Proficiency Testing Scheme für die Wasseranalytik - Realproben

M180 Metalle und Spurenelemente

Proficiency Testing Scheme for Water Analysis - natural water samples

M180 Metals and trace elements

BERICHT / REPORT

Probenversand / Sample dispatch: 03.02.2026

Ausgabe/Edition 1 – 12.03.2026

Dieser Report umfasst 294 Seiten.
This report comprises 294 pages.

Durchführung gemäß Verfahren VA_1003_PT_CA (2024-10-15).

In accordance with the procedure VA_1003_PT_CA (2024-10-15).

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D1. Beschreibung des Ringversuchs

D1.1. Ausgestaltung und Durchführung

- Anzahl der Anmeldungen: 25
- Anzahl der übermittelten Datensätze: 25
- Probenversand: 03.02.2026
- Einsendeschluss der Daten: 03.03.2026

Die Ergebnisabgabe erfolgte auf elektronischem Weg mittels passwortgeschützter Online-Dateneingabe.

Beim Abschluss der Dateneingabe bestätigten die Teilnehmenden die vollständige und korrekte Eingabe aller Daten und die Freigabe der Ergebnisse zur Auswertung.

Zur Anonymisierung der Ergebnisse wurde jedem Labor willkürlich ein Laborcode zugeteilt.

D1.2. Beschreibung der Prüfgegenstände

Die Probenahme von Grundwasser und Oberflächenwasser erfolgte am 28.01.2026.

Das Probenmaterial umfasste:

- 1 Probe Grundwasser (M180 A)
- 1 Probe Oberflächenwasser (M180 B)

Alle Proben wurden über 0,45 µm Membranfilter filtriert und anschließend bis zur weiteren Verarbeitung gekühlt gelagert (4 +/- 3°C). Die o.a. Proben wurden zusätzlich mit einzelnen Substanzen dotiert.

Das Abfüllen der Proben erfolgte unter ständigem Rühren (Rührkessel). Die Proben wurden mit HNO_3 (2,5 ml c. HNO_3 auf 250 ml) bzw. HCl (1 ml c. HCl auf 100 ml; nur Abfüllung für Parameter Hg) stabilisiert.

Die homogenen Prüfgegenstände wurden am 03.02.2026 verschickt.

Jedes teilnehmende Labor erhielt:

- 2 Proben zu je ca. 350 ml, abgefüllt in je 1 x 250 ml LDPE-Flasche und 1 x 100 ml LDPE-Flasche (für Hg)

D1.3. Anweisungen für die Teilnehmenden

Aus Stabilitätsgründen wurde empfohlen bis spätestens 11.02.2026 mit den Analysen zu beginnen.

Den Teilnehmenden stand die Wahl der Analysenmethode bzw. der verwendeten Norm frei, welche mit ihrem Routineverfahren übereinstimmen sollte. Eine Übersicht der angewendeten Methoden findet sich unter E9.

D1.4. Kontrollanalytik zur Bewertung der Homogenität

Im Zuge der Abfüllung wurden zu willkürlichen Zeitpunkten mehrere Aliquote pro Probe zur Kontrollanalytik entnommen.
Es wurden für die A- bzw. B-Probe jeweils n=5 Kontrollproben sowie n=1 undotierte Realprobe dem Labor zur Analyse übergeben. Alle Parameter wurden in der Prüfstelle am Umweltbundesamt (Prüfstelle für Umwelt-, GVO- & Treibstoffanalytik) zeitnah zum Probenversand analysiert.

Im Zuge der Auswertung wurde die relative Standardabweichung zwischen den Kontrollprobenabfüllungen bewertet und mit der Vergleichsstandardabweichung beim aktuellen Ringversuch verglichen.

Die Ergebnisse der Kontrollanalytik sind in der parameterorientieren Auswertung (E7) in Form von Mittelwerten ± Messunsicherheit als Kontrollwert (control test value) ± U gelistet (jeweils angegeben als erweiterte Messunsicherheit, k=2).

D1.5. Trendtest zur Bewertung der Stabilität

Die Bewertung der Stabilität der Prüfgegenstände (Realproben) erfolgte auf Basis der Datenstatistik aus den vergangenen Runden für Realproben im Zeitraum 2013 bis 2025.

Um die ausreichende Stabilität der Prüfgegenstände der aktuellen Eignungsprüfungsrunde bis zum Abgabetermin zu überprüfen, wurde die Darstellung der Ergebnisse der Teilnehmenden nach Analysendatum ausgewertet und auf systematische Trends geprüft (unauffällig).

Durch Darstellung der Ergebnisse der Teilnehmenden nach Abfüllreihenfolge wurde auf das Vorliegen möglicher systematischer Trends der Ergebnisse geprüft (unauffällig).

Aufgrund der bisherigen Erfahrungen und aufgrund der Bewertungsgrundlagen der aktuellen Eignungsprüfungsrunde gilt die Stabilität der Prüfgegenstände im empfohlenen Zeitraum für die Analyse bis zum Abgabeschluss als gewährleistet.

D1.6. Ermittlung des zugewiesenen Wertes

Die Ergebnisse der Analysen mussten spätestens bis zum 03.03.2026 beim Veranstalter vorliegen. Später eingehende Werte wurden nicht berücksichtigt.

Im Zuge der Plausibilitätsprüfung der Daten (z.B. Check korrekte Einheiten, Messunsicherheitsangabe, …) wurden die Teilnehmenden mit auffälligen Ergebnissen zum erneuten Datencheck der Eingabe und um Rückmeldung binnen 24 Stunden aufgefordert.

Nach Abschluss der Plausibilitätsprüfung, wurde der Ausreißertest nach Hampel durchgeführt und die Ausreißer ermittelt. Die von diesem Test auffällig eingestuften Werte wurden in der Auswertung gekennzeichnet („H"). In begründeten Fällen, z.B. wenn der Ausreißertest nach Hampel nicht anwendbar ist (z.B. Ergebnisse liegen sehr eng beieinander oder überwiegend gleicher Zahlenwert bzw. bei wenig abgegebenen Daten mit sehr hoher Streuung), kann eine Ausreißereliminierung nach weiteren Kriterien erfolgen (z.B. Dean- und Dixon Test bzw. manuelle Ausreißerdefinition aufgrund Expert:innenbefund). Diese Vorgangsweise wird nach Anwendung unter Punkt D4 des Berichts dokumentiert.

Die weitere Auswertung erfolgte gemäß ISO 5725-2. Eine statistische Auswertung der Ringversuchsdaten erfolgte erst ab zumindest n=6 gültigen, nummerischen Ergebnissen pro Parameter. Ergebnisse kleiner Bestimmungs- oder Nachweisgrenze wurden bei den Berechnungen nicht berücksichtigt.

Der zugewiesene Wert wird im Normalfall jeweils als der ausreißerbereinigte Mittelwert über alle übermittelten Ergebnisse gebildet. Die Prüfung auf Rückführbarkeit des zugewiesenen Wertes erfolgt durch Vergleich mit dem Mittelwert des Kontrolllabores.

Bei sehr hohen Streuungen der Ergebnisse der Teilnehmenden von über 50 % oder bei mangelhafter Rückführbarkeit der statistischen Kenndaten aus den ausreißerbereinigten Ergebnissen der Teilnehmenden auf den Mittelwert des Kontrolllabores bzw. einer zu geringen Anzahl an ausreißerbereinigten Ergebnissen über die Gruppe der akkreditierten Labore, kann die Situation auftreten, dass kein zugewiesener Wert für den aktuellen Ringversuch festgelegt werden kann und daher keine Bewertung der Ergebnisse der Teilnehmenden für diesen Parameter möglich ist.

Ein entsprechender Hinweis wird im Bericht unter E7 bei der informativen Auswertung angebracht. Im Rahmen der internen Qualitätssicherung der Teilnehmenden kann ein Vergleich mit den Ergebnissen des Kontrolllabors durchgeführt werden. Diese Vorgehensweise wird bei Anwendung jeweils parameter- und probenbezogen unter Punkt D4 des Berichts dokumentiert.

D2. Kriterien der Leistungsbewertung

D2.1. Leistungskriterium z-Score

Als Basis zur Berechnung der Wiederfindungsraten sowie der z-Scores wurde der ausreißerbereinigte Mittelwert über alle übermittelten Ergebnisse herangezogen.

Die Ermittlung der z-Scores erfolgte gemäß nachfolgender Formel:

$$z - score = \frac{x_i - \overline{X}}{Kriterium}$$

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert
	Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Ergebnisse der Teilnehmenden. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
Kriterium	Vergleichsstandardabweichung berechnet aus den Statistiken für reale Wasserproben der vorangegangenen Runden im Zeitraum 2013 bis 2025 (RSDpooled). In begründeten Fällen (z.B. Ergebnisse Realproben nahe an Mindestbestimmungsgrenze oder regulatorischer Vorgaben) erfolgt die Festlegung nach Expertenbefund und die Vorgangsweise wird unter Punkt D4 des Berichts beschrieben.

D2.2. Leistungskriterium E_n-Score

Für die realen Wasserproben erfolgen zusätzliche Bewertungen unter Einbeziehung der erweiterten Messunsicherheiten der Teilnehmenden und der erweiterten Messunsicherheit des zugewiesenen Wertes, gemäß E_n-Score. Diese Auswertungen werden für die Teilnehmenden im Bericht unter Punkt E8, jeweils im Anschluss an die z-Score Auswertung dargestellt.

Die Ermittlung der E_n-Scores erfolgte gemäß nachfolgender Formel:

$$E_n - score = \frac{x_i - \overline{X}}{\sqrt{U(x_i)^2 + U(\overline{X})^2}}$$

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert
	Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der

Ergebnisse der Teilnehmenden. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.

$U(x_i)$ erweiterte Messunsicherheit des Messergebnisses (Ergebnisse der Teilnehmenden), k=2

$U(\bar{X})$ erweiterte Messunsicherheit des zugewiesenen Wertes, k=2

D2.3. Leistungsbewertung z-Score und E_n-Score

Interpretation der z-Scores:

- |z-Score| ≤ 2.0   Ergebnis gut
- 2.0 < |z-Score| < 3.0   Ergebnis fragwürdig
- |z-Score| ≥ 3.0   Ergebnis nicht zufriedenstellend

Hinweis: Bei der Bewertung mittels z-Score wird die Messunsicherheit der Teilnehmenden nicht mitberücksichtigt. Der Vergleich der Abweichung zum zugewiesenen Wert erfolgt über das Kriterium.

Interpretation der E_n-Scores:

- |E_n-Score| ≤ 1.0   zufriedenstellende Leistung
- |E_n-Score| > 1.0   nicht zufriedenstellende Leistung

Hinweis: Bei der Bewertung mittels E_n-Scores erfolgt die Berücksichtigung der erweiterten Messunsicherheiten der Teilnehmenden und des zugewiesenen Wertes.

|E_n-Score| > 1.0 können darauf hinweisen, dass die Unsicherheitsschätzungen überprüft oder ein Messproblem korrigiert werden muss.

D3.   Darstellung und Interpretation der Messergebnisse

In der parameterorientierten Auswertung ist eine tabellarische Übersicht mit den Messergebnissen inklusive der Unsicherheit (± U), der Wiederfindung zum zugewiesenen Wert und dem berechneten z-Score dargestellt. Weiterhin werden unter Anmerkungen die Ausreißer gekennzeichnet. Die in der Tabelle angeführten Ergebnisse werden auch grafisch dargestellt.

In der labororientierten Auswertung werden pro Labor in anonymisierter Form die Ergebnisse der einzelnen Labore als Messergebnis ± U sowie die Wiederfindungen und die ermittelten z-Scores bezugnehmend auf das Kriterium dargestellt. Weiters werden die E_n-Scores unter Berücksichtigung der erweiterten Unsicherheiten in unabhängigen Tabellen

ausgegeben. Die labororientierten Auswertungen enthalten jeweils die Bewertungsgrundlagen wie zugewiesener Wert samt erweiterter Messunsicherheit sowie das Kriterium.

Eine Erläuterung zu den Tabellen und Grafiken kann Punkt D5 entnommen werden.

D4.   Anmerkungen zur Auswertung

Wie unter Punkt D2 ersichtlich, können die z-Scores auch unter Einbeziehung der Vergleichsstandardabweichung der ausreißerbereinigten Ergebnisse der Teilnehmenden des aktuellen Ringversuchs berechnet werden. Das kann zur Folge haben, dass es bei Parametern mit hoher Ergebnisstreuung dazu kommen kann, dass der Bereich z-Score - 2 bis z-Score + 2 einen ungewöhnlich hohen Wiederfindungsbereich abdeckt. Umgekehrt führt eine sehr geringe Streuung der Ergebnisse der Teilnehmenden dazu, dass z-Score - 2 bis z-Score + 2 einen ungewöhnlich kleinen Wiederfindungsbereich abdeckt.

Die Wiederfindungsrate wird unabhängig von der Streuung der Ergebnisse, als prozentuelle Abweichung vom zugewiesenen Wert berechnet und sollte bei der Bewertung von Ergebnissen im Rahmen des internen Qualitätsmanagementsystems der teilnehmenden Labore berücksichtigt werden.

Als Ergebnis einer Langzeitauswertung von Eignungsprüfungen (Realproben) von 2013 bis 2025 wurden Kriterien (RSDpool) zur Ergebnisbewertung berechnet. Diese wurden im Zuge der Auswertung den relativen Vergleichsstandardabweichungen (vR) des aktuellen Ringversuchs gegenübergestellt.

Parameter Chrom, Uran bei Probe M180 A:
Für diese Parameter wurden relative Vergleichsstandardabweichungen (vR) der aktuellen Eignungsprüfungsrunde für die Bewertung gewählt.

Bei allen anderen Parametern erfolgte die Berechnung der Scores nach D2.

D5.   Erläuterung zu Tabellen und Grafiken

D5.1.   Angaben und Abkürzungen in Tabellen

Parameter	Allgemeine Bezeichnung des Analysenparameters
Probe	Bezeichnung der übermittelten Probe
Einheit	Vorgegebene Einheit für Messwert und Ergebnisunsicherheit (z.B. µg/l)

Zugewiesener Wert	Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen)
U (k=2)	erweiterte Unsicherheit (k=2) des zugewiesenen Wertes, (angegeben auf 3 signifikante Stellen)
Kriterium	Vorgabewert zur Ermittlung des z-Scores in der angegebenen Einheit (angegeben auf 3 signifikante Stellen)
Kriterium [%]	Vorgabewert zur Ermittlung des z-Scores in % des zugewiesenen Wertes (angegeben auf 2 signifikante Stellen)
Mittelwert	Ausreißerbereinigter Mittelwert über die Ergebnisse der Teilnehmenden (angegeben auf 3 signifikante Stellen)
VB (99%)	99 % Vertrauensbereich (angegeben auf 3 signifikante Stellen)
Minimum	Minimales abgegebenes Messergebnis, ausreißerbereinigt (angegeben auf 3 signifikante Stellen)
Maximum	Maximales abgegebenes Messergebnis, ausreißerbereinigt (angegeben auf 3 signifikante Stellen)
sR	Vergleichsstandardabweichung, berechnet aus den ausreißerbereinigten Ergebnissen der Teilnehmenden des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
vR	relative Vergleichsstandardabweichung in %, berechnet aus den ausreißerbereinigten Ergebnissen der Teilnehmenden des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 2 signifikante Stellen)
Kontrollwert ± U (k=2)	Mittelwert der Kontrollmessungen des Veranstalters ± erweiterte Ergebnisunsicherheit des Kontrollwertes (jeweils angegeben auf 3 signifikante Stellen)
Laborcode	anonymisierte, eindeutige Kennung des teilnehmenden Labors im jeweiligen Ringversuch
Messwert	einzelne(r) Messwert(e) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
Messergebnis	Für die Bewertung herangezogenes Ergebnis lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt). Bei Eignungsprüfungsrunden mit Vorgabe von unabhängigen Mehrfachbestimmungen, entspricht dies dem berechneten Mittelwert aus den einzelnen Messwerten der Teilnehmenden.
± U	kombinierte Messunsicherheit ohne Erweiterungsfaktor (k=1) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
BG	Bestimmungsgrenze
NG	Nachweisgrenze

WF	Wiederfindungsrate in %, bezogen auf den zugewiesenen Wert (angegeben auf 3 signifikante Stellen, dargestellt maximal 1 Nachkommastelle)
MW	Mittelwert
z-Score	Abweichung des Messergebnisses zum zugewiesenen Wert, ausgedrückt als Vielfaches des Kriteriums (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen)
E_n-Score	Abweichung des Messergebnisses zum zugewiesenen Wert, ausgedrückt als Vielfaches der kombinierten Messunsicherheiten, bestehend aus erweiterter Unsicherheit des zugewiesenen Wertes und der erweiterten Unsicherheit der Messergebnisse der Teilnehmenden (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen). Beim E_n-Score erfolgt die Berücksichtigung der Messunsicherheit der Teilnehmenden.
-	Keine Daten übermittelt bzw. keine Berechnung möglich
Anmerkungen	Anmerkungen zum jeweiligen Messergebnis (z.B. H, FN, FP)
H	Ausreißer nach dem Hampel-Test
FN	Falsch negativ – Messergebnis kleiner Bestimmungs- bzw. Nachweisgrenze dessen Betrag die Bedingungen eines Ausreißers nach dem Hampeltest erfüllt.
FP	Falsch positiv – Falls aufgrund des geringen Analytgehalts kein zugewiesener Wert ermittelt werden kann (n < 6), wird der Median der Beträge der übermittelten Nachweis- bzw. Bestimmungsgrenzen ermittelt. Als falsch positiv wird ein Messergebnis bewertet, welches diesen Median um mehr als 100 % übersteigt.
Standardabweichung	Vergleichsstandardabweichung berechnet aus den Ergebnissen der Teilnehmenden des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
rel. Standardabweichung	relative Vergleichsstandardabweichung in %, berechnet aus den Ergebnissen der Teilnehmenden des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 3 signifikante Stellen)
n	Anzahl der Messergebnisse
*	Kennzeichnung für Hinweise zur Erläuterung

D5.2. Graphische Darstellung der Ergebnisse

Nachfolgend wird die graphische Darstellung anhand von kommentierten Beispieldiagrammen erläutert.

Beispieldiagramm: Messwerte

Ergebnis < BG bzw. < NG, Basis des Dreiecks entspricht Wert der BG bzw. NG

Konfidenzintervall (95 %) des zugewiesenen Werts

Wert außerhalb des dargestellten Bereichs

zugewiesener Wert (Sollwert)

Limit of tolerance: |z-Score| = 2

Control limit: |z-Score| = 3

Messergebnis ± Unsicherheit

Ausreißer nach Hampel-Test ± Unsicherheit

Methodenangaben werden in unterschiedlichen Farben dargestellt.

Beispieldiagramm: Wiederfindung zum zugewiesenen Wert
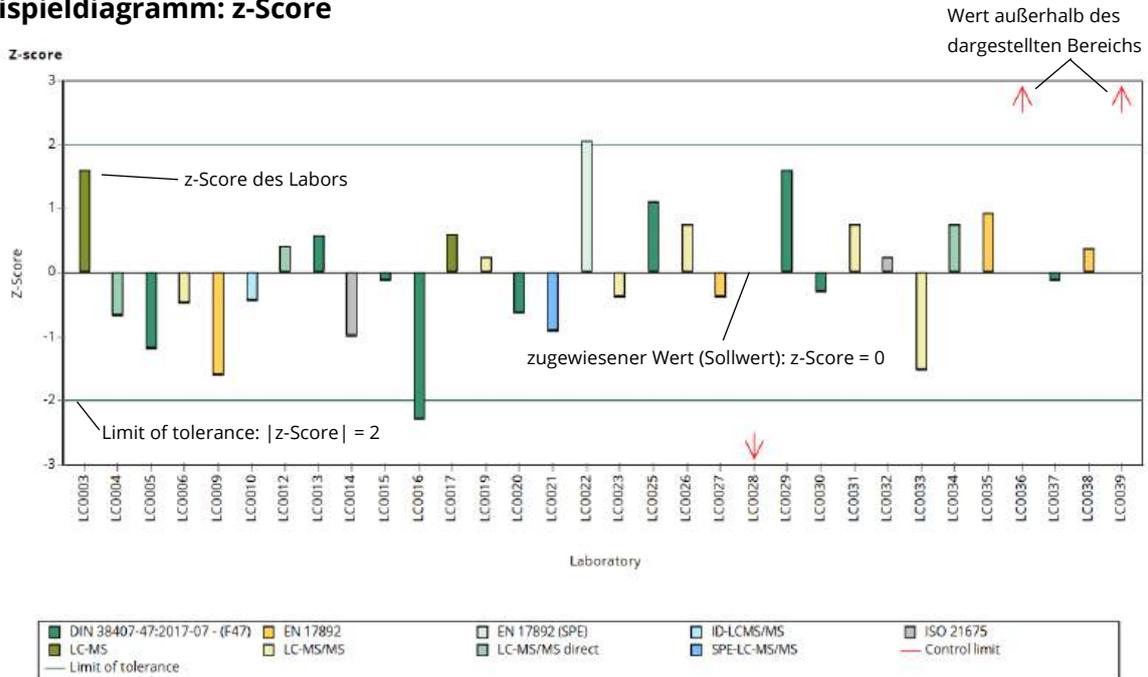
zugewiesener Wert (Sollwert) = 100 % WF

Konfidenzintervall (95 %) des zugewiesenen Werts

Wert außerhalb des dargestellten Bereichs

Wiederfindungsrate des Labors (%)

Limit of tolerance: |z-Score| = 2

Control limit: |z-Score| = 3

Ausreißer nach Hampel-Test

Methodenangaben werden in unterschiedlichen Farben dargestellt.

Beispieldiagramm: z-Score

Methodenangaben werden in unterschiedlichen Farben dargestellt.

