1,53	0,23	µg/l	109%
Manganese	37,05	0,18	39,1	5,9	µg/l	106%
Nickel	5,14	0,04	5,2	0,8	µg/l	101%
Mercury	1,379	0,018			µg/l	
Selenium	2,83	0,02	2,39	0,36	µg/l	84%
Uranium	2,109	0,018			µg/l	
Zinc	50,0	2,7	51	8	µg/l	102%