Beispieldiagramm: z-Score (laborientierte Auswertung)
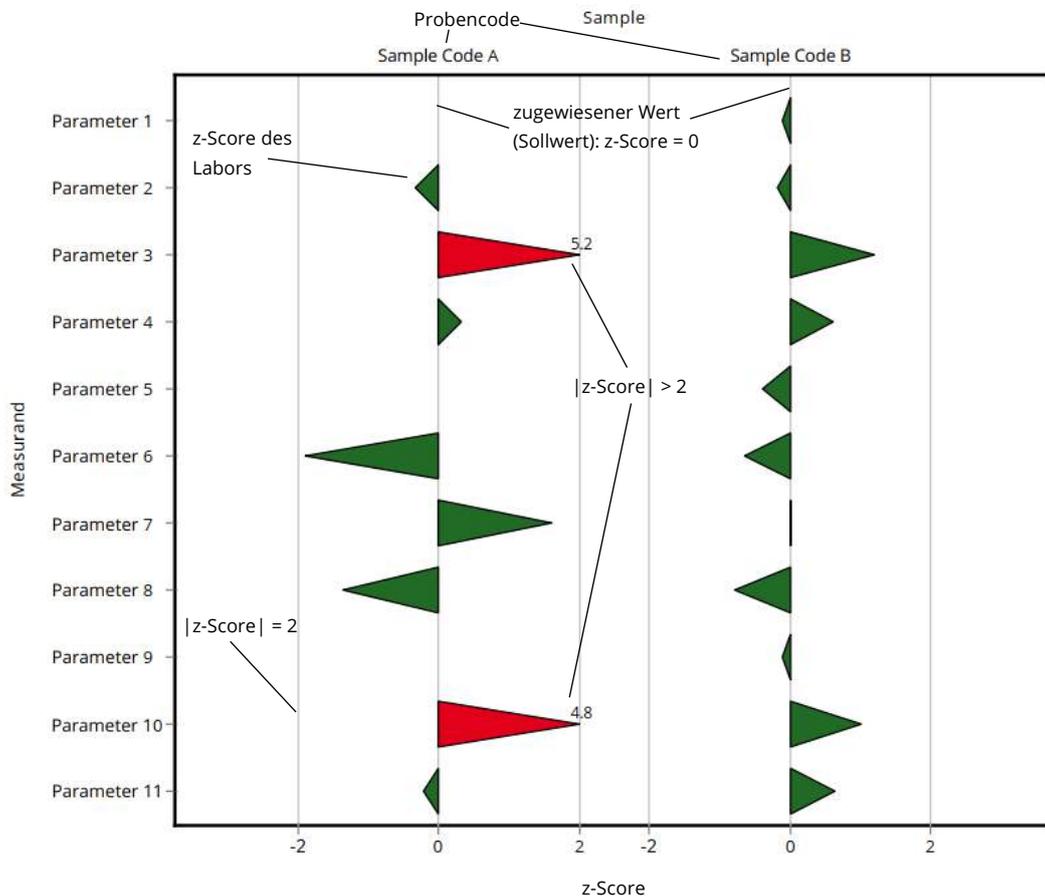
Beispieldiagramm: En-Score (labororientierte Auswertung)
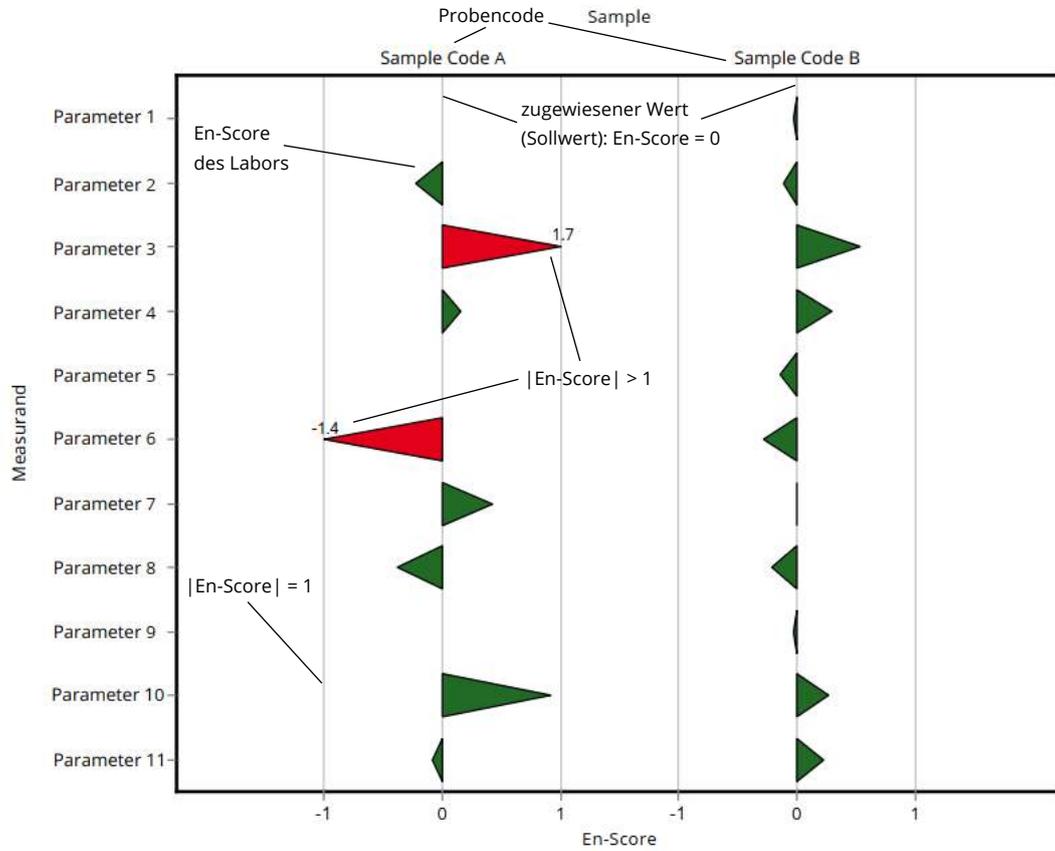
D6. Zusammenfassung
D6.1. Tabelle der zugewiesenen Werte

Parameter	Probe	Einheit	zugewiesener Wert ±	U (k=2)	Kriterium	Kriterium [%]
Aluminium	M180 A	µg/l	30.3 ±	1.02	3.03	10
	M180 B	µg/l	618 ±	19.3	61.8	10
Arsen	M180 A	µg/l	5.19 ±	0.158	0.675	13
	M180 B	µg/l	87.5 ±	1.5	11.4	13
Cadmium	M180 A	µg/l	0.644 ±	0.0142	0.0644	10
	M180 B	µg/l	6.24 ±	0.127	0.624	10
Chrom	M180 A	µg/l	2.27 ±	0.0977	0.213	9.4
	M180 B	µg/l	28.2 ±	0.401	2.39	8.5
Kupfer	M180 A	µg/l	12.5 ±	0.346	1.13	9
	M180 B	µg/l	83.1 ±	1.3	7.48	9
Eisen	M180 A	µg/l	66.6 ±	1.43	7.33	11
	M180 B	µg/l	478 ±	9.93	52.6	11
Blei	M180 A	µg/l	2.16 ±	0.072	0.216	10
	M180 B	µg/l	49.3 ±	0.959	4.93	10
Mangan	M180 A	µg/l	5.53 ±	0.158	0.398	7.2
	M180 B	µg/l	753 ±	13.7	54.2	7.2
Quecksilber	M180 A Hg	µg/l	1.79 ±	0.0433	0.25	14
	M180 B Hg	µg/l	3.13 ±	0.0853	0.438	14
Nickel	M180 A	µg/l	3.91 ±	0.113	0.47	12
	M180 B	µg/l	61 ±	1.26	7.32	12
Selen	M180 A	µg/l	4.41 ±	0.169	0.529	12
	M180 B	µg/l	19.4 ±	0.524	2.33	12
Uran	M180 A	µg/l	1.2 ±	0.0488	0.104	8.6
	M180 B	µg/l	2.13 ±	0.0419	0.14	6.6
Zink	M180 A	µg/l	1150 ±	18.1	103	9
	M180 B	µg/l	767 ±	23.6	69.1	9

D6.2. Zusammenfassung der ausreißerbereinigten Ringversuchsergebnisse

Parameter	Probe	Anzahl Labors für Berechnung	Anzahl Ausreißer Labors	Einheit	Mittelwert	± VB (99%)	Minimum	Maximum	sR	vR [%]
Aluminium	M180 A	19	1	µg/l	30.3 ±	1.52	25.3	34.2	2.21	7.3
	M180 B	19	1	µg/l	618 ±	28.9	546	700	42	6.8
Arsen	M180 A	21	1	µg/l	5.19 ±	0.237	4.43	5.9	0.362	7
	M180 B	22	0	µg/l	87.5 ±	2.25	80	93.4	3.52	4
Cadmium	M180 A	23	1	µg/l	0.644 ±	0.0213	0.585	0.702	0.034	5.3
	M180 B	22	2	µg/l	6.24 ±	0.19	5.63	6.82	0.297	4.8
Chrom	M180 A	19	2	µg/l	2.27 ±	0.147	2.03	2.76	0.213	9.4
	M180 B	21	2	µg/l	28.2 ±	0.601	26.7	29.7	0.918	3.3
Kupfer	M180 A	21	2	µg/l	12.5 ±	0.519	11	14.2	0.793	6.3
	M180 B	22	2	µg/l	83.1 ±	1.96	76.3	87.5	3.06	3.7
Eisen	M180 A	17	5	µg/l	66.6 ±	2.15	59.4	72.2	2.95	4.4
	M180 B	19	3	µg/l	478 ±	14.9	436	517	21.6	4.5
Blei	M180 A	23	1	µg/l	2.16 ±	0.108	1.89	2.54	0.173	8
	M180 B	22	2	µg/l	49.3 ±	1.44	45	53.6	2.25	4.6
Mangan	M180 A	17	1	µg/l	5.53 ±	0.237	5.07	6.3	0.326	5.9
	M180 B	21	1	µg/l	753 ±	20.6	692	816	31.4	4.2
Quecksilber	M180 A Hg	17	3	µg/l	1.79 ±	0.065	1.69	1.99	0.0894	5
	M180 B Hg	18	2	µg/l	3.13 ±	0.128	2.75	3.52	0.181	5.8
Nickel	M180 A	19	2	µg/l	3.91 ±	0.169	3.35	4.27	0.246	6.3
	M180 B	21	1	µg/l	61 ±	1.89	55.1	65.1	2.88	4.7
Selen	M180 A	17	4	µg/l	4.41 ±	0.254	3.87	5.26	0.349	7.9
	M180 B	19	2	µg/l	19.4 ±	0.786	16.8	21.6	1.14	5.9

Parameter	Probe	Anzahl Labors für Berechnung	Anzahl Ausreißer Labors	Einheit	Mittelwert	±	VB (99%)	Minimum	Maximum	sR	vR [%]
Uran	M180 A	18	0	µg/l	1.2	±	0.0732	0.976	1.39	0.104	8.6
	M180 B	19	0	µg/l	2.13	±	0.0628	1.96	2.25	0.0913	4.3
Zink	M180 A	19	4	µg/l	1150	±	27.2	1070	1220	39.5	3.4
	M180 B	23	0	µg/l	767	±	35.3	638	849	56.5	7.4

E1. Description of the proficiency test

E1.1. Design and implementation

- Number of registrations: 25
- Number of submitted data records: 25
- Dispatch of samples: February 03rd, 2026
- Closing date for submission of data: March 03rd, 2026

The results were submitted electronically by a password-protected online data entry. Upon completion of the data entry, the participant confirmed the complete and correct entry of all data and the authorization of the results for evaluation.

To anonymize results, each laboratory was given a laboratory code on a random basis.

E1.2. Description of the proficiency test items

The sampling of groundwater and surface water were both carried out on 28th of January 2026.

The following samples were made available

- 1 sample groundwater (M180 A)
- 1 sample surface water (M180 B)

Both samples were filtered using 0.45 µm membrane disc filters and stored at 4 +/- 3 °C until further processing. The samples were partly spiked with specific substances.

The samples were filled into bottles under continuous stirring (stirring vessel) and stabilized by addition of HNO_3 (2,5 ml c. HNO_3 per 250 ml) and HCl (1 ml c. HCl per 100 ml; for Hg only), respectively.

The homogeneous proficiency test items were dispatched on February 03rd, 2026.

Each participant received:

- 2 samples each 350 ml, filled in 1 x 250 ml LDPE bottle and 1 x 100 ml LDPE bottle (for Hg), respectively.

E1.3. Instructions for the participants

For reasons of stability, it was recommended to start the analysis by the 11th of February 2026 at the latest.

The participants were expected to use the test method or measurement method of their choice, which should be consistent with their routine procedures. In E9 you will find the overview of applied methods in course of the proficiency testing.

E1.4. Control testing for homogeneity evaluation

During filling of the bottles, aliquots of each sample were collected randomly for control testing. From each of the samples A and B, n=5 control test samples and n=1 unspiked real water sample were transferred to the laboratory for control testing.

The determination of all the parameters was performed in the testing laboratory at the Environment Agency Austria (Prüfstelle für Umwelt-, GVO- & Treibstoffanalytik) close to the time of sample dispatch.

During evaluation the relative standard deviation between the individual results of the control test samples was assessed for each parameter by comparison with the reproducibility standard deviation of the actual proficiency test.

In the parameter-oriented evaluation (E7), the results of the control testing are given in the form of arithmetic means of the detected concentrations ± expanded measurement uncertainty as control test value ± U (expanded uncertainty, k=2).

E1.5. Trend test for stability evaluation

The evaluation of stability of the proficiency test items was performed using the data statistics of the results of previous proficiency testing rounds for real water samples of the period from 2013 to 2025.

The assessment of the stability of the proficiency test items of the current round was carried out by evaluation of all participant results sorted by analysis date (until submission deadline): No systematic trends were identified.

Using all participants' results, it was furthermore tested if systematic trends could be detected depending on the order in which the bottles were filled for the proficiency test: No systematic trends could be identified.

According to data obtained from previous rounds and based on the trend test evaluation of the current round, the stability of the test items for proficiency testing of real water samples can be confirmed for the recommended analysis period until deadline for submission of data.

E1.6. Determination of the assigned values

The analytical results had to be made available to the organiser not later than 03rd of March 2026. Any values received at later date were not considered.

During the plausibility assessment of all received data (e.g. check for correct units, indication of measurement uncertainty, …) the participants with noticeable results were asked to perform a subsequent data check and to give prompt feedback within 24 hours.

After plausibility assessment an outlier test according to Hampel was performed to identify outliers. Values identified as conspicuous are marked specifically in the parameter-oriented evaluation ('H').

In justified cases, for instance, when the outlier test according to Hampel is not applicable (e.g. many similar or identical results of the participants or in case of a very limited number of highly scattering results) a different outlier identification method can be applied (e.g. Dean and Dixon outlier test or manual outlier elimination by expert judgement). In such a case, this procedure is documented in section E4 of the report.

Further data evaluation was performed in accordance with ISO 5725-2. A statistical evaluation of proficiency testing data was only carried out if at least n=6 valid results per parameter were available. Results < LOQ or < LOD are not included in the calculation for the assigned value.

The assigned values are normally calculated as the mean over all submitted results, after removal of outliers. The traceability of the assigned value is checked by comparing it with the mean value of the control testing laboratory.

For real water samples in some exceptional cases, it might occur that no assigned value based on participants' results can be calculated and no evaluation of the participants' results can be made. E.g due to large variations in the participant results (vR > 50 %) and/or insufficient traceability of the calculated mean of all participants after outlier-clearing to the mean of control testing or if the number of results (without outliers) of the group of accredited testing laboratories is too low.

In this case, a clear statement in section E7 of the report is made and all statistical data provided is for information only. In section E4 further information is given, when applicable, for each parameter and proficiency test item. In course of the internal quality measures, the participants can compare their results with the control test values.

E2. Criteria of performance evaluation

E2.1. Performance criterion z-Score

The adjusted average value (after removal of outliers) for all submitted results was used as a basis for the calculation of recovery rates and z-scores.

z-Scores were calculated based on the following formula:

$$z - score = \frac{x_i - \overline{X}}{Criteria}$$

x_i	is the measurement value (result) of the participating laboratory
$\overline{X}$	assigned value
	the target value for the assessment of the performance of the participants (3 significant digits), normally the average value of the participants' results after removal of outliers; if this approach is not applicable, the target value is assigned according to the procedure given in section E4
Criteria	is the reproducibility standard deviation calculated from previous rounds for proficiency testing for real water samples from 2013 to 2025 (as RSD pooled). Where justified (e.g. results for real water samples are close to minimum quantification limit or in case of regulatory requirements) the criteria is defined by expert judgement and the procedure is clearly described in section E4 of the report.

E2.2. Performance criterion E_n-Score

In addition, an assessment of the participants' results using E_n-Scores for proficiency testing of real water samples is performed. This additional assessment considers the expanded measurement uncertainties of the participants' results and the expanded uncertainty of the assigned value and is provided in the laboratory-oriented part of the report (see E8 after the z-scores evaluation).

E_n-Scores were calculated based on the following formula:

$$E_n - score = \frac{x_i - \bar{X}}{\sqrt{U(x_i)^2 + U(\bar{X})^2}}$$

x_i	is the measurement value (result) of the participating laboratory
$\overline{X}$	assigned value
	the target value for the assessment of the performance of the participants (3 significant digits), normally the average value of the participants' results after removal of outliers; if this approach is not applicable, the target value is assigned according to the procedure given in section E4

$U(x_i)$ expanded measurement uncertainty for the result of the participating laboratory, k=2

$U(\bar{X})$ expanded measurement uncertainty for the assigned value, k=2

E2.3.   Performance evaluation z-Score and E_n-Score

Interpretation of z-Scores:

-    |z-Score| ≤ 2.0   good result
-    2.0 < |z-Score| < 3.0   questionable result
-    |z-Score| ≥ 3.0   unsatisfactory result

Note: In case of assessment of the participants' performance by z-scores the measurement uncertainty of the participants' results is not considered. The difference between result of participants and the assigned value is evaluated by the criteria.

Interpretation of E_n-Scores:

-    |E_n-Score| ≤ 1.0   satisfactory performance
-    |E_n-Score| > 1.0   unsatisfactory performance

Note: In case of assessment of the participants' performance by E_n-Scores the expanded measurement uncertainties for the results and for the assigned values are considered. IE_n-ScoreI > 1.0 might indicate to check the measurement uncertainty estimation or might point out to correct a measurement problem.

E3.   Representation and interpretation of measurement results

The parameter-oriented report provides the measurement values (results) including uncertainty (± U), recovery rate, calculated z-Score and the outliers in tabular form. The results listed in the table are also represented graphically.

The laboratory-oriented report shows the results of the individual laboratories (anonymous), including the measurement uncertainty (± U), recovery rates, z-Scores and additionally evaluation of E_n-Scores on separate pages.

The tables also contain the basis for the data assessment as the assigned values and expanded measurement uncertainties and the criteria.

An annotation of the tables and graphics is given in section E5.

E4. Explanatory notes

As explained in section E2, the z-Score can also be calculated using the reproducibility standard deviation, calculated from the participants' results (after removal of outliers) in the relevant test round. It might occur that the z-Score between -2 and 2 covers a large range of measurement values when the variance of the results is high. On the other hand, the range of good results can be very narrow, when the variation of the participants' results is small.

The recovery rate is calculated for the individual result based on the assigned value and is thus independent of the reproducibility standard deviation. In the case of a high variance of the results, participants should also consider recovery rates as additional criteria to decide on the necessity of internal quality assurance measures.

As a result of a long-term evaluation of proficiency testing rounds between 2013 and 2025 in real samples, evaluation criteria (RSDpool) were calculated. These criteria were compared with the relative reproducibility standard deviation (vR) of the current proficiency testing.

Parameters chromium and uranium for sample M180 A:
For both parameters a reproducibility standard deviation (vR) of the current proficiency testing round was chosen for assessment.

Scores for all other listed parameters were calculated according to E2.

E5. Annotations on tables and charts

E5.1. Information and abbreviations in tables

Parameter	Analyte identifier
Sample	Sample identifier
Unit	Given unit for result and uncertainty (e.g. µg/l)
Assigned value	Target value for proficiency assessment of the participants (3 significant digits)
U (k=2)	Expanded uncertainty (k=2) of the assigned value (3 significant digits)
Criteria	Specified value for the determination of the z-score in the given unit (3 significant digits)
Criteria [%]	Specified value for the determination of the z-score in % of the assigned value (2 significant digits)
Mean	Mean of the results of the participants, without outliers (3 significant digits)
CI (99 %)	99 % confidence interval (3 significant digits)

Minimum	Minimum of all submitted results, after removal of outliers (3 significant digits)
Maximum	Maximum of all submitted results, after removal of outliers (3 significant digits)
SD	Reproducibility standard deviation, calculated from the participants results, after removal of outliers (3 significant digits)
RSD %	Reproducibility standard deviation, calculated from the participants results relative to the target value, given in %, after removal of outliers (2 significant digits)
Control test value ± U (k=2)	Mean of control test value ± expanded measurement uncertainty (3 significant digits)
Labcode	Laboratory identifier (anonymized)
Result	Result as indicated by participant (max. 5 decimal places)
± U	combined measurement uncertainty without expansion factor (k=1), as indicated by participant (max. 5 decimal places)
LOQ	Limit of quantification
LOD	Limit of detection
Recovery	Recovery rate in % based on assigned value (target value) (3 significant digits, max. one decimal place given)
z-Score	Deviation of result based on the assigned value (target value) given as a multiple of the criteria (3 significant digits, max. 2 decimal places given)
E_n-Score	Deviation of result based on the assigned value (target value) given as a multiple of the combined expanded measurement uncertainty of the participant's results and expanded measurement uncertainty for the assigned value (3 significant digits, max. 2 decimal places given). Note: E_n-Score assessment considers the measurement uncertainty of the participants.
-	No data available or no calculation possible
Comments	Comment on the respective result (e.g. H, FN, FP)
H	Outlier according to Hampel-Test
FN	False negative – for a result < LOQ or result < LOD: The absolute value of the LOQ or LOD fulfils the condition of an outlier according to the Hampel test.
FP	False positive; for parameters where no target value is available because of a too low analyte content (n < 6): Result that exceeds the median of the absolute values of the transmitted LOQs or LODs by more than 100 %.

Standard deviation	Reproducibility standard deviation, calculated from the participants results (3 significant digits)
Rel. standard deviation	Reproducibility standard deviation, calculated from the participants results relative to the target value, given in %, (3 significant digits)
n	Number of results
*	mark for additional comments

E5.2. Graphical presentation of results

The graphic representation in the report is explained below by means of commented example diagrams:

Example Chart: Results

Graphical presentation of results
Results

confidence interval (95 %) of the assigned value

assigned value (target value)

result outside displayed area

result < LOD or < LOQ, base of the triangle is the value of the LOD or LOQ

Limit of tolerance: |z-Score| = 2

Control limit: |z-Score| = 3

result ± uncertainty

Hampel test outlier ± uncertainty
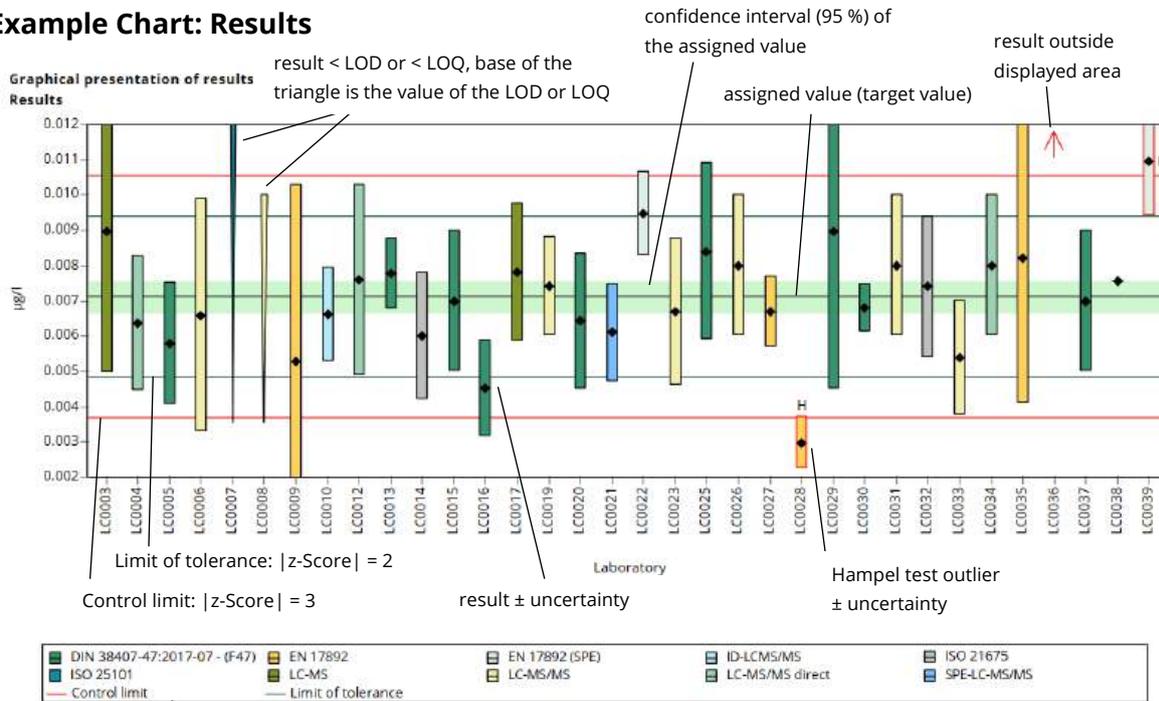
The method information is indicated by different colours.

Example Chart: Recovery

Recovery rate

assigned value (target value) = 100 % recovery

confidence interval (95 %) of the assigned value

result outside displayed area

recovery rate of the laboratory (%)

Limit of tolerance: |z-Score| = 2

Control limit: |z-Score| = 3

Hampel test outlier

The method information is indicated by different colours.

Example chart: z-Score

result outside of displayed area

z-Score of the laboratory

assigned value (target value): z-Score = 0

Limit of tolerance: |z-Score| = 2

Laboratory

DIN 38407-47:2017-07 - (F47)	EN 17892	EN 17892 (SPE)	ID-LCMS/MS	ISO 21675
LC-MS	LC-MS/MS	LC-MS/MS direct	SPE-LC-MS/MS	— Control limit
— Limit of tolerance				

The method information is indicated by different colours.

Example chart: z-Score (laboratory-oriented report)

Sample

Sample Code A   Sample Code B

assigned value (target value): z-Score = 0

z-Score of the laboratory

|z-Score| > 2

|z-Score| = 2

Measurand
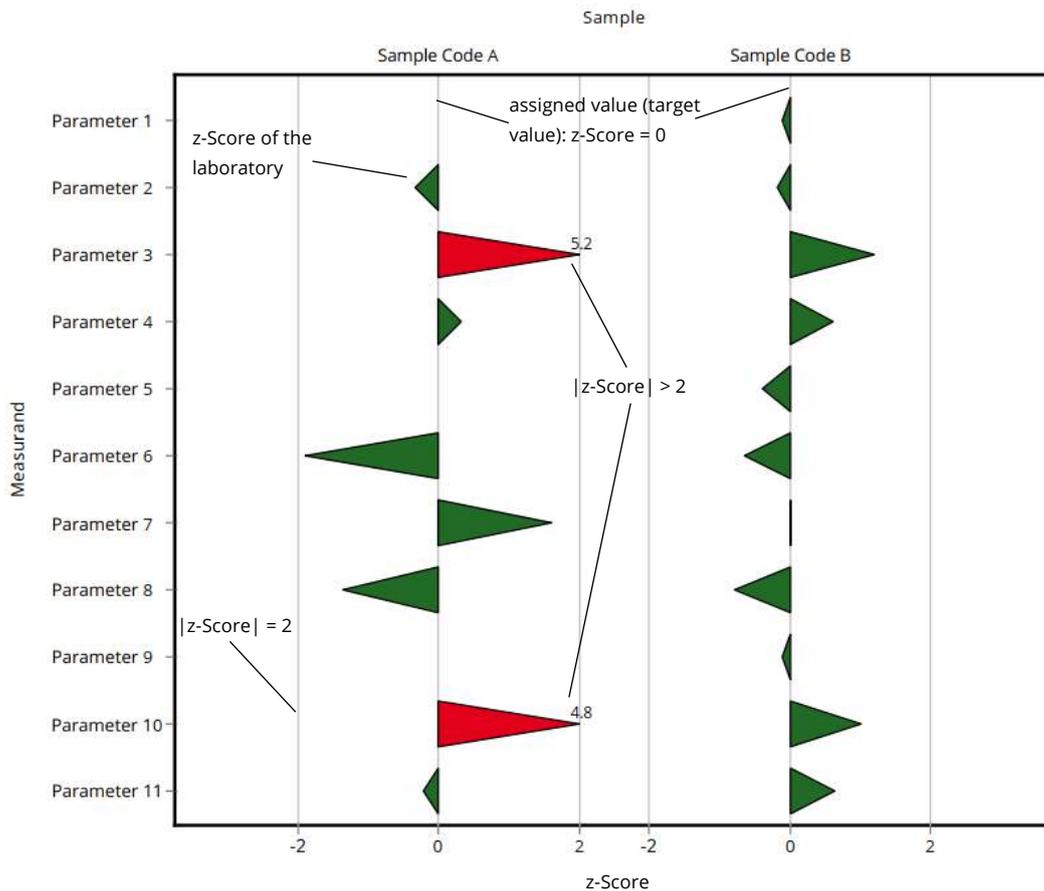
z-Score

Example chart: En-Score (laboratory-oriented report)
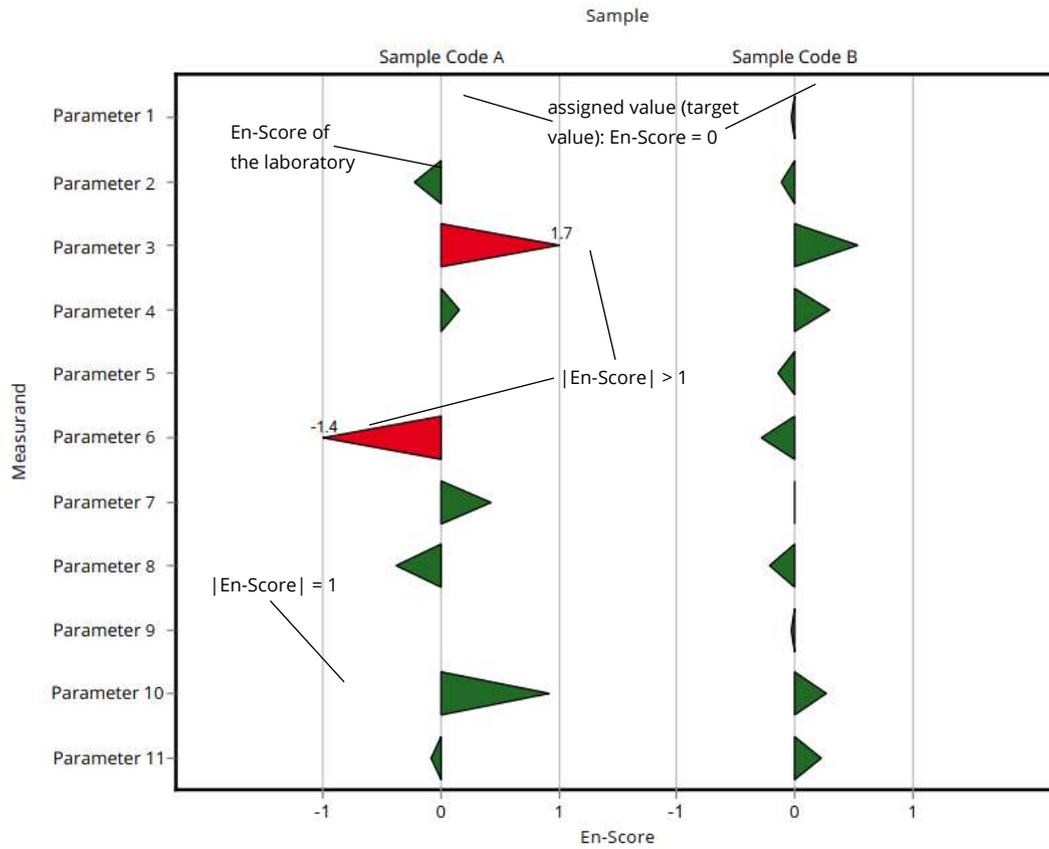
E6. Summary
E6.1. Table of assigned values

Parameter	Sample	Unit	Assigned value ± U (k=2)		Criterion	Criterion [%]
Aluminium	M180 A	µg/l	30.3 ±	1.02	3.03	10
	M180 B	µg/l	618 ±	19.3	61.8	10
Arsenic	M180 A	µg/l	5.19 ±	0.158	0.675	13
	M180 B	µg/l	87.5 ±	1.5	11.4	13
Cadmium	M180 A	µg/l	0.644 ±	0.0142	0.0644	10
	M180 B	µg/l	6.24 ±	0.127	0.624	10
Chromium	M180 A	µg/l	2.27 ±	0.0977	0.213	9.4
	M180 B	µg/l	28.2 ±	0.401	2.39	8.5
Copper	M180 A	µg/l	12.5 ±	0.346	1.13	9
	M180 B	µg/l	83.1 ±	1.3	7.48	9
Iron	M180 A	µg/l	66.6 ±	1.43	7.33	11
	M180 B	µg/l	478 ±	9.93	52.6	11
Lead	M180 A	µg/l	2.16 ±	0.072	0.216	10
	M180 B	µg/l	49.3 ±	0.959	4.93	10
Manganese	M180 A	µg/l	5.53 ±	0.158	0.398	7.2
	M180 B	µg/l	753 ±	13.7	54.2	7.2
Mercury	M180 A Hg	µg/l	1.79 ±	0.0433	0.25	14
	M180 B Hg	µg/l	3.13 ±	0.0853	0.438	14
Nickel	M180 A	µg/l	3.91 ±	0.113	0.47	12
	M180 B	µg/l	61 ±	1.26	7.32	12
Selenium	M180 A	µg/l	4.41 ±	0.169	0.529	12
	M180 B	µg/l	19.4 ±	0.524	2.33	12
Uranium	M180 A	µg/l	1.2 ±	0.0488	0.104	8.6
	M180 B	µg/l	2.13 ±	0.0419	0.14	6.6
Zinc	M180 A	µg/l	1150 ±	18.1	103	9
	M180 B	µg/l	767 ±	23.6	69.1	9

E6.2. Summary of results, after removal of outliers

Parameter	Sample	Number of results for calculation	Number of outliers	Unit	Mean	± CI (99%)	Minimum	Maximum	sR	vR [%]
Aluminium	M180 A	19	1	µg/l	30.3 ±	1.52	25.3	34.2	2.21	7.3
	M180 B	19	1	µg/l	618 ±	28.9	546	700	42	6.8
Arsenic	M180 A	21	1	µg/l	5.19 ±	0.237	4.43	5.9	0.362	7
	M180 B	22	0	µg/l	87.5 ±	2.25	80	93.4	3.52	4
Cadmium	M180 A	23	1	µg/l	0.644 ±	0.0213	0.585	0.702	0.034	5.3
	M180 B	22	2	µg/l	6.24 ±	0.19	5.63	6.82	0.297	4.8
Chromium	M180 A	19	2	µg/l	2.27 ±	0.147	2.03	2.76	0.213	9.4
	M180 B	21	2	µg/l	28.2 ±	0.601	26.7	29.7	0.918	3.3
Copper	M180 A	21	2	µg/l	12.5 ±	0.519	11	14.2	0.793	6.3
	M180 B	22	2	µg/l	83.1 ±	1.96	76.3	87.5	3.06	3.7
Iron	M180 A	17	5	µg/l	66.6 ±	2.15	59.4	72.2	2.95	4.4
	M180 B	19	3	µg/l	478 ±	14.9	436	517	21.6	4.5
Lead	M180 A	23	1	µg/l	2.16 ±	0.108	1.89	2.54	0.173	8
	M180 B	22	2	µg/l	49.3 ±	1.44	45	53.6	2.25	4.6
Manganese	M180 A	17	1	µg/l	5.53 ±	0.237	5.07	6.3	0.326	5.9
	M180 B	21	1	µg/l	753 ±	20.6	692	816	31.4	4.2
Mercury	M180 A Hg	17	3	µg/l	1.79 ±	0.065	1.69	1.99	0.0894	5
	M180 B Hg	18	2	µg/l	3.13 ±	0.128	2.75	3.52	0.181	5.8
Nickel	M180 A	19	2	µg/l	3.91 ±	0.169	3.35	4.27	0.246	6.3
	M180 B	21	1	µg/l	61 ±	1.89	55.1	65.1	2.88	4.7
Selenium	M180 A	17	4	µg/l	4.41 ±	0.254	3.87	5.26	0.349	7.9
	M180 B	19	2	µg/l	19.4 ±	0.786	16.8	21.6	1.14	5.9

Parameter	Sample	Number of results for calculation	Number of outliers	Unit	Mean	±	CI (99%)	Minimum	Maximum	sR	vR [%]
Uranium	M180 A	18	0	µg/l	1.2	±	0.0732	0.976	1.39	0.104	8.6
	M180 B	19	0	µg/l	2.13	±	0.0628	1.96	2.25	0.0913	4.3
Zinc	M180 A	19	4	µg/l	1150	±	27.2	1070	1220	39.5	3.4
	M180 B	23	0	µg/l	767	±	35.3	638	849	56.5	7.4

E7.   Parameterorientierte Auswertung / Parameter oriented report

Parameter oriented report

M180 A

Aluminium

Unit	µg/l
Assigned value ± U (k=2)	30.3 ± 1.02
Criterion	3.03 (10 %)
Minimum - Maximum	25.3 - 34.2
Control test value ± U (k=2)	28.9 ± 5.49

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	30 ± 0.28	98.9	-0.11	
LC0002	34.2 ± 5.13	113	1.27	
LC0003	29.2 ± 2	96.3	-0.37	
LC0004	30 ± 6	98.9	-0.11	
LC0005	30.1 ± 4.22	99.2	-0.08	
LC0006	< 100 (LOQ) ± -	-	-	
LC0007	27.6 ± 2.8	91	-0.9	
LC0008	33.8 ± 6.8	111	1.14	
LC0009	31.94 ± 3.194	105	0.53	
LC0010	- ± -	-	-	
LC0011	- ± -	-	-	
LC0012	28.3 ± 2.12	93.3	-0.67	
LC0013	28.5 ± 1.43	94	-0.6	
LC0014	29.73 ± 5.17	98	-0.2	
LC0015	32 ± 4.53	105	0.55	
LC0016	31.6 ± 3.2	104	0.42	
LC0017	25.26 ± 0.586	83.3	-1.67	
LC0018	31.349 ± 3.135	103	0.33	
LC0019	31.3 ± 4.7	103	0.32	
LC0020	- ± -	-	-	
LC0021	33 ± 4.95	109	0.88	
LC0022	- ± -	-	-	
LC0023	28.9 ± 0.63	95.3	-0.47	
LC0024	19.74 ± 0.4	65.1	-3.49	H
LC0025	29.55 ± 5.19	97.4	-0.26	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	29.8 ± 2.15	30.3 ± 1.52	µg/l
Minimum	19.7	25.3	µg/l
Maximum	34.2	34.2	µg/l
Standard deviation	3.2	2.22	µg/l
rel. standard deviation	10.7	7.3	%
n	20	19	-

Graphical presentation of results
Results
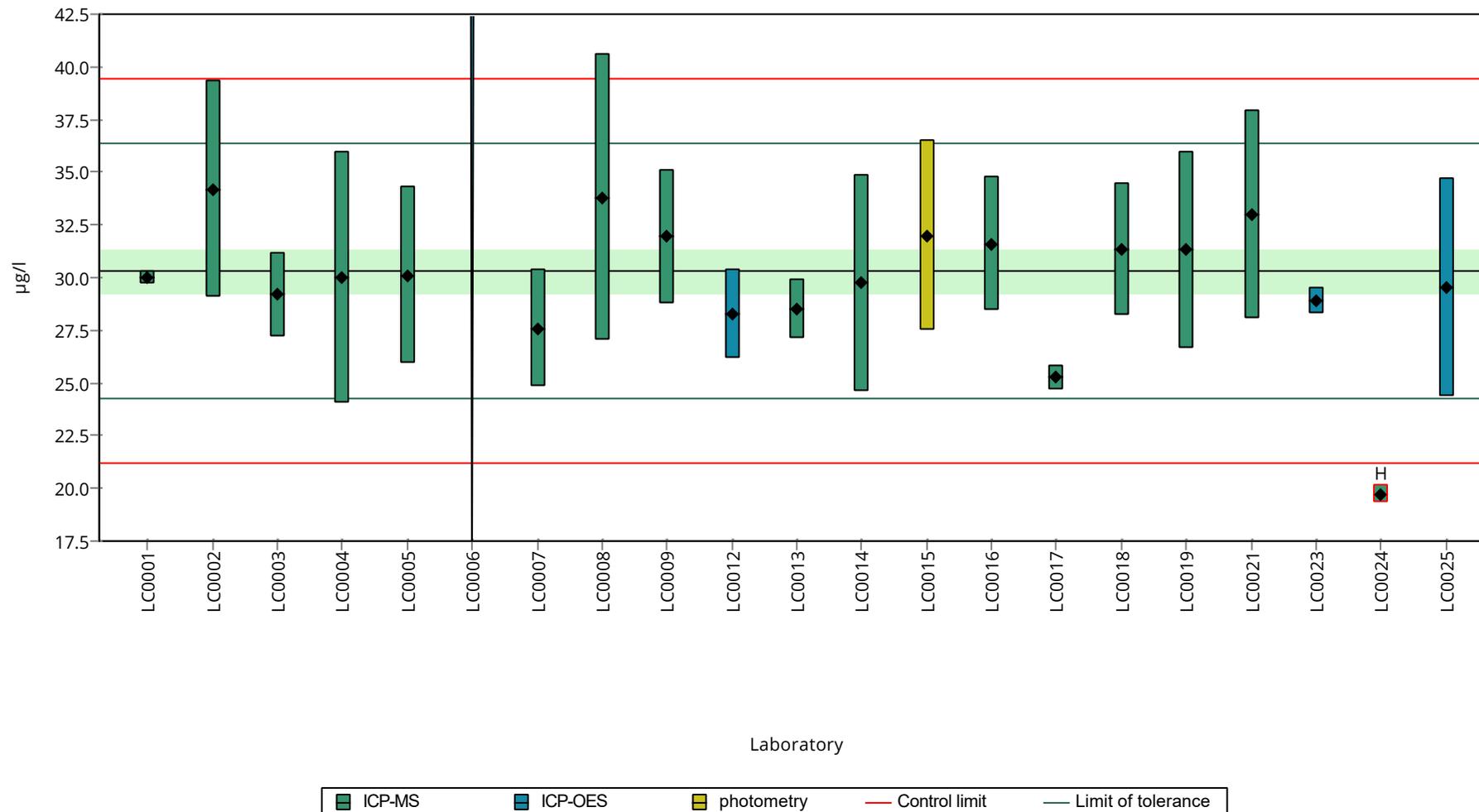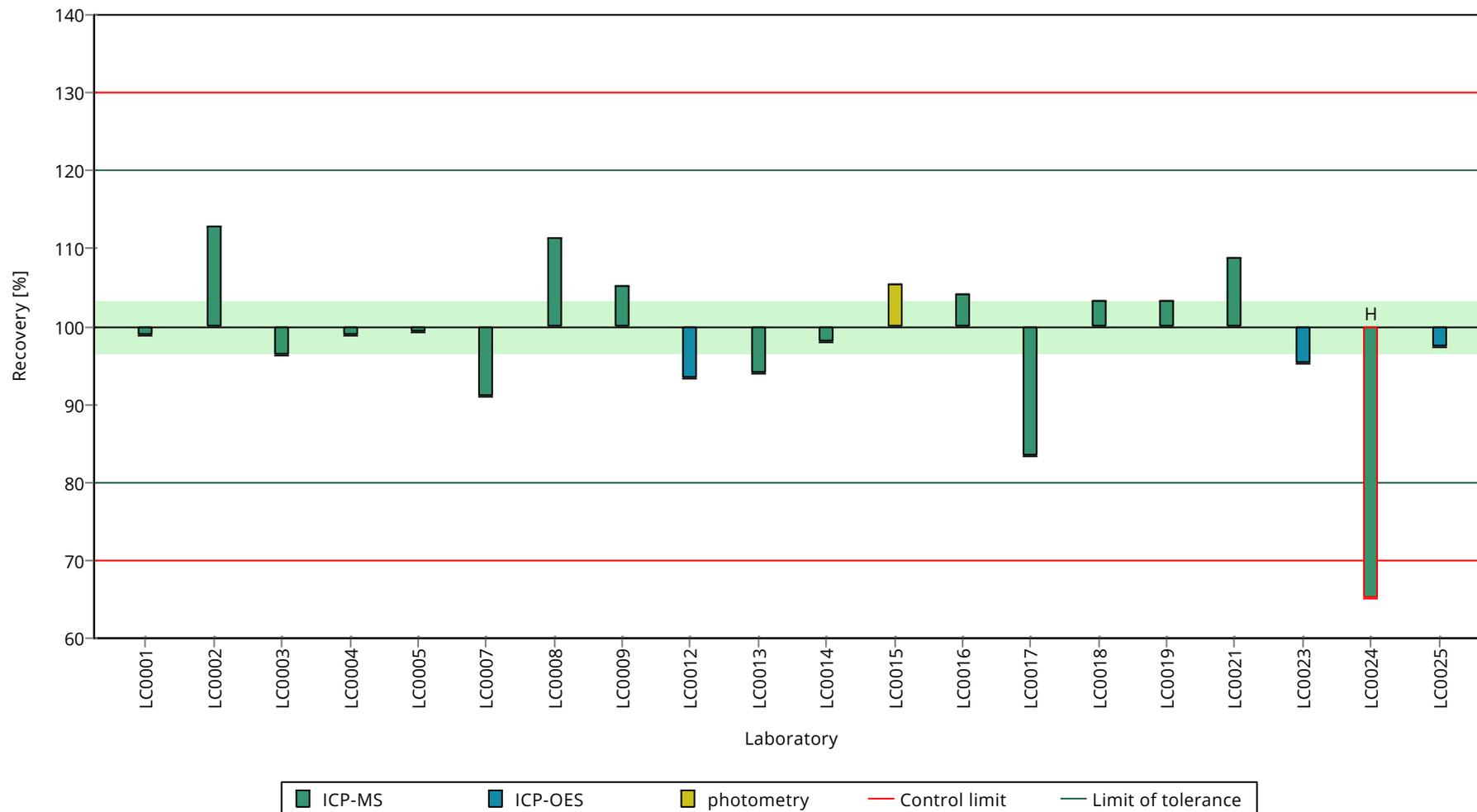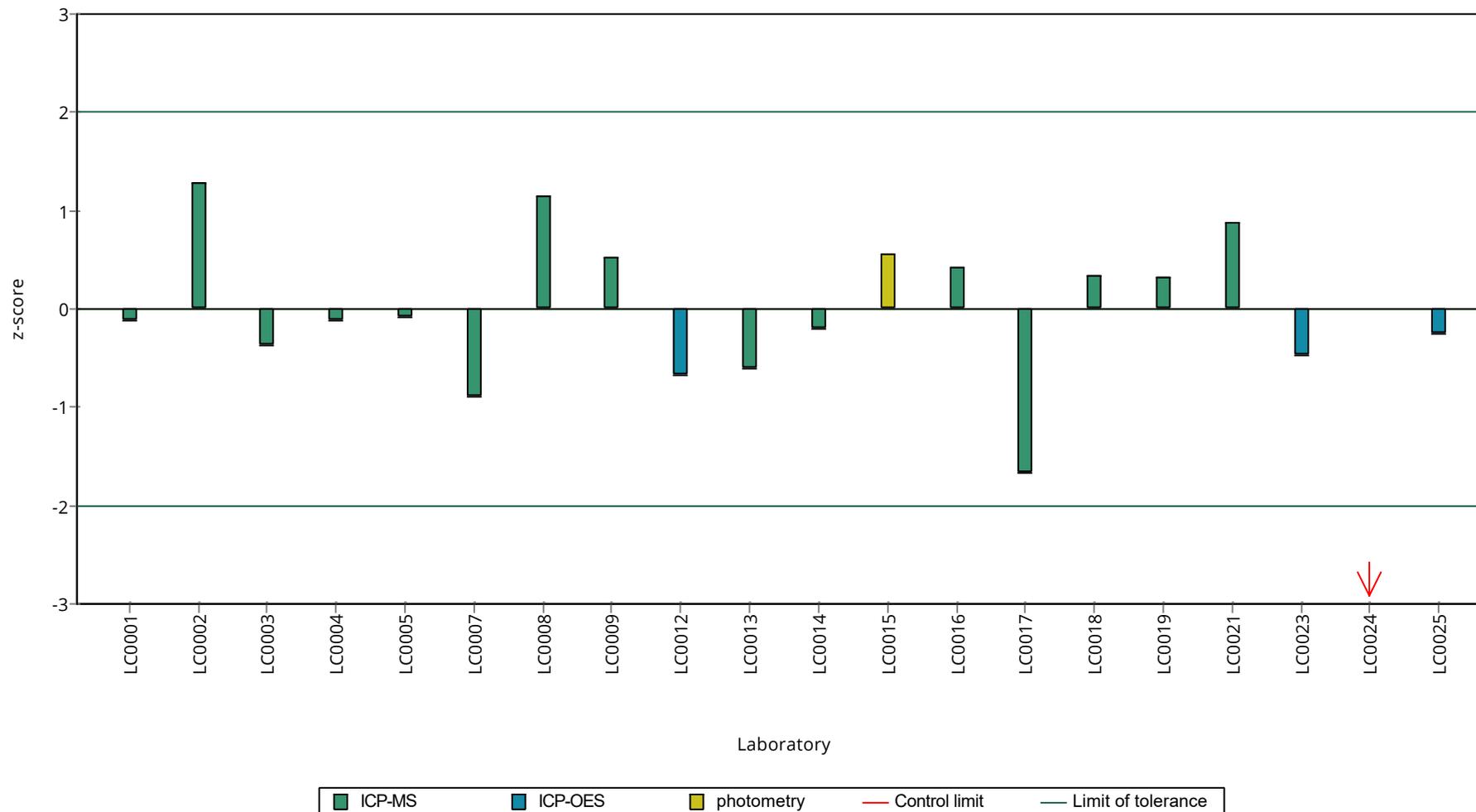
Laboratory

Legend: ICP-MS, ICP-OES, photometry, Control limit, Limit of tolerance

Recovery rate

z-Score

Parameter oriented report

M180 B

Aluminium

Unit	µg/l
Assigned value ± U (k=2)	618 ± 19.3
Criterion	61.8 (10 %)
Minimum - Maximum	546 - 700
Control test value ± U (k=2)	644 ± 122

Labcode	Result ± U		Recovery [%]	z-Score	Comments
LC0001	602 ±	5.69	97.4	-0.26	
LC0002	689 ±	103	111	1.15	
LC0003	581 ±	41	94	-0.6	
LC0004	625 ±	125	101	0.11	
LC0005	618 ±	86.5	100	0	
LC0006	592.8 ±	47.42	95.9	-0.41	
LC0007	593 ±	59	96	-0.4	
LC0008	566 ±	113	91.6	-0.84	
LC0009	645.3 ±	48.398	104	0.44	
LC0010	- ±	-	-	-	
LC0011	- ±	-	-	-	
LC0012	618 ±	46.2	100	0	
LC0013	580 ±	29	93.8	-0.62	
LC0014	603 ±	105	97.6	-0.24	
LC0015	616 ±	87.2	99.7	-0.03	
LC0016	739 ±	74	120	1.96	H
LC0017	545.68 ±	1.662	88.3	-1.17	
LC0018	699.034 ±	69.903	113	1.31	
LC0019	623 ±	93.5	101	0.08	
LC0020	- ±	-	-	-	
LC0021	631 ±	94.65	102	0.21	
LC0022	- ±	-	-	-	
LC0023	700 ±	7.79	113	1.33	
LC0024	- ±	-	-	-	
LC0025	614.5 ±	67.8	99.4	-0.06	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	624 ± 32.9	618 ± 28.9	µg/l
Minimum	546	546	µg/l
Maximum	739	700	µg/l
Standard deviation	49.1	42	µg/l
rel. standard deviation	7.86	6.8	%
n	20	19	-

Graphical presentation of results
Results
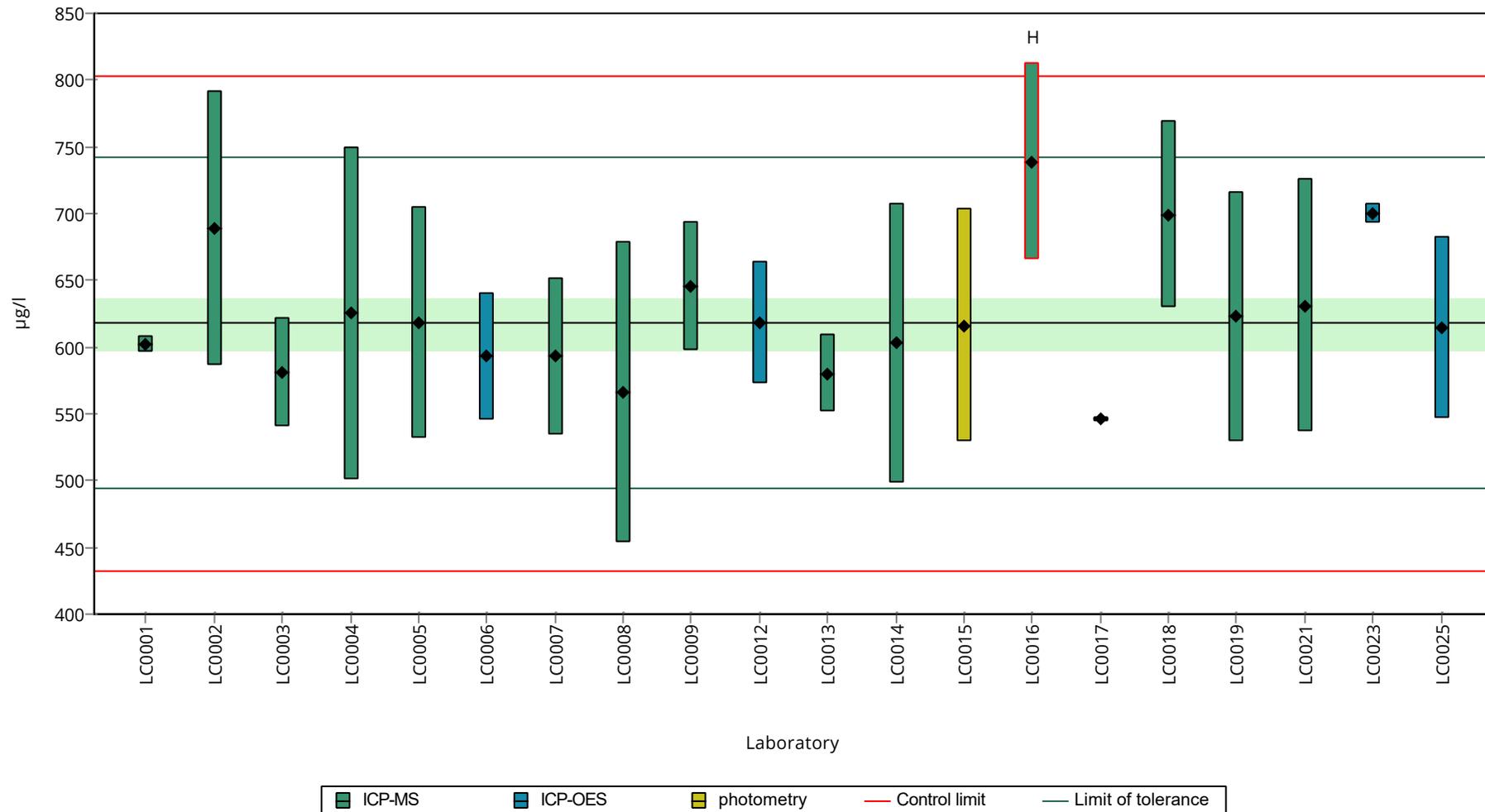
Recovery rate
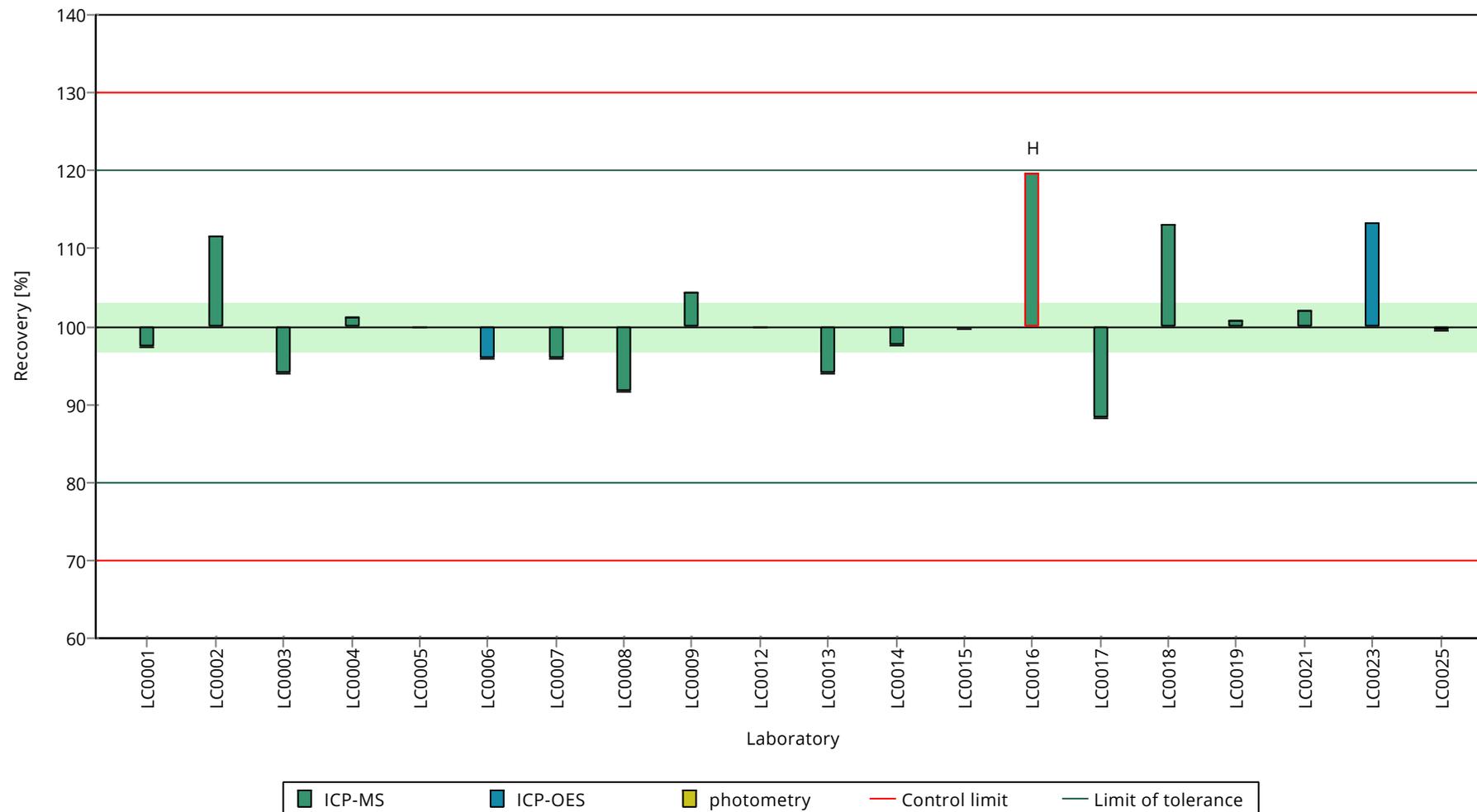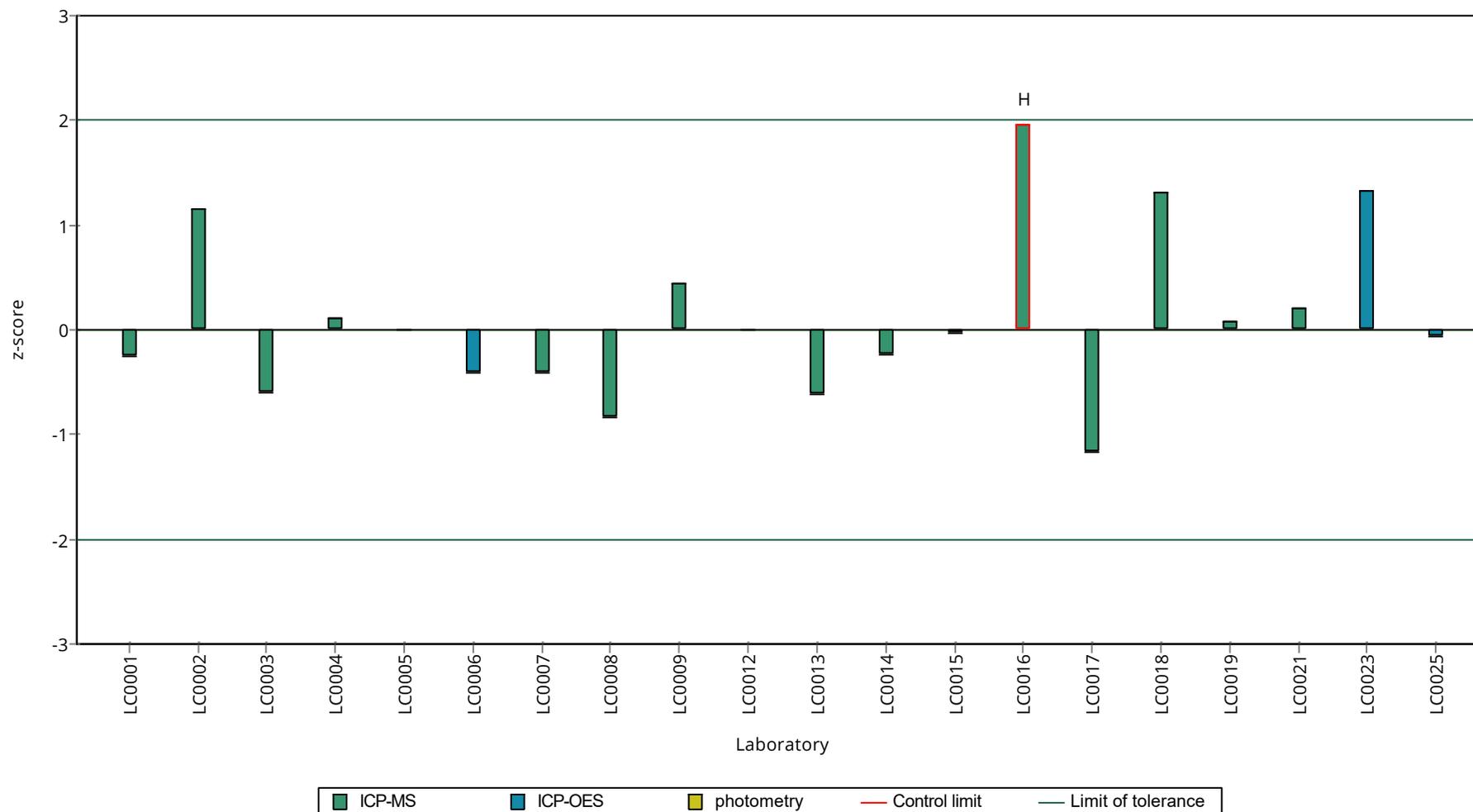
z-Score

Parameter oriented report

M180 A

Arsenic

Unit	µg/l
Assigned value ± U (k=2)	5.19 ± 0.158
Criterion	0.675 (13 %)
Minimum - Maximum	4.43 - 5.9
Control test value ± U (k=2)	5.24 ± 0.524

Labcode	Result ± U			Recovery [%]	z-Score	Comments
LC0001	5.04	±	0.044	97.1	-0.23	
LC0002	5.39	±	0.81	104	0.29	
LC0003	4.96	±	0.35	95.5	-0.35	
LC0004	4.85	±	0.97	93.4	-0.51	
LC0005	5.27	±	0.527	101	0.11	
LC0006	4.98	±	0.448	95.9	-0.32	
LC0007	5.59	±	0.56	108	0.59	
LC0008	5.25	±	0.79	101	0.08	
LC0009	5.28	±	0.528	102	0.13	
LC0010	5.72	±	1.1	110	0.78	
LC0011	-	±	-	-	-	
LC0012	5.15	±	0.365	99.2	-0.06	
LC0013	4.72	±	0.283	90.9	-0.7	
LC0014	4.93	±	0.85	94.9	-0.39	
LC0015	-	±	-	-	-	
LC0016	4.93	±	0.74	94.9	-0.39	
LC0017	5.9	±	0.052	114	1.05	
LC0018	4.427	±	0.443	85.3	-1.13	
LC0019	4.9	±	0.7	94.4	-0.43	
LC0020	5.714	±	0.4	110	0.77	
LC0021	5.4	±	0.81	104	0.31	
LC0022	-	±	-	-	-	
LC0023	5.26	±	0.139	101	0.1	
LC0024	3.495	±	0.055	67.3	-2.52	H
LC0025	5.39	±	1.13	104	0.29	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	5.12 ± 0.324	5.19 ± 0.237	µg/l
Minimum	3.5	4.43	µg/l
Maximum	5.9	5.9	µg/l
Standard deviation	0.506	0.362	µg/l
rel. standard deviation	9.89	6.98	%
n	22	21	-

UMWELT BUNDES AMT

Graphical presentation of results
Results

Laboratory

Legend: GF-AAS | ICP-MS | Control limit | Limit of tolerance
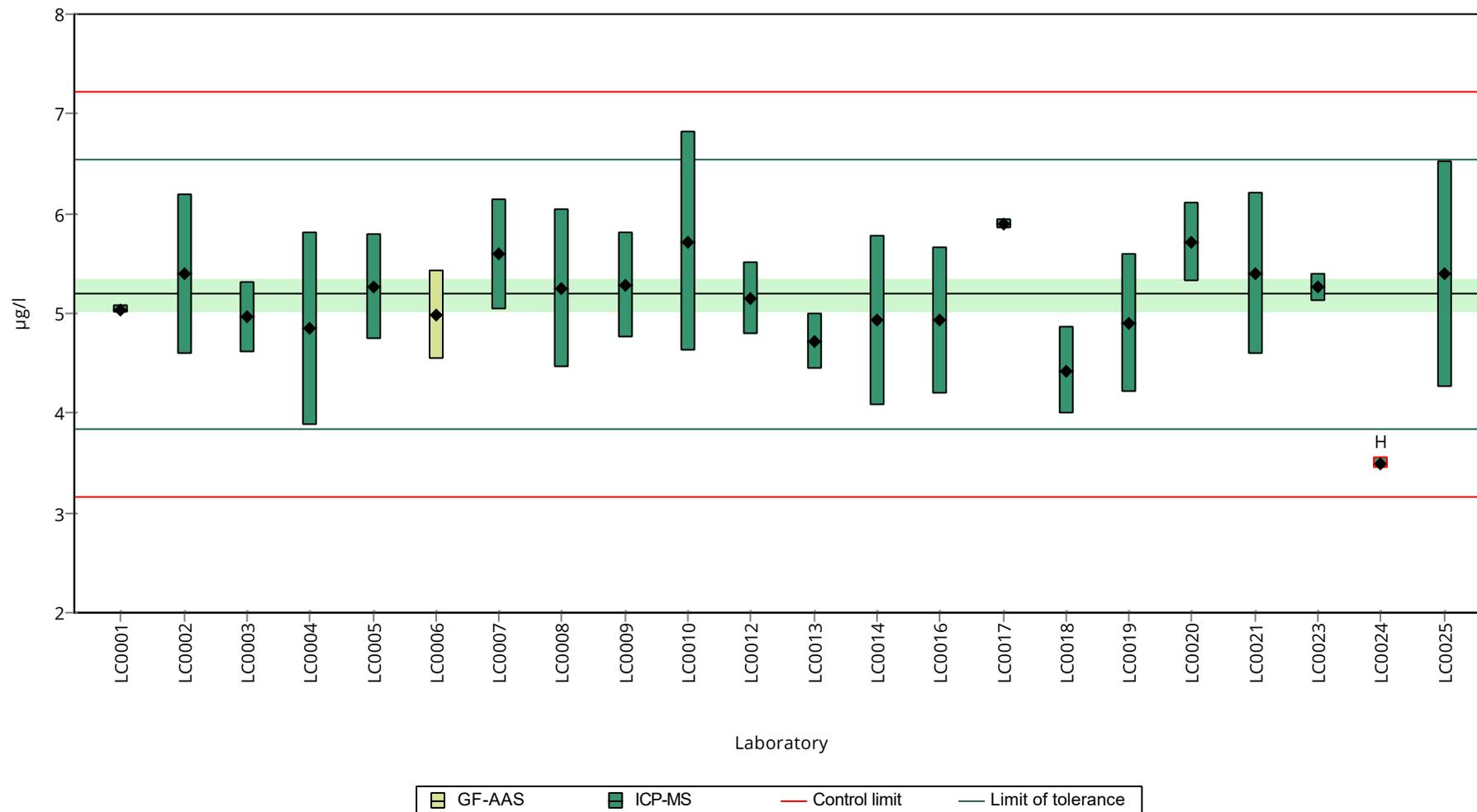
Recovery rate
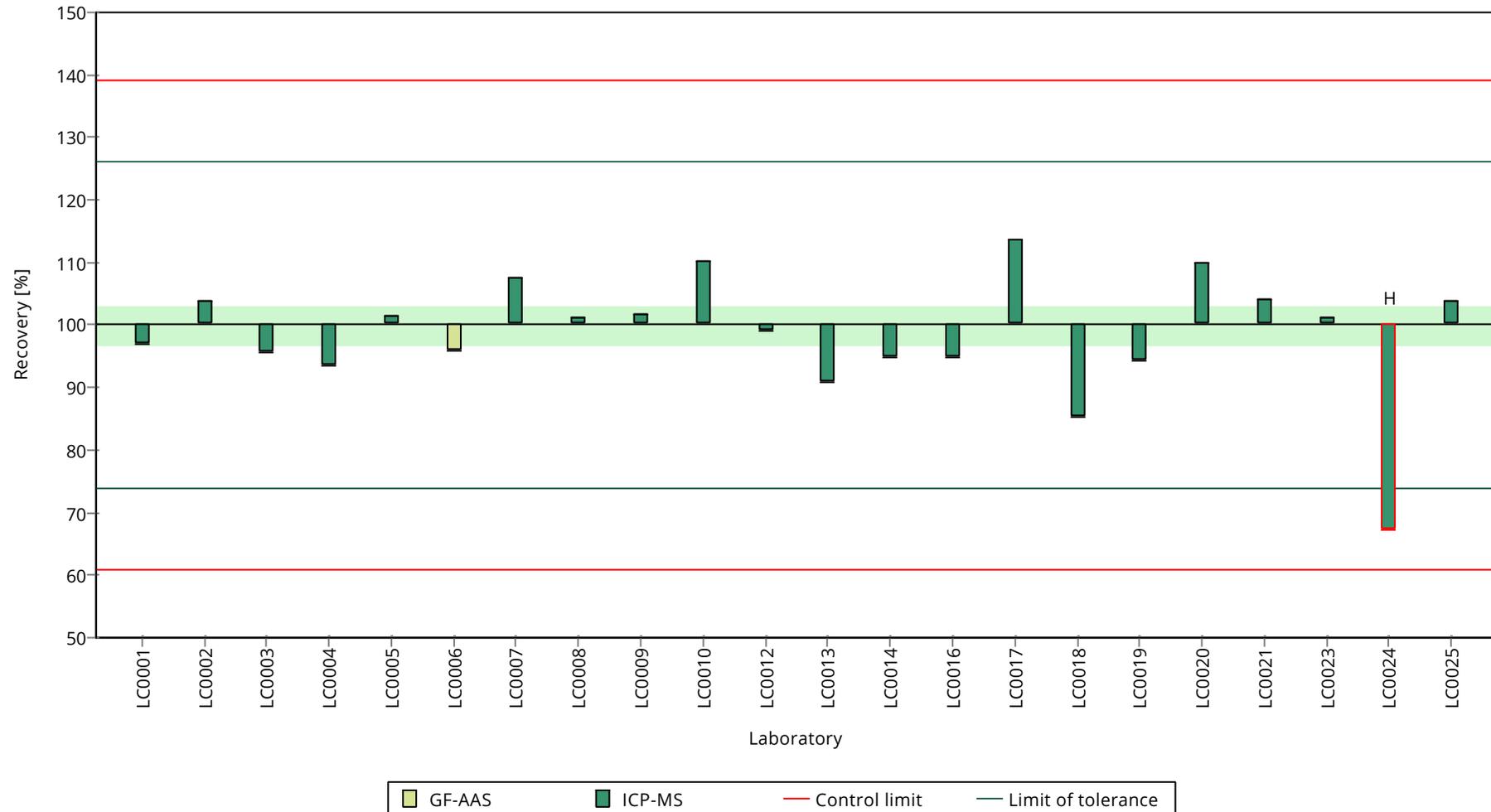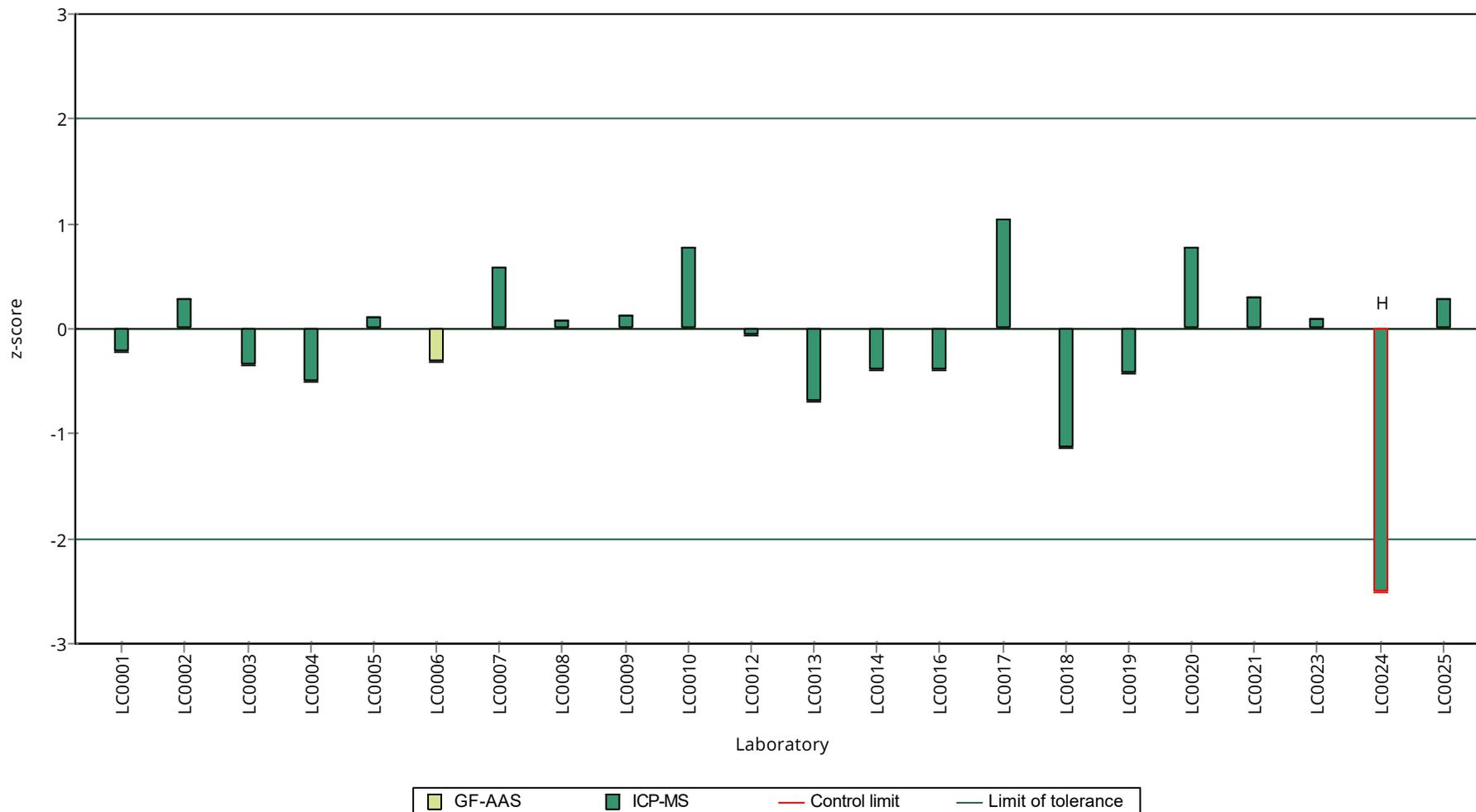
z-Score

Parameter oriented report

M180 B

Arsenic

Unit	µg/l
Assigned value ± U (k=2)	87.5 ± 1.5
Criterion	11.4 (13 %)
Minimum - Maximum	80 - 93.4
Control test value ± U (k=2)	87.3 ± 8.73

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	86.1 ± 0.76	98.4	-0.12	
LC0002	88.7 ± 13.3	101	0.11	
LC0003	86.6 ± 6.1	99	-0.08	
LC0004	84.5 ± 17	96.6	-0.26	
LC0005	89.2 ± 8.92	102	0.15	
LC0006	84 ± 7.56	96	-0.3	
LC0007	93.1 ± 9.3	106	0.5	
LC0008	91.6 ± 14	105	0.36	
LC0009	90.72 ± 9.072	104	0.29	
LC0010	93.4 ± 19	107	0.52	
LC0011	- ± -	-	-	
LC0012	88 ± 6.23	101	0.05	
LC0013	82.5 ± 4.95	94.3	-0.44	
LC0014	83.6 ± 14.4	95.6	-0.34	
LC0015	- ± -	-	-	
LC0016	86.4 ± 13	98.8	-0.09	
LC0017	87.18 ± 0.449	99.7	-0.02	
LC0018	80.044 ± 8.004	91.5	-0.65	
LC0019	86.6 ± 13	99	-0.08	
LC0020	92.76 ± 6.4932	106	0.47	
LC0021	86.3 ± 12.95	98.7	-0.1	
LC0022	- ± -	-	-	
LC0023	85 ± 1.49	97.2	-0.22	
LC0024	88.28 ± 0.8	101	0.07	
LC0025	89.55 ± 15	102	0.18	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	87.5 ± 2.25	87.5 ± 2.25	µg/l
Minimum	80	80	µg/l
Maximum	93.4	93.4	µg/l
Standard deviation	3.52	3.52	µg/l
rel. standard deviation	4.02	4.02	%
n	22	22	-

Graphical presentation of results
Results

Recovery rate

z-Score

Parameter oriented report

M180 A

Cadmium

Unit	µg/l
Assigned value ± U (k=2)	0.644 ± 0.0142
Criterion	0.0644 (10 %)
Minimum - Maximum	0.585 - 0.702
Control test value ± U (k=2)	0.612 ± 0.0612

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	0.633 ± 0.0209	98.3	-0.17	
LC0002	0.591 ± 0.09	91.8	-0.82	
LC0003	0.638 ± 0.045	99.1	-0.09	
LC0004	0.6 ± 0.12	93.2	-0.68	
LC0005	0.645 ± 0.0645	100	0.02	
LC0006	0.612 ± 0.061	95	-0.5	
LC0007	0.702 ± 0.07	109	0.9	
LC0008	0.674 ± 0.081	105	0.47	
LC0009	0.65 ± 0.081	101	0.09	
LC0010	0.661 ± 0.13	103	0.26	
LC0011	0.353 ± 0.071	54.8	-4.52	H
LC0012	0.627 ± 0.0446	97.4	-0.26	
LC0013	0.585 ± 0.0234	90.8	-0.92	
LC0014	0.65 ± 0.08	101	0.09	
LC0015	- ± -	-	-	
LC0016	0.59 ± 0.06	91.6	-0.84	
LC0017	0.633 ± 0.008	98.3	-0.17	
LC0018	0.699 ± 0.072	109	0.85	
LC0019	0.7 ± 0.1	109	0.87	
LC0020	0.644 ± 0.0451	100	0	
LC0021	0.67 ± 0.1005	104	0.4	
LC0022	0.66 ± 0.018	102	0.25	
LC0023	0.628 ± 0.00977	97.5	-0.25	
LC0024	0.67 ± 0.05	104	0.4	
LC0025	0.65 ± 0.19	101	0.09	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	0.632 ± 0.0417	0.644 ± 0.0213	µg/l
Minimum	0.353	0.585	µg/l
Maximum	0.702	0.702	µg/l
Standard deviation	0.0681	0.034	µg/l
rel. standard deviation	10.8	5.28	%
n	24	23	-

Graphical presentation of results
Results
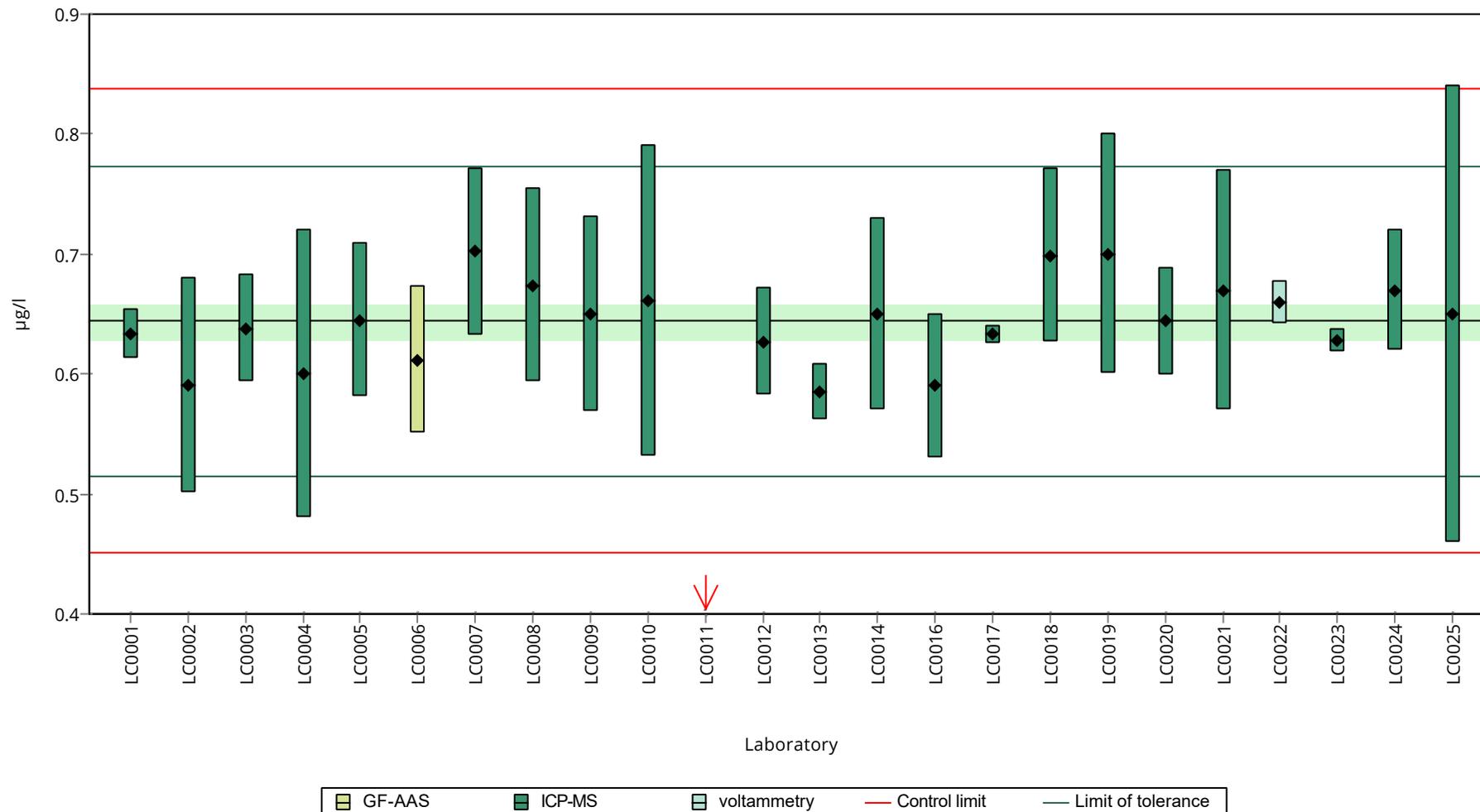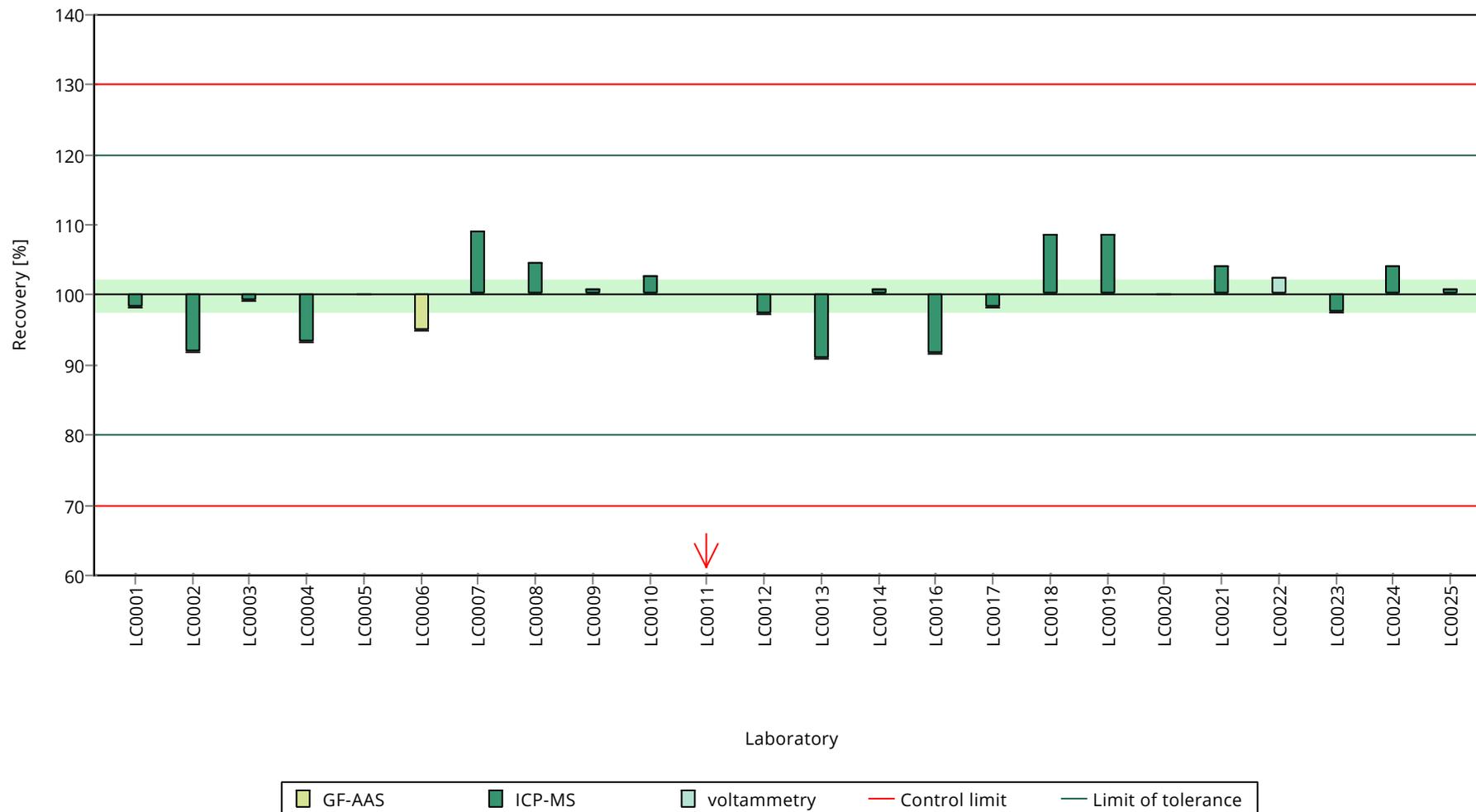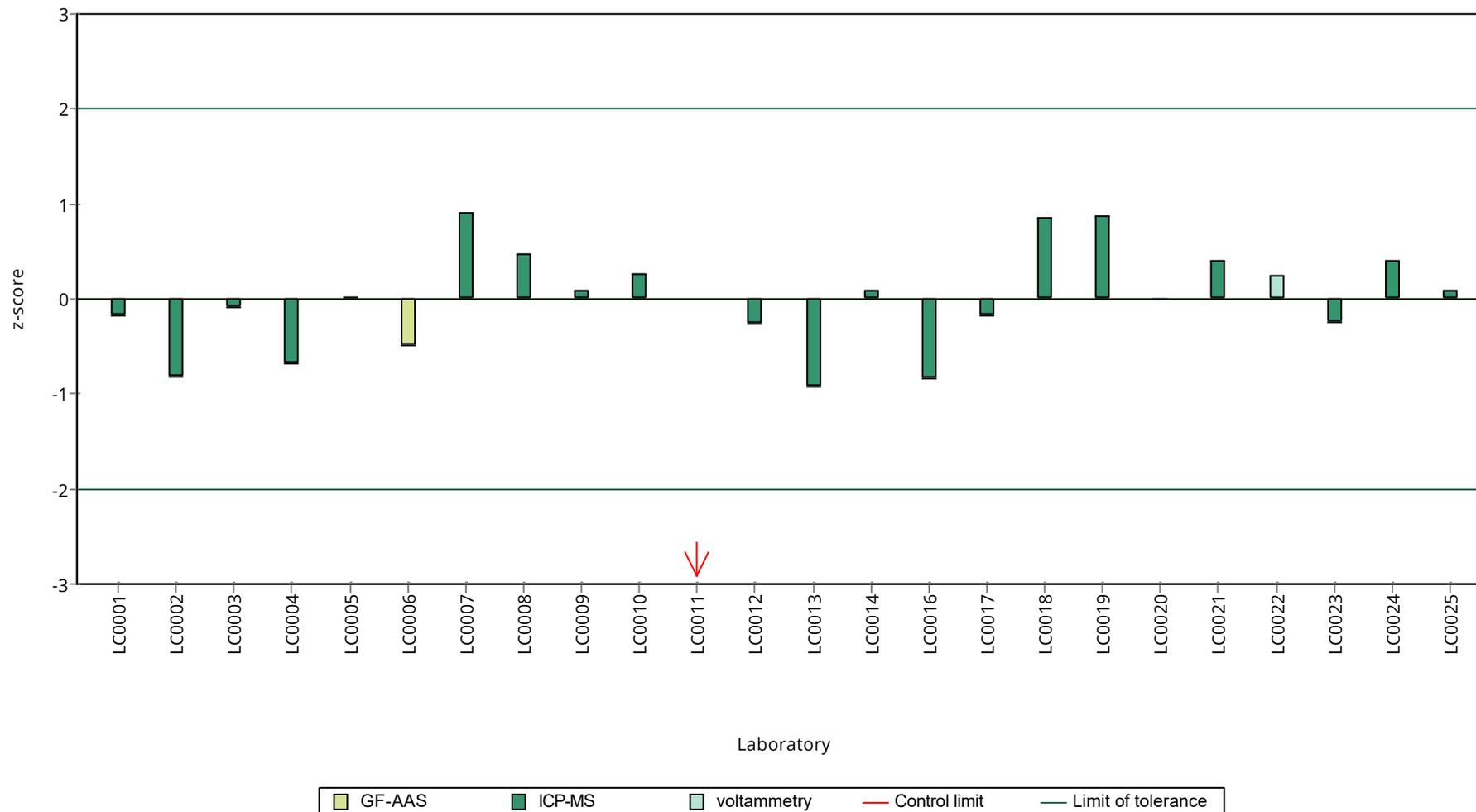
Laboratory

| | GF-AAS | | ICP-MS | | voltammetry | — Control limit | — Limit of tolerance |

Recovery rate

Sample: M180A, Parameter: Cadmium

z-Score

Laboratory

GF-AAS   ICP-MS   voltammetry   Control limit   Limit of tolerance

Parameter oriented report

M180 B

Cadmium

Unit	µg/l
Assigned value ± U (k=2)	6.24 ± 0.127
Criterion	0.624 (10 %)
Minimum - Maximum	5.63 - 6.82
Control test value ± U (k=2)	6.02 ± 0.602

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	6.34 ± 0.068	102	0.15	
LC0002	5.63 ± 0.84	90.2	-0.98	
LC0003	6.15 ± 0.43	98.5	-0.15	
LC0004	5.85 ± 1.2	93.7	-0.63	
LC0005	6.19 ± 0.619	99.1	-0.09	
LC0006	7.86 ± 0.786	126	2.59	H
LC0007	6.82 ± 0.68	109	0.92	
LC0008	6.64 ± 0.8	106	0.63	
LC0009	6.46 ± 0.485	103	0.34	
LC0010	7.19 ± 1.4	115	1.51	H
LC0011	5.68 ± 1.136	91	-0.9	
LC0012	6.12 ± 0.435	98	-0.2	
LC0013	5.86 ± 0.234	93.8	-0.62	
LC0014	6.19 ± 0.74	99.1	-0.09	
LC0015	- ± -	-	-	
LC0016	6.43 ± 0.64	103	0.3	
LC0017	6.32 ± 0.0151	101	0.12	
LC0018	6.516 ± 0.652	104	0.43	
LC0019	6.4 ± 1	102	0.25	
LC0020	6.215 ± 0.4351	99.5	-0.05	
LC0021	6.42 ± 0.963	103	0.28	
LC0022	6.16 ± 0.17	98.6	-0.14	
LC0023	6.32 ± 0.0978	101	0.12	
LC0024	6.53 ± 0.3	105	0.46	
LC0025	6.14 ± 1.02	98.3	-0.17	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	6.35 ± 0.288	6.24 ± 0.19	µg/l
Minimum	5.63	5.63	µg/l
Maximum	7.86	6.82	µg/l
Standard deviation	0.47	0.297	µg/l
rel. standard deviation	7.4	4.75	%
n	24	22	-

Graphical presentation of results
Results
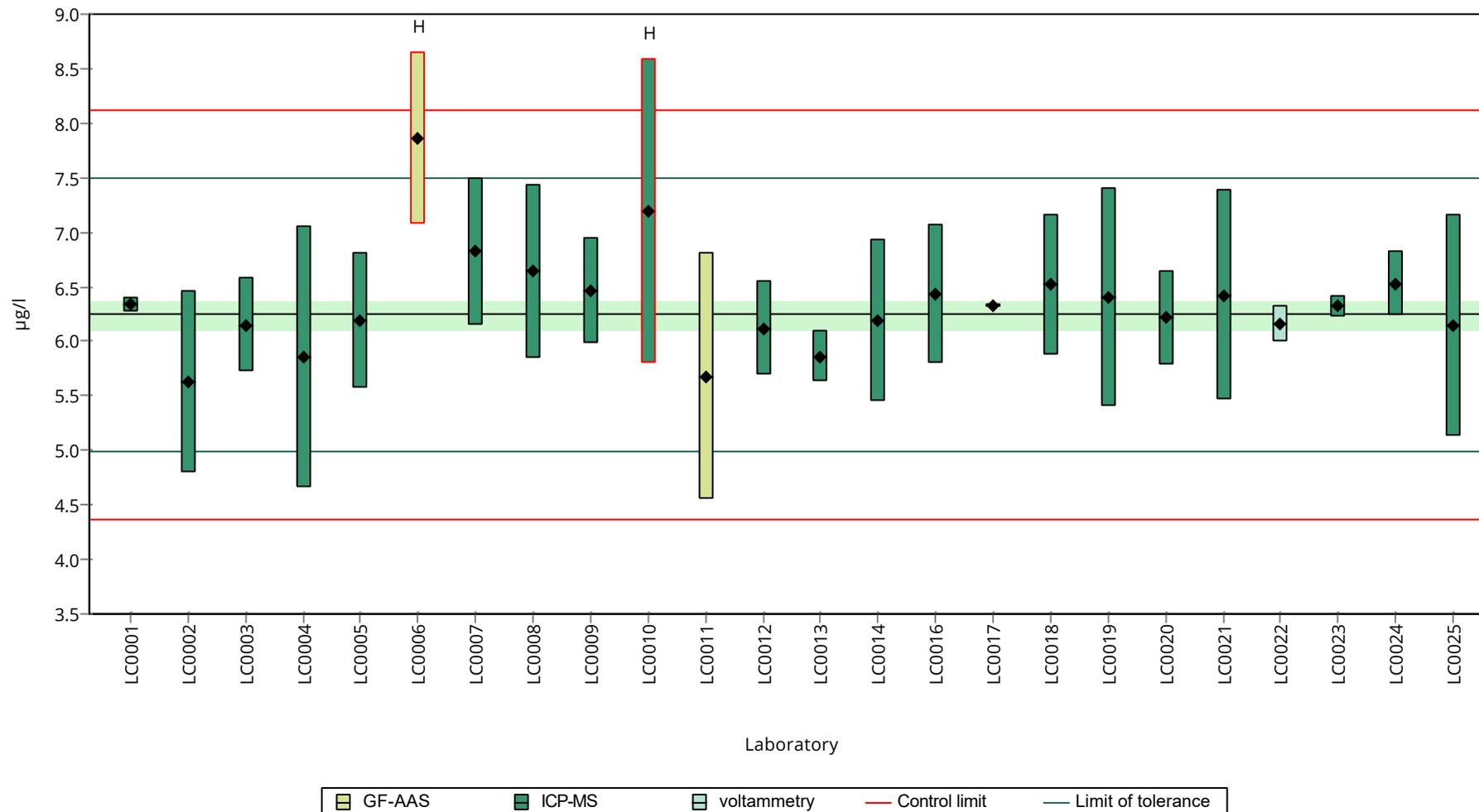
Recovery rate
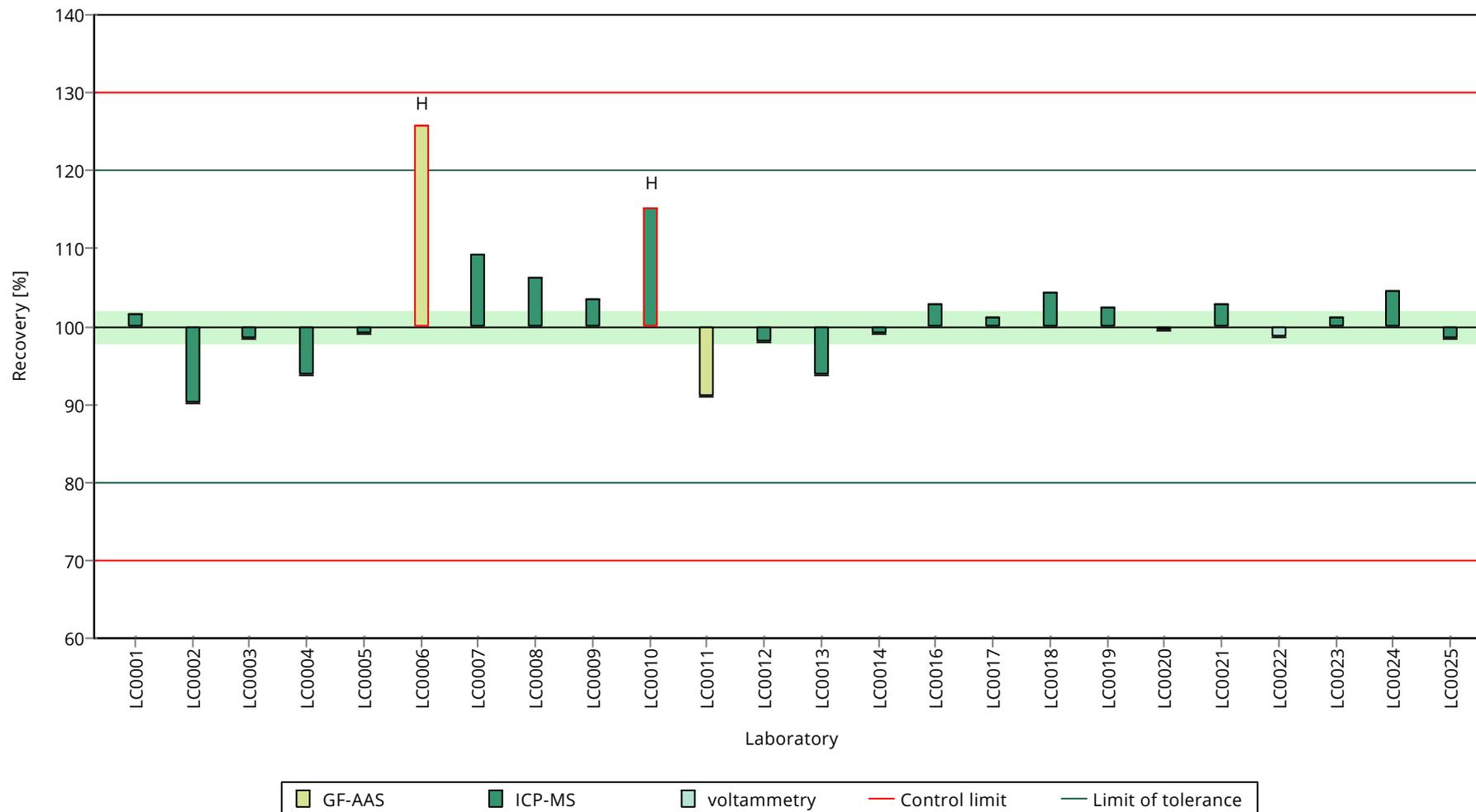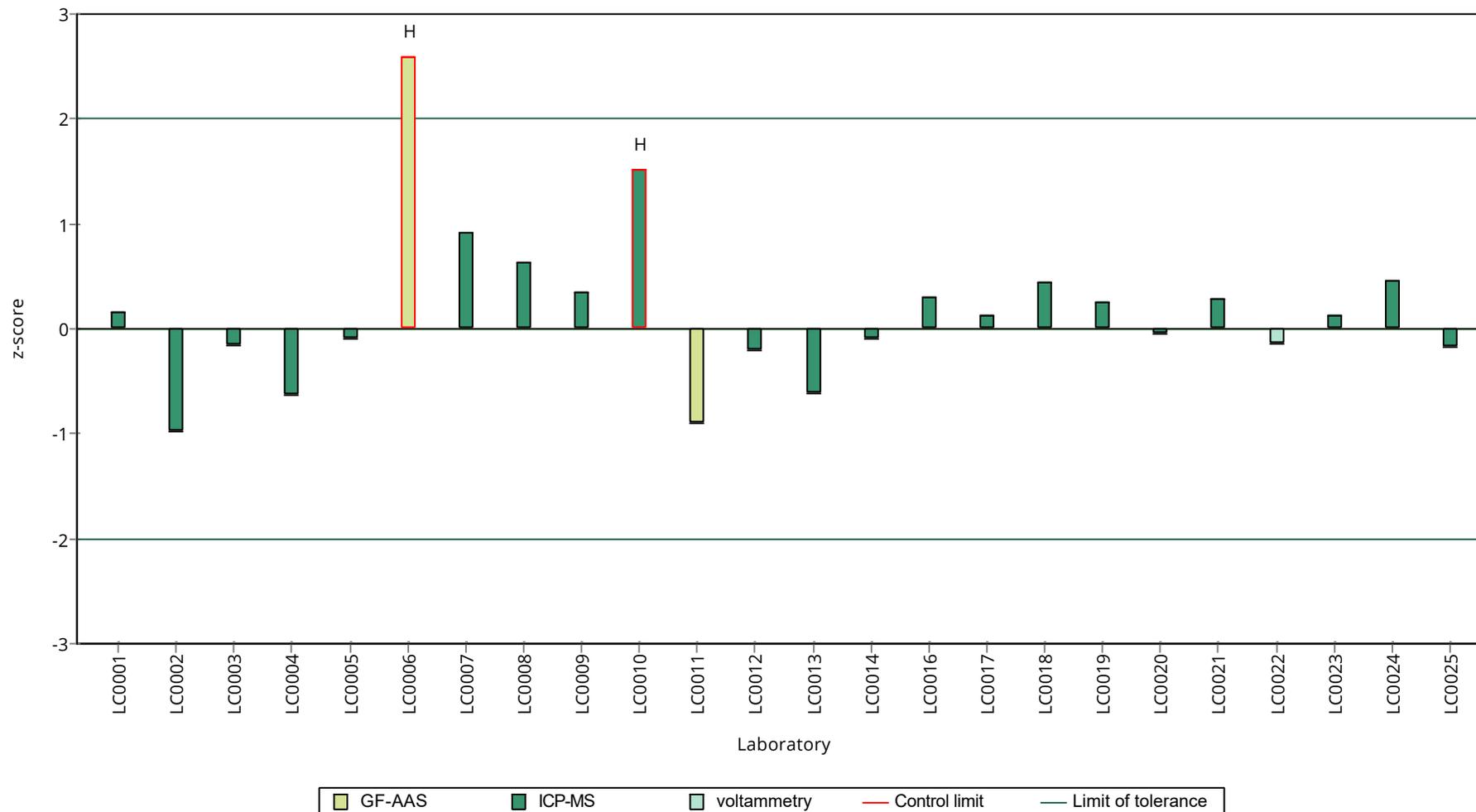
z-Score

Parameter oriented report

M180 A

Chromium

Unit	µg/l
Assigned value ± U (k=2)	2.27 ± 0.0977
Criterion	0.213 (9.4 %)
Minimum - Maximum	2.03 - 2.76
Control test value ± U (k=2)	2.22 ± 0.222

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	2.1 ± 0.012	92.5	-0.8	
LC0002	2.38 ± 0.36	105	0.51	
LC0003	2.12 ± 0.15	93.4	-0.71	
LC0004	2.3 ± 0.46	101	0.14	
LC0005	2.12 ± 0.254	93.4	-0.71	
LC0006	< 5 (LOQ) ± -	-	-	
LC0007	2.25 ± 0.23	99.1	-0.1	
LC0008	2.27 ± 0.34	100	0.00	
LC0009	< 5 (LOQ) ± -	-	-	
LC0010	2.09 ± 0.42	92	-0.85	
LC0011	2.76 ± 0.552	122	2.29	
LC0012	2.29 ± 0.158	101	0.09	
LC0013	2.13 ± 0.192	93.8	-0.66	
LC0014	2.19 ± 0.27	96.5	-0.38	
LC0015	- ± -	-	-	
LC0016	2.07 ± 0.21	91.2	-0.94	
LC0017	4.38 ± 0.088	193	9.88	H
LC0018	2.246 ± 0.225	98.9	-0.12	
LC0019	2.1 ± 0.3	92.5	-0.8	
LC0020	2.67 ± 0.1762	118	1.87	
LC0021	2.4 ± 0.36	106	0.61	
LC0022	- ± -	-	-	
LC0023	2.03 ± 0.127	89.4	-1.13	
LC0024	2.625 ± 0.13	116	1.66	
LC0025	1.55 ± 2.2	68.3	-3.38	H

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	2.34 ± 0.349	2.27 ± 0.147	µg/l
Minimum	1.55	2.03	µg/l
Maximum	4.38	2.76	µg/l
Standard deviation	0.534	0.213	µg/l
rel. standard deviation	22.8	9.38	%
n	21	19	-

Graphical presentation of results

Results

Recovery rate

z-Score

M180 Ausgabe/Edition 1 - 12.03.2026
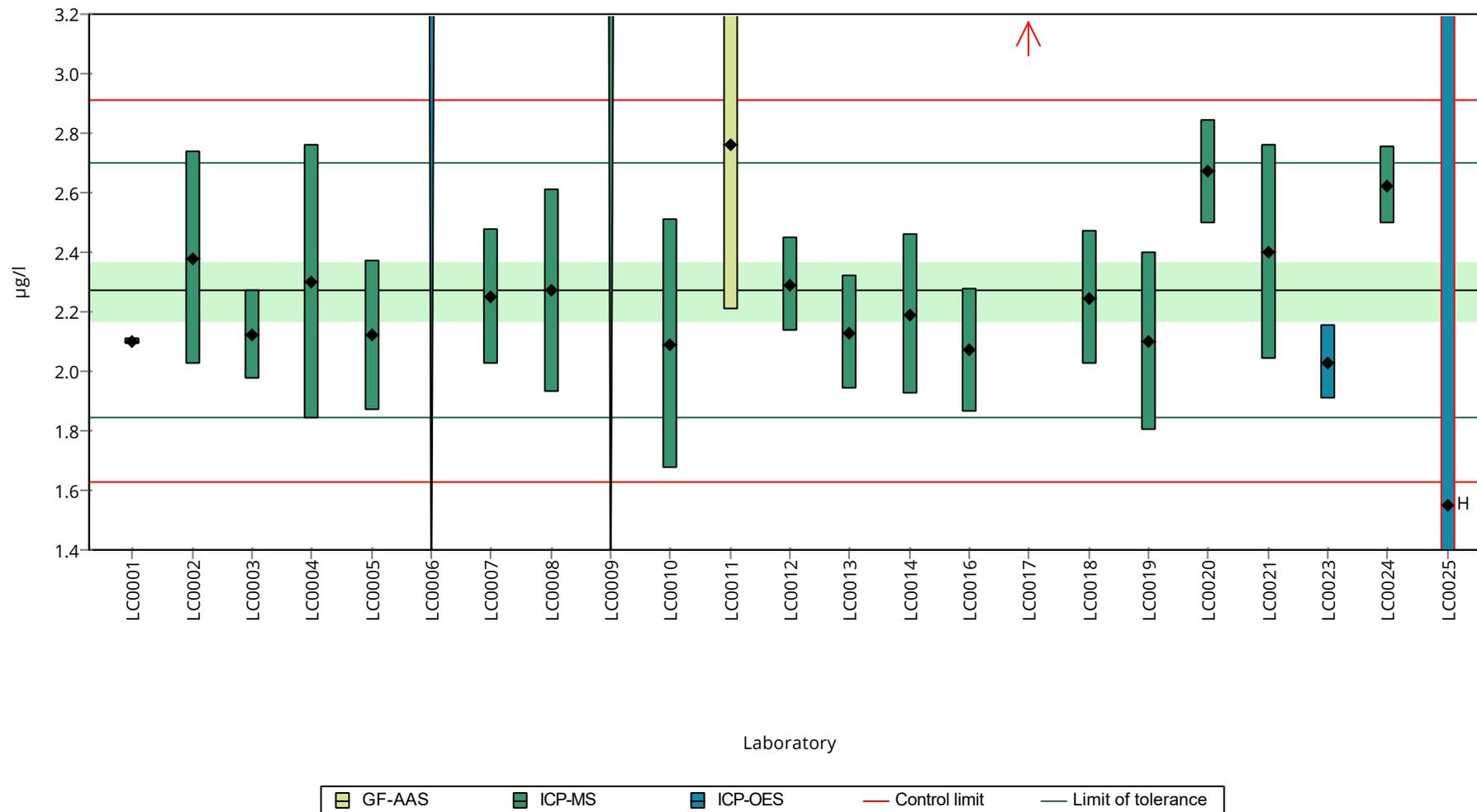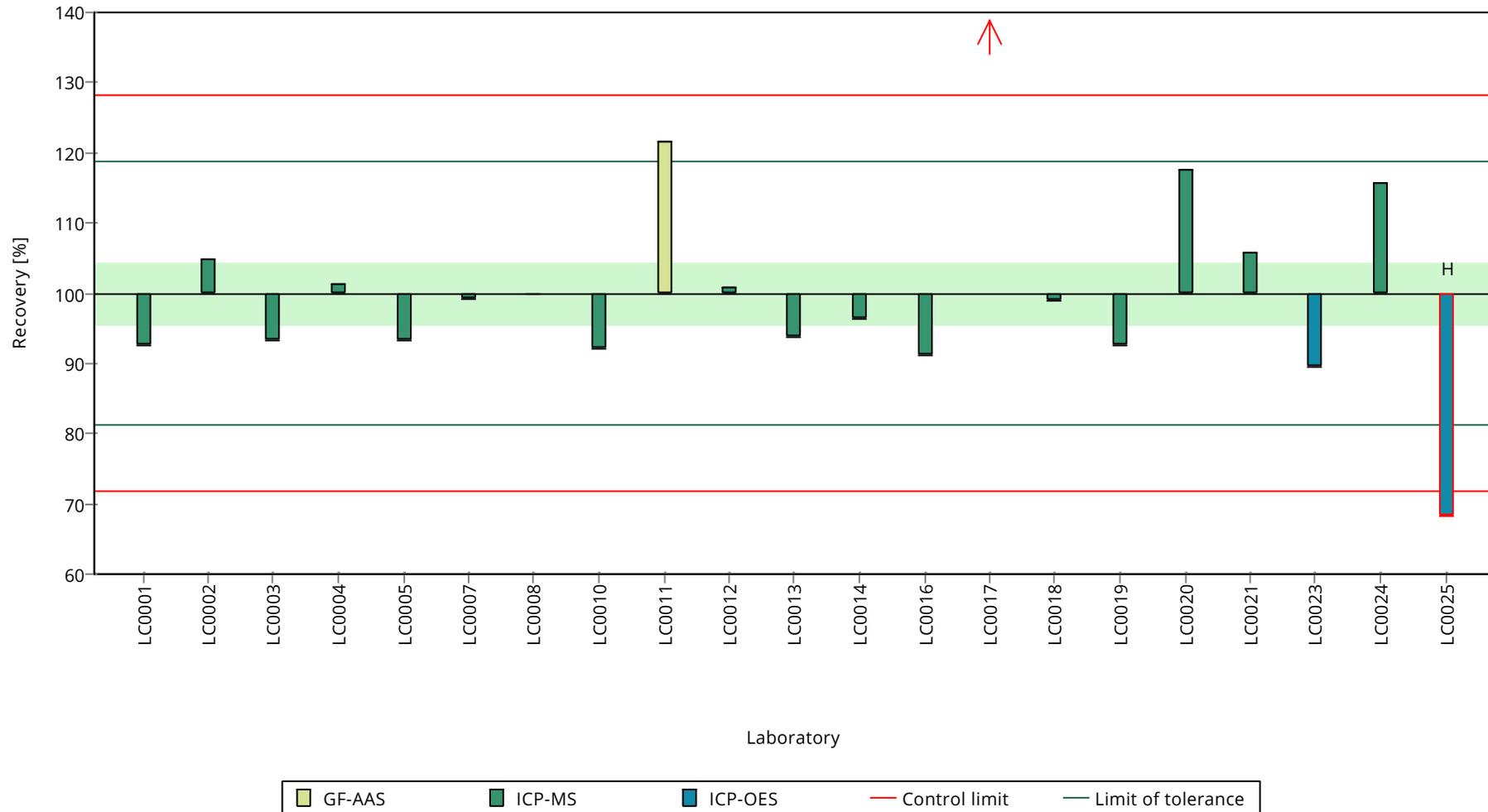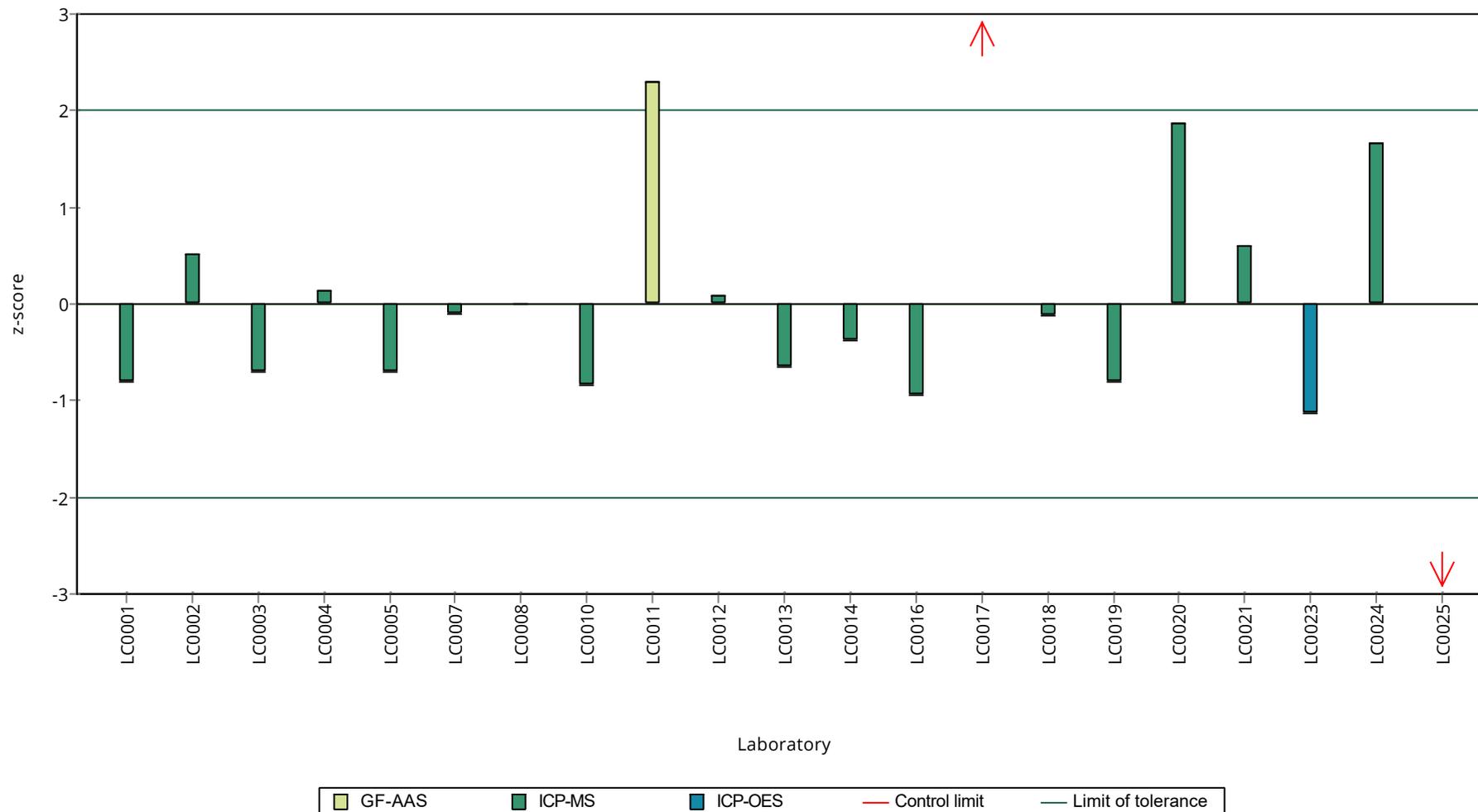
Parameter oriented report

M180 B

Chromium

Unit	µg/l
Assigned value ± U (k=2)	28.2 ± 0.401
Criterion	2.39 (8.5 %)
Minimum - Maximum	26.7 - 29.7
Control test value ± U (k=2)	27.8 ± 2.78

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	27.6 ± 0.1	98	-0.23	
LC0002	29.1 ± 4.36	103	0.39	
LC0003	27.8 ± 1.9	98.7	-0.15	
LC0004	28.5 ± 5.7	101	0.14	
LC0005	26.7 ± 3.21	94.8	-0.61	
LC0006	27 ± 4.32	95.9	-0.48	
LC0007	27.6 ± 2.8	98	-0.23	
LC0008	28.3 ± 4.2	101	0.06	
LC0009	29.69 ± 2.227	105	0.64	
LC0010	27 ± 5.4	95.9	-0.48	
LC0011	54.1 ± 5.82	192	10.84	H
LC0012	29.1 ± 2	103	0.39	
LC0013	26.8 ± 2.41	95.2	-0.57	
LC0014	28.62 ± 3.5	102	0.19	
LC0015	- ± -	-	-	
LC0016	28.5 ± 2.9	101	0.14	
LC0017	26.79 ± 0.0616	95.1	-0.57	
LC0018	28.856 ± 2.886	102	0.29	
LC0019	28.4 ± 4.3	101	0.1	
LC0020	32.335 ± 2.1341	115	1.74	H
LC0021	29 ± 4.35	103	0.35	
LC0022	- ± -	-	-	
LC0023	29.4 ± 0.405	104	0.52	
LC0024	28.58 ± 1.07	101	0.18	
LC0025	28 ± 5	99.4	-0.07	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	29.5 ± 3.45	28.2 ± 0.601	µg/l
Minimum	26.7	26.7	µg/l
Maximum	54.1	29.7	µg/l
Standard deviation	5.51	0.918	µg/l
rel. standard deviation	18.7	3.26	%
n	23	21	-

UMWELT BUNDES AMT

Graphical presentation of results
Results

Laboratory

Legend: ICP-MS | ICP-OES | Control limit | Limit of tolerance
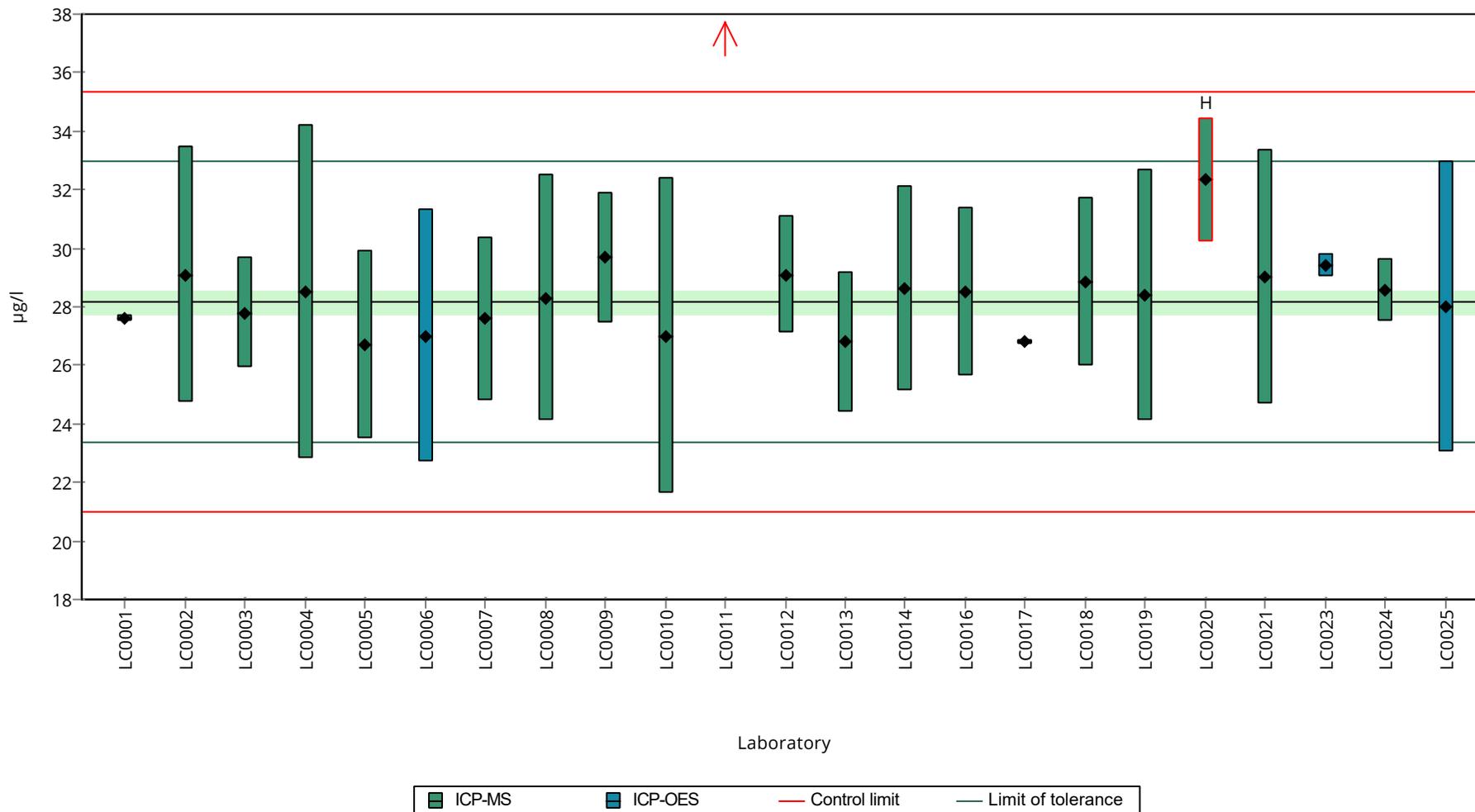
Recovery rate
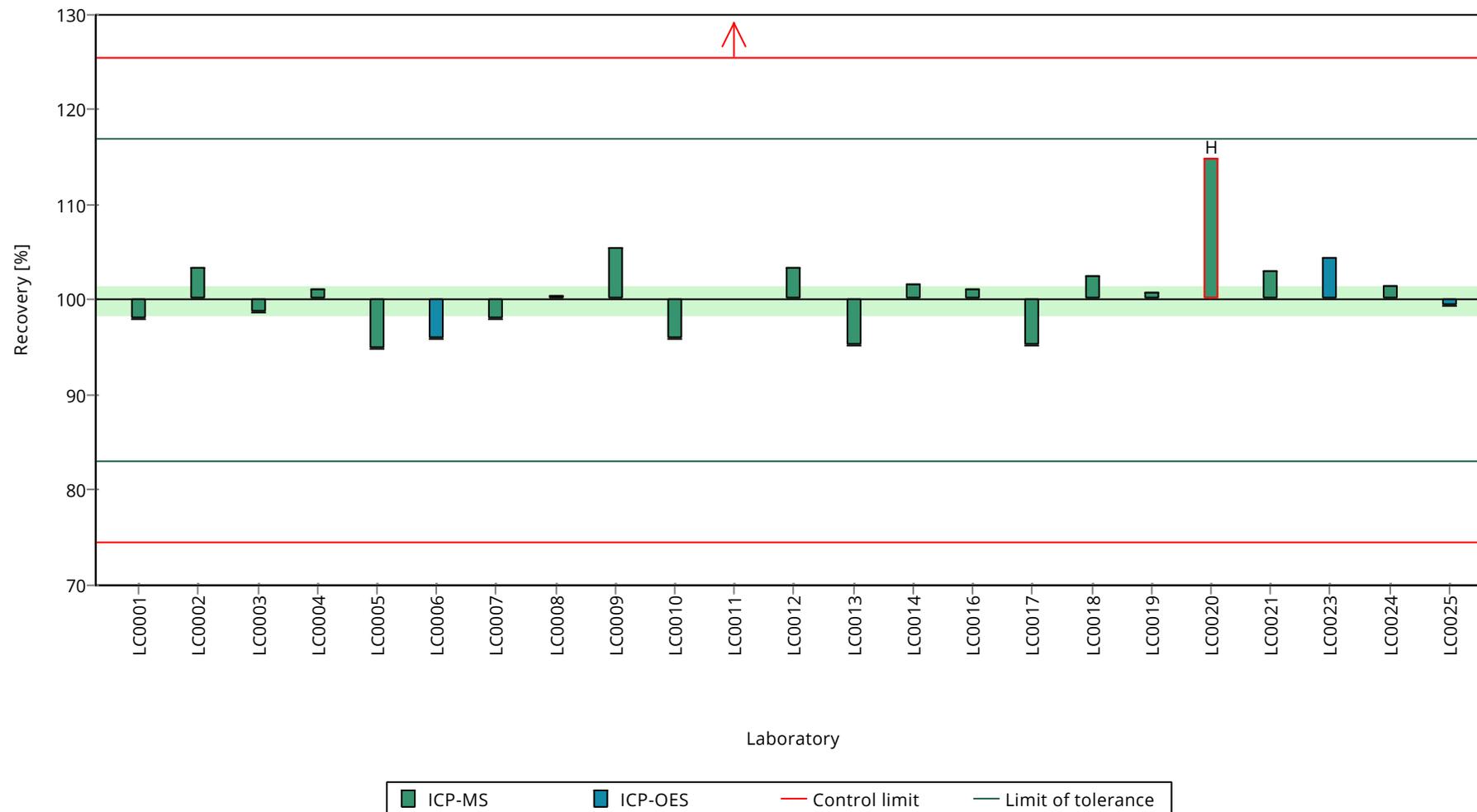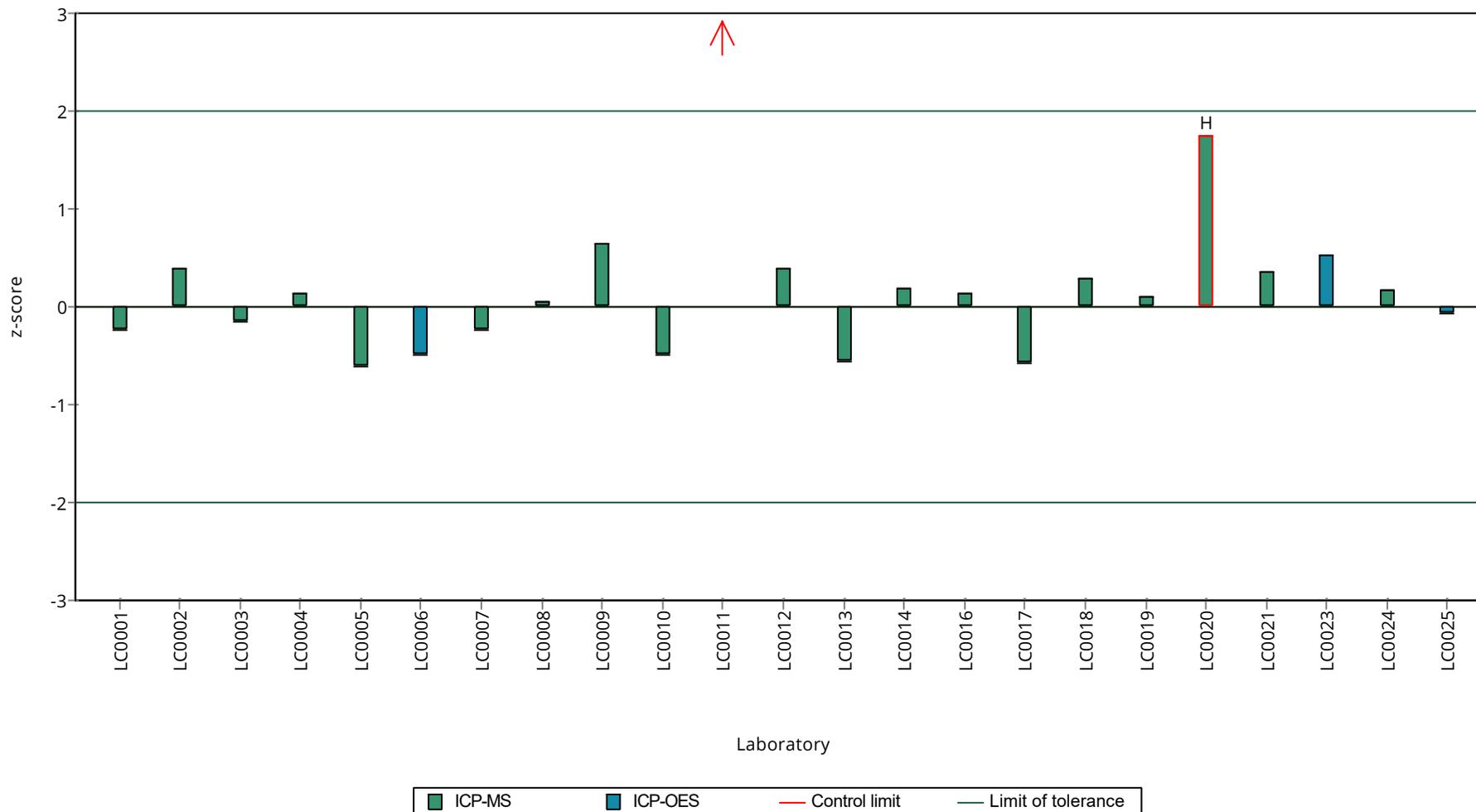
z-Score

Parameter oriented report

M180 A

Copper

Unit	µg/l
Assigned value ± U (k=2)	12.5 ± 0.346
Criterion	1.13 (9 %)
Minimum - Maximum	11 - 14.2
Control test value ± U (k=2)	12.4 ± 2.11

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	12.8 ± 0.058	102	0.25	
LC0002	12.7 ± 1.9	101	0.16	
LC0003	12 ± 0.8	95.9	-0.46	
LC0004	13 ± 2.6	104	0.43	
LC0005	65.3 ± 7.83	522	46.86	H
LC0006	14.15 ± 2.12	113	1.45	
LC0007	11 ± 1.1	87.9	-1.35	
LC0008	13 ± 1.6	104	0.43	
LC0009	< 50 (LOQ) ± -	-	-	
LC0010	12.7 ± 2.5	101	0.16	
LC0011	9.6 ± 1.92	76.7	-2.59	H
LC0012	12.1 ± 0.83	96.7	-0.37	
LC0013	11.4 ± 0.684	91.1	-0.99	
LC0014	12.92 ± 1.71	103	0.36	
LC0015	- ± -	-	-	
LC0016	11.99 ± 1.2	95.8	-0.47	
LC0017	11.73 ± 0.184	93.7	-0.7	
LC0018	13.199 ± 1.32	105	0.61	
LC0019	12.3 ± 1.8	98.3	-0.19	
LC0020	12.621 ± 1.4009	101	0.09	
LC0021	13.2 ± 1.98	105	0.61	
LC0022	13.1 ± 0.77	105	0.52	
LC0023	12.8 ± 0.363	102	0.25	
LC0024	10.96 ± 0.37	87.6	-1.38	
LC0025	13.16 ± 2.5	105	0.57	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	14.7 ± 6.93	12.5 ± 0.519	µg/l
Minimum	9.6	11	µg/l
Maximum	65.3	14.2	µg/l
Standard deviation	11.1	0.793	µg/l
rel. standard deviation	75.4	6.34	%
n	23	21	-

Graphical presentation of results
Results

Laboratory

| GF-AAS | ICP-MS | ICP-OES | voltammetry | —— Control limit | —— Limit of tolerance |

Recovery rate

z-Score

Laboratory

| GF-AAS | ICP-MS | ICP-OES | voltammetry | —— Control limit | —— Limit of tolerance |
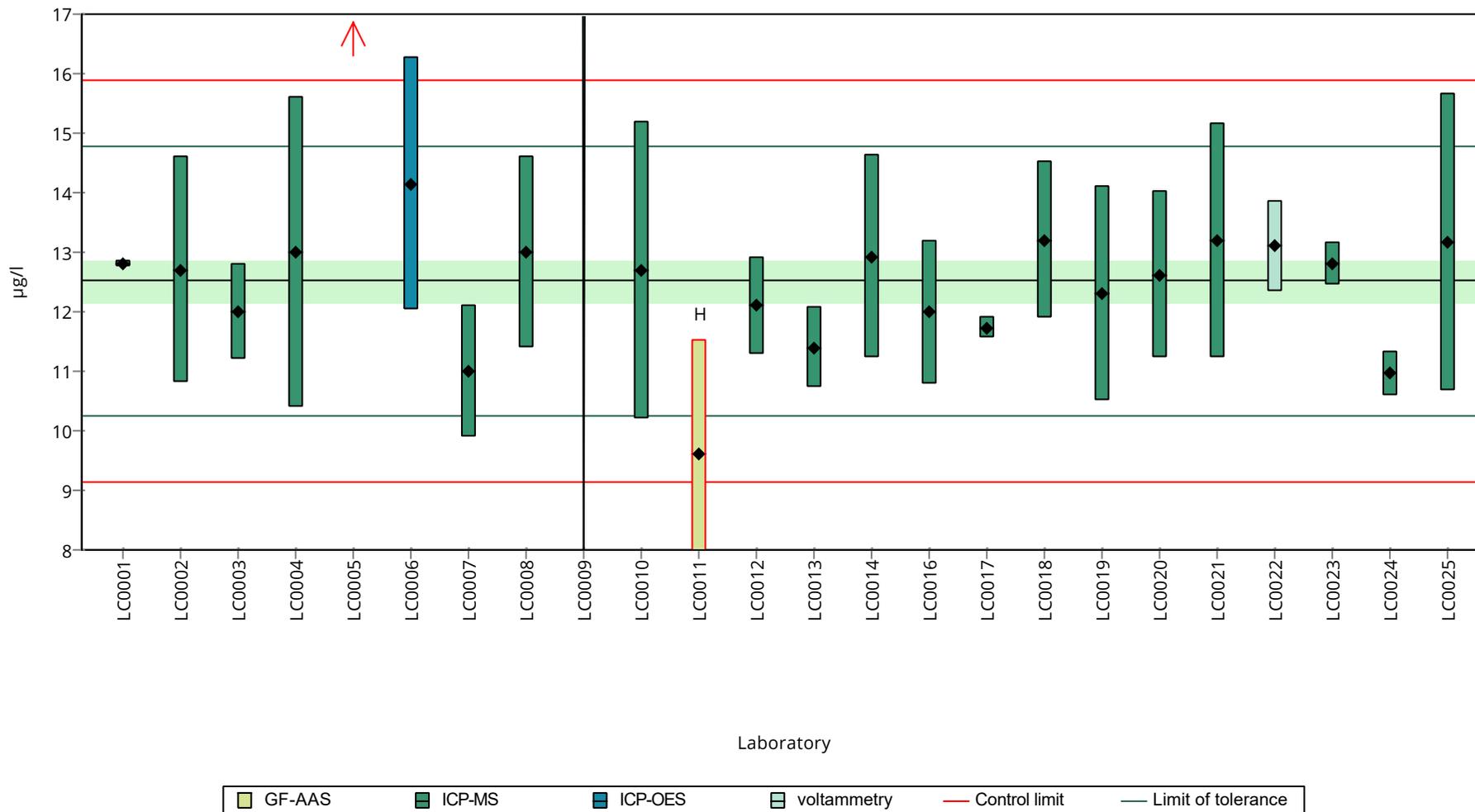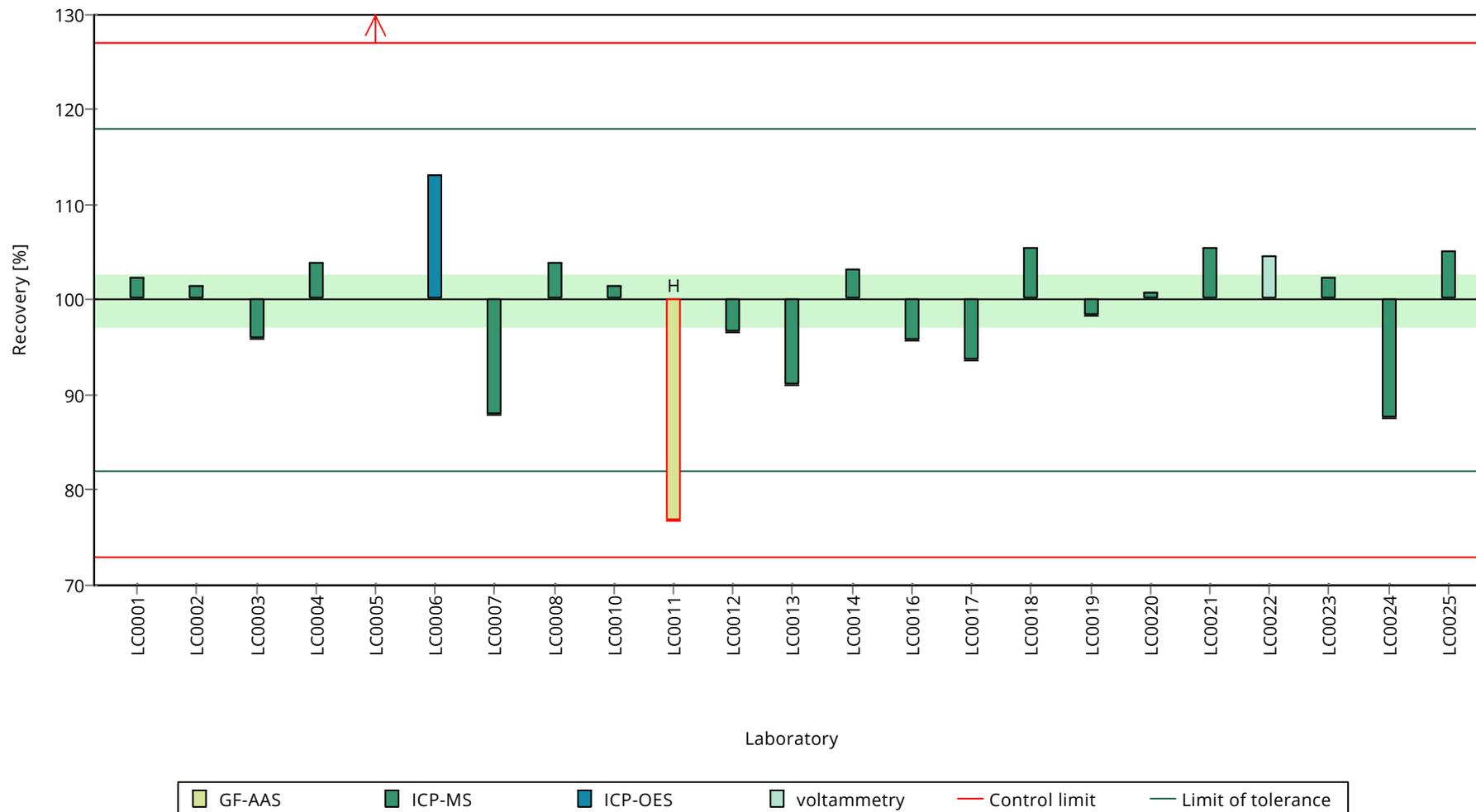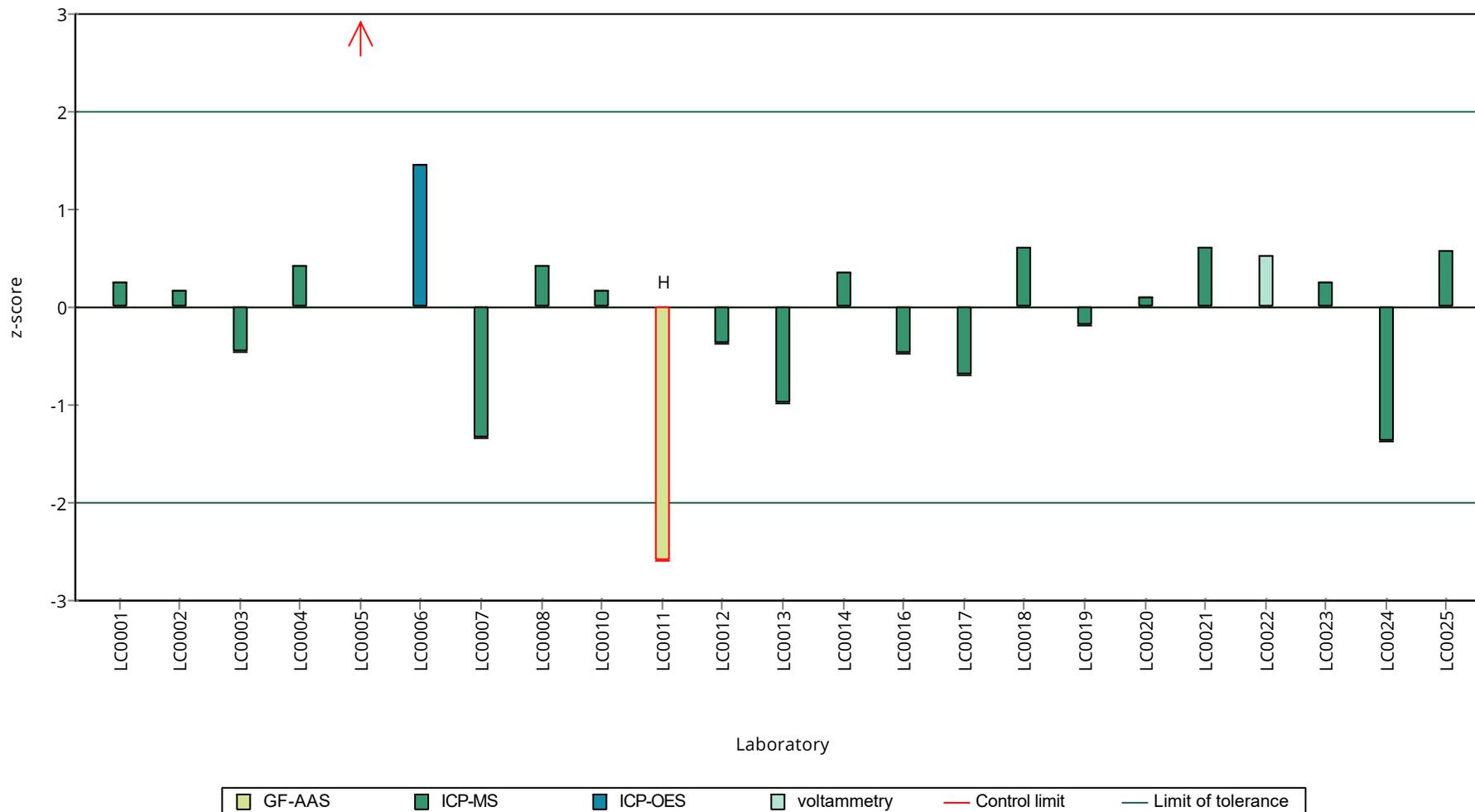
Parameter oriented report

M180 B

Copper

Unit	µg/l
Assigned value ± U (k=2)	83.1 ± 1.3
Criterion	7.48 (9 %)
Minimum - Maximum	76.3 - 87.5
Control test value ± U (k=2)	79.5 ± 13.5

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	84.7 ± 0.85	102	0.22	
LC0002	80.2 ± 12	96.6	-0.38	
LC0003	78 ± 5.5	93.9	-0.68	
LC0004	86.5 ± 17	104	0.46	
LC0005	471 ± 56.6	567	51.89	H
LC0006	82.1 ± 12.32	98.8	-0.13	
LC0007	84 ± 8.4	101	0.13	
LC0008	86.5 ± 10	104	0.46	
LC0009	87.54 ± 13.131	105	0.6	
LC0010	104 ± 21	125	2.8	H
LC0011	76.3 ± 5.26	91.9	-0.9	
LC0012	85.2 ± 5.85	103	0.29	
LC0013	77.8 ± 4.67	93.7	-0.7	
LC0014	85.13 ± 11.2	102	0.28	
LC0015	- ± -	-	-	
LC0016	84.4 ± 8.4	102	0.18	
LC0017	80.81 ± 0.388	97.3	-0.3	
LC0018	84.879 ± 8.488	102	0.24	
LC0019	84.1 ± 12.6	101	0.14	
LC0020	82.476 ± 9.1548	99.3	-0.08	
LC0021	84 ± 12.6	101	0.13	
LC0022	83.3 ± 4.9	100	0.03	
LC0023	80.7 ± 0.332	97.2	-0.32	
LC0024	82.1 ± 3.67	98.8	-0.13	
LC0025	86.7 ± 13.9	104	0.49	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	100 ± 48.5	83.1 ± 1.96	µg/l
Minimum	76.3	76.3	µg/l
Maximum	471	87.5	µg/l
Standard deviation	79.2	3.06	µg/l
rel. standard deviation	79.1	3.68	%
n	24	22	-

Graphical presentation of results
Results

Laboratory

| GF-AAS | ICP-MS | ICP-OES | voltammetry | Control limit | Limit of tolerance |

Recovery rate

z-Score

Laboratory

| | GF-AAS | | ICP-MS | | ICP-OES | | voltammetry | — Control limit | — Limit of tolerance |
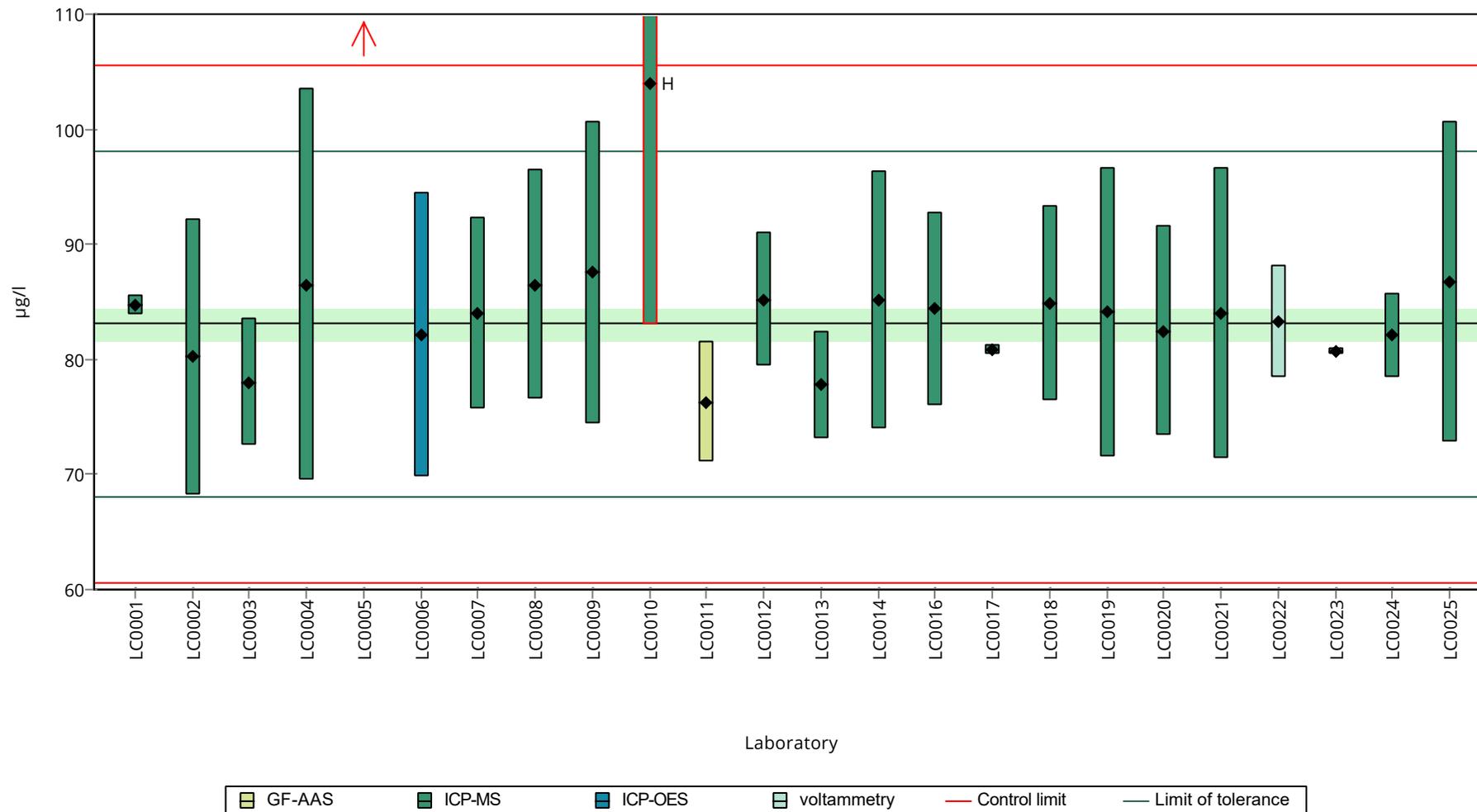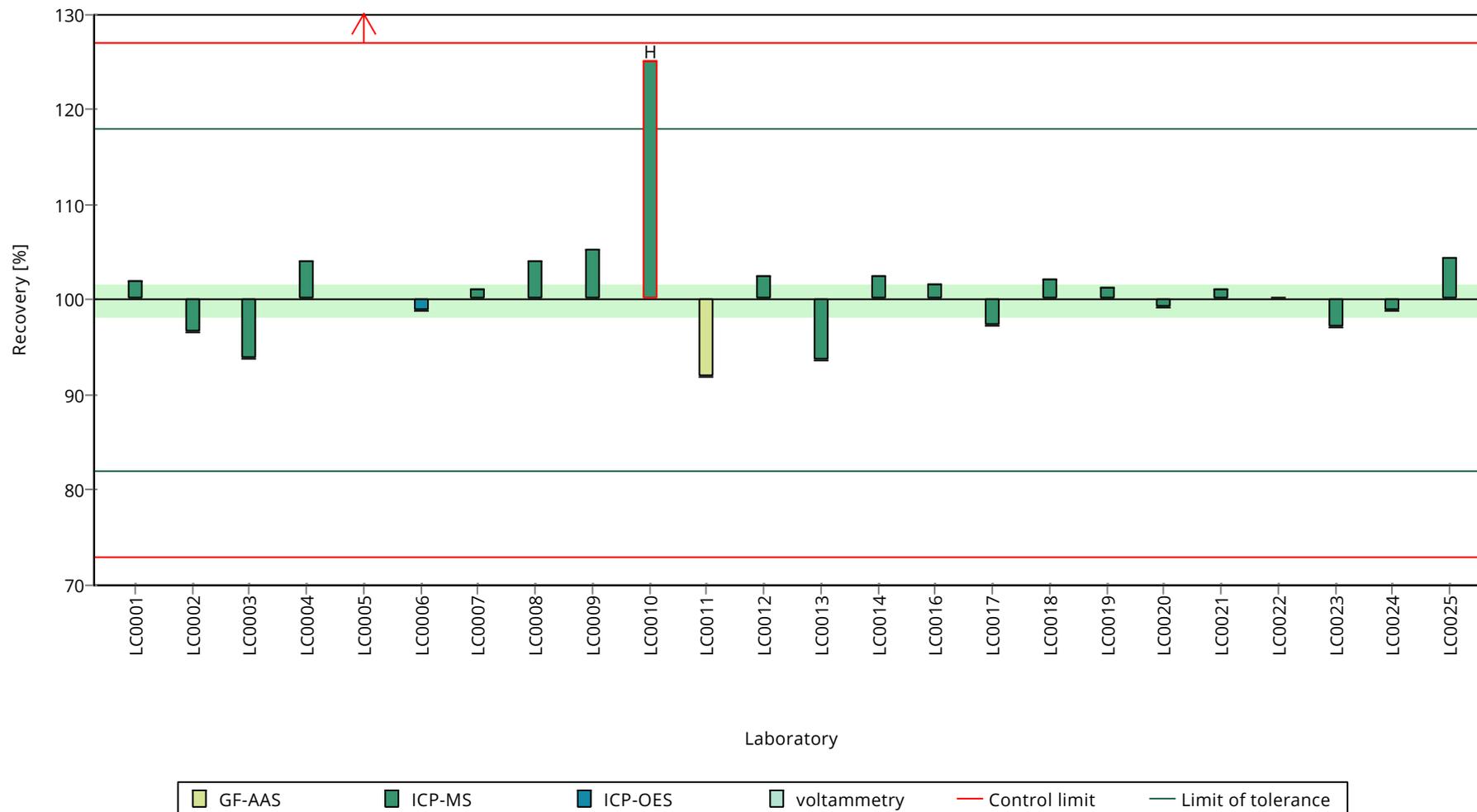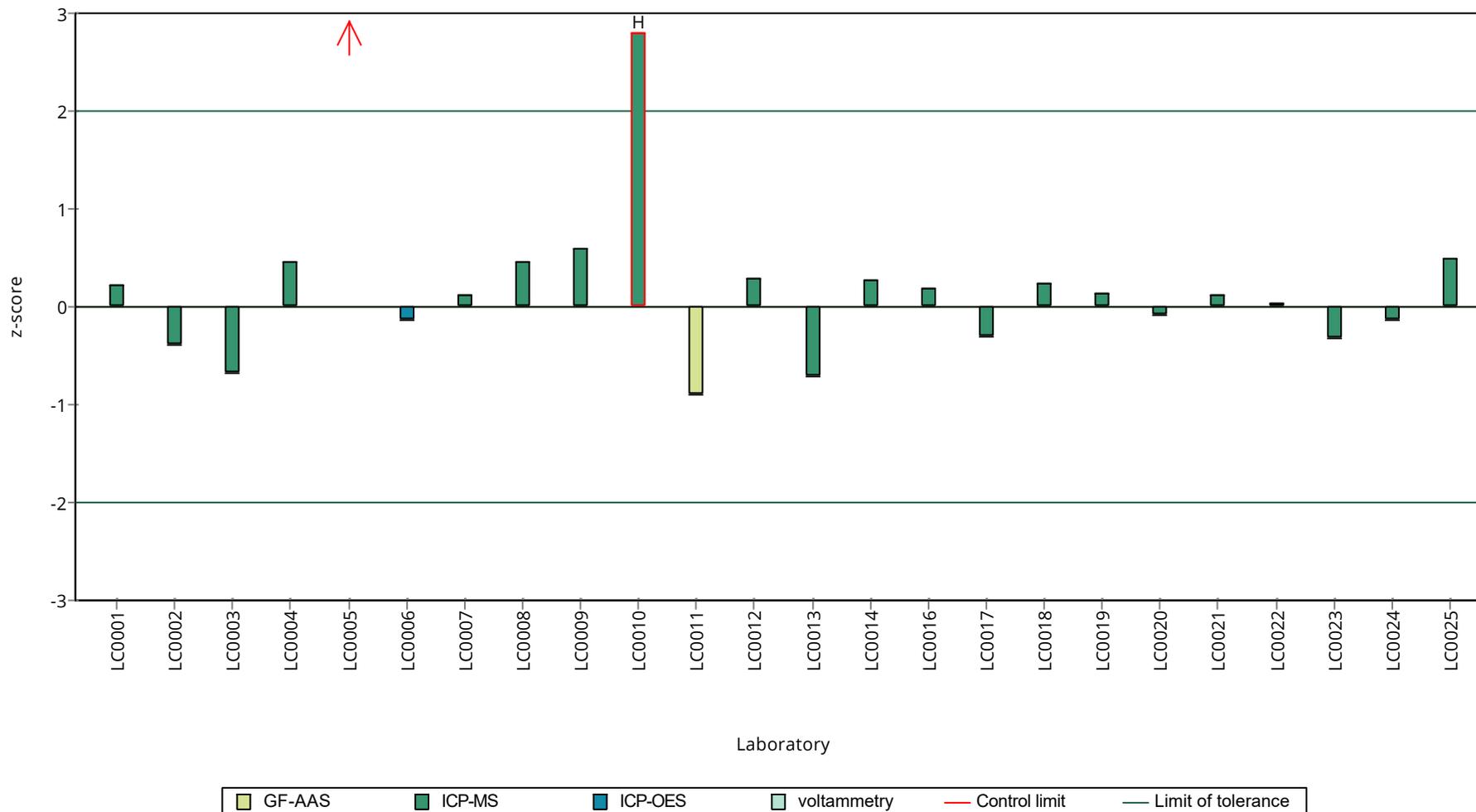
Parameter oriented report

M180 A

Iron

Unit	µg/l
Assigned value ± U (k=2)	66.6 ± 1.43
Criterion	7.33 (11 %)
Minimum - Maximum	59.4 - 72.2
Control test value ± U (k=2)	67.8 ± 6.78

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	65.3 ± 0.212	98	-0.18	
LC0002	72.2 ± 10.8	108	0.76	
LC0003	64.5 ± 4.5	96.8	-0.29	
LC0004	64.5 ± 13	96.8	-0.29	
LC0005	12.8 ± 1.4	19.2	-7.34	H
LC0006	59.42 ± 8.319	89.2	-0.98	
LC0007	65.9 ± 6.6	98.9	-0.1	
LC0008	68.7 ± 10	103	0.29	
LC0009	69.11 ± 6.911	104	0.34	
LC0010	- ± -	-	-	
LC0011	- ± -	-	-	
LC0012	81.8 ± 5.17	123	2.07	H
LC0013	68.7 ± 3.44	103	0.29	
LC0014	67.62 ± 9.4	102	0.14	
LC0015	66 ± 8.53	99.1	-0.08	
LC0016	66.8 ± 6.7	100	0.03	
LC0017	28.82 ± 1.022	43.3	-5.16	H
LC0018	51.05 ± 5.105	76.6	-2.12	H
LC0019	66.9 ± 10	100	0.04	
LC0020	- ± -	-	-	
LC0021	69 ± 17.94	104	0.33	
LC0022	69.5 ± 3.1	104	0.4	
LC0023	65 ± 0.559	97.6	-0.22	
LC0024	79.75 ± 1.95	120	1.79	H
LC0025	63.1 ± 8.5	94.7	-0.48	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	63 ± 9.7	66.6 ± 2.15	µg/l
Minimum	12.8	59.4	µg/l
Maximum	81.8	72.2	µg/l
Standard deviation	15.2	2.95	µg/l
rel. standard deviation	24.1	4.43	%
n	22	17	-

Graphical presentation of results
Results
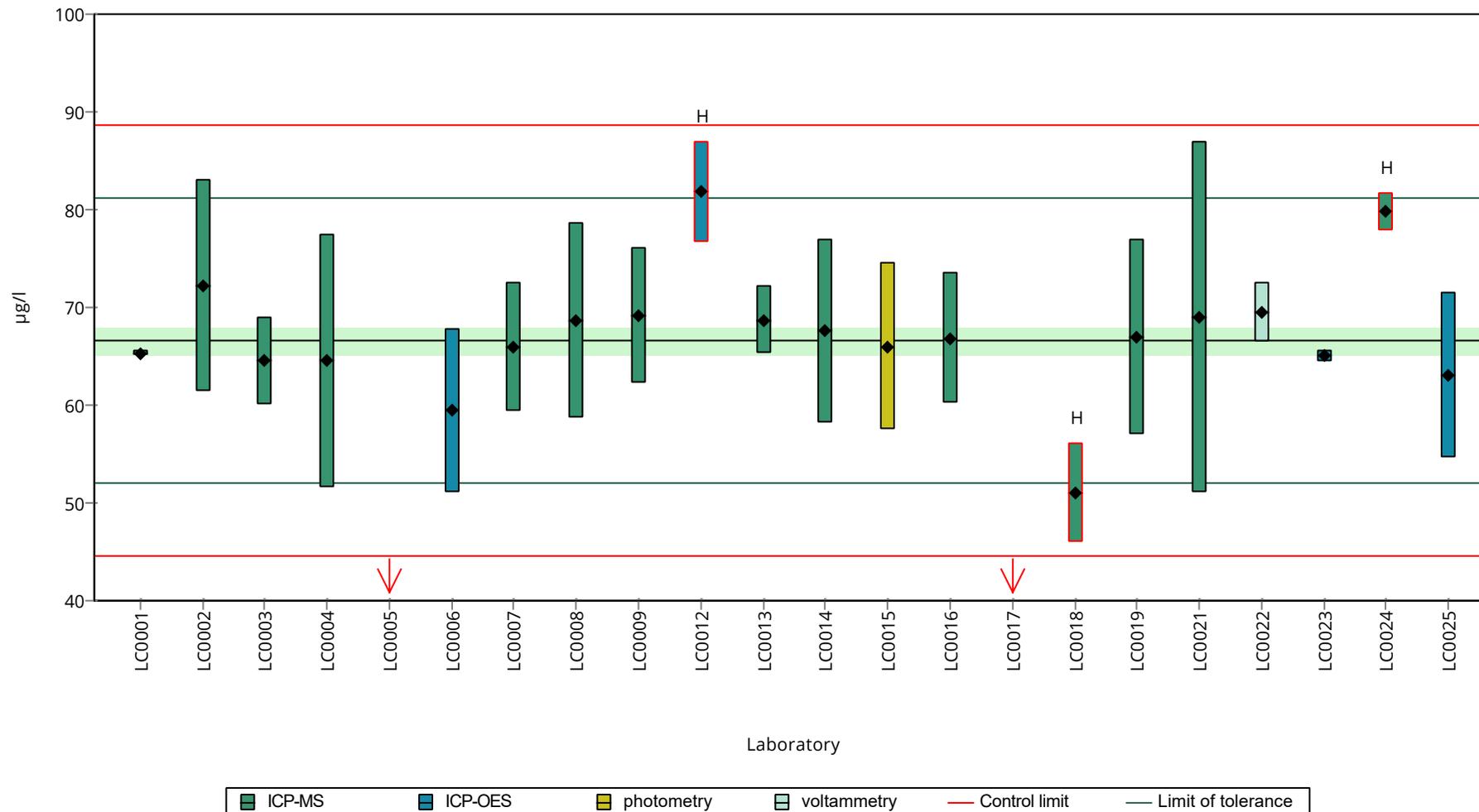
Recovery rate
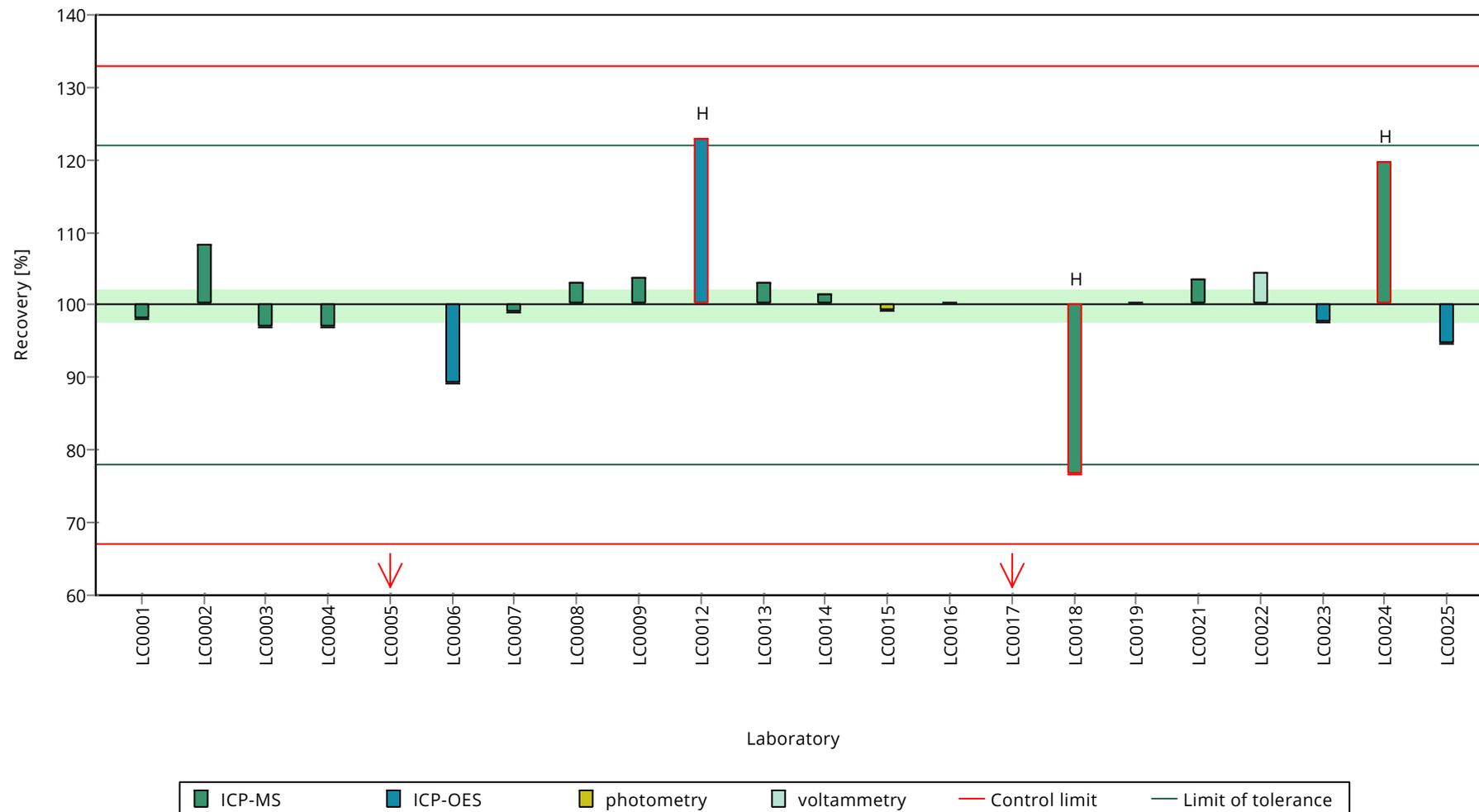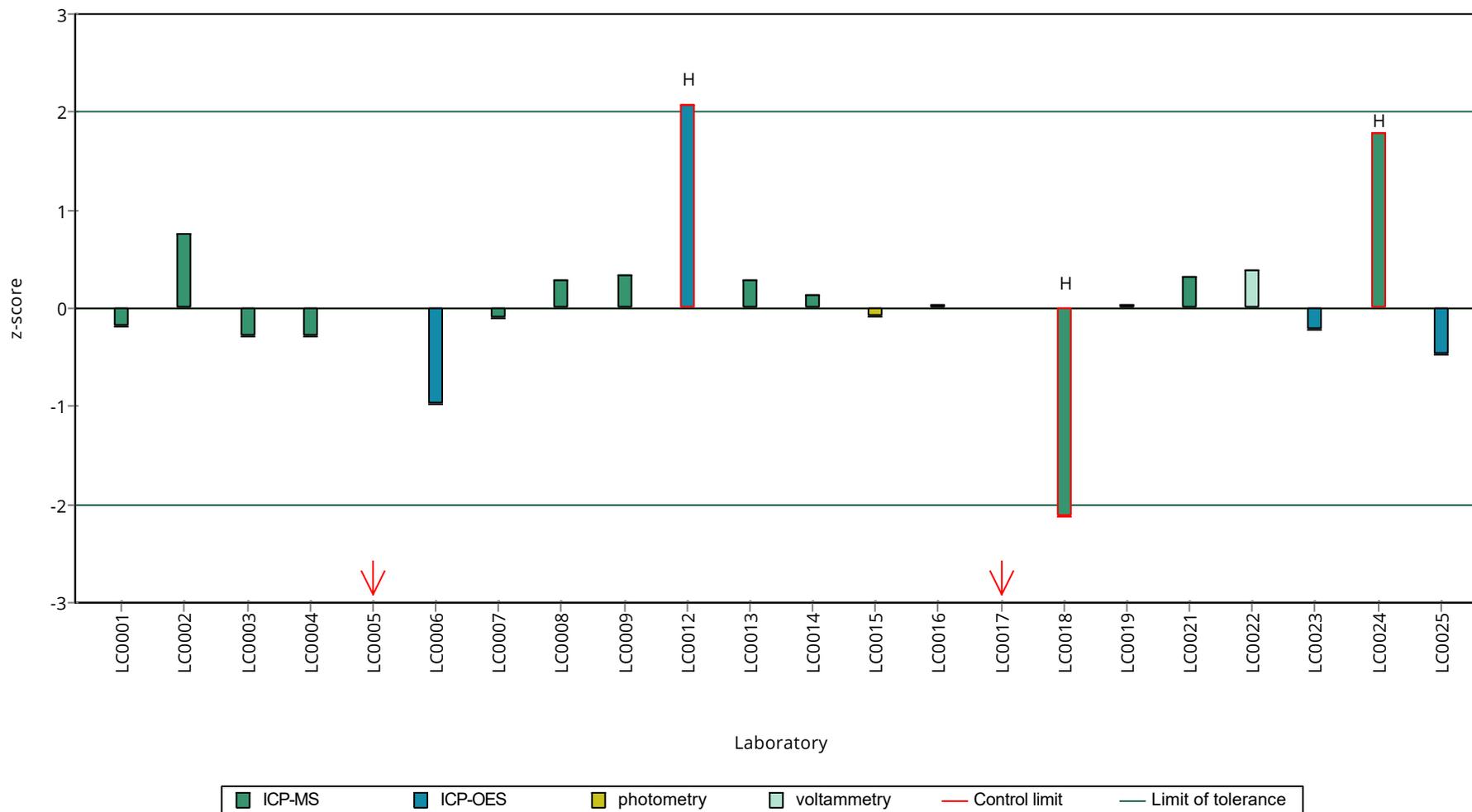
z-Score

Parameter oriented report

M180 B

Iron

Unit	µg/l
Assigned value ± U (k=2)	478 ± 9.93
Criterion	52.6 (11 %)
Minimum - Maximum	436 - 517
Control test value ± U (k=2)	477 ± 47.7

Labcode	Result ± U		Recovery [%]	z-Score	Comments
LC0001	479 ±	4.95	100	0.02	
LC0002	517 ±	77.5	108	0.75	
LC0003	375 ±	26	78.5	-1.96	H
LC0004	455 ±	91	95.2	-0.43	
LC0005	84.7 ±	9.32	17.7	-7.48	H
LC0006	497.7 ±	69.68	104	0.38	
LC0007	455 ±	45.5	95.2	-0.43	
LC0008	494 ±	74	103	0.31	
LC0009	494.8 ±	37.11	104	0.32	
LC0010	- ±	-	-	-	
LC0011	- ±	-	-	-	
LC0012	490 ±	30.9	103	0.23	
LC0013	442 ±	22.1	92.5	-0.68	
LC0014	475 ±	66	99.4	-0.05	
LC0015	436 ±	56.4	91.3	-0.8	
LC0016	469 ±	47	98.2	-0.17	
LC0017	187.81 ±	0.887	39.3	-5.52	H
LC0018	467.732 ±	46.773	97.9	-0.19	
LC0019	487 ±	73.1	102	0.18	
LC0020	- ±	-	-	-	
LC0021	499 ±	129.7	104	0.4	
LC0022	481 ±	2.2	101	0.06	
LC0023	502 ±	3.37	105	0.46	
LC0024	479.41 ±	5.485	100	0.03	
LC0025	457.5 ±	50.4	95.8	-0.39	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	442 ± 66.9	478 ± 14.9	µg/l
Minimum	84.7	436	µg/l
Maximum	517	517	µg/l
Standard deviation	105	21.6	µg/l
rel. standard deviation	23.6	4.53	%
n	22	19	-

Graphical presentation of results
Results
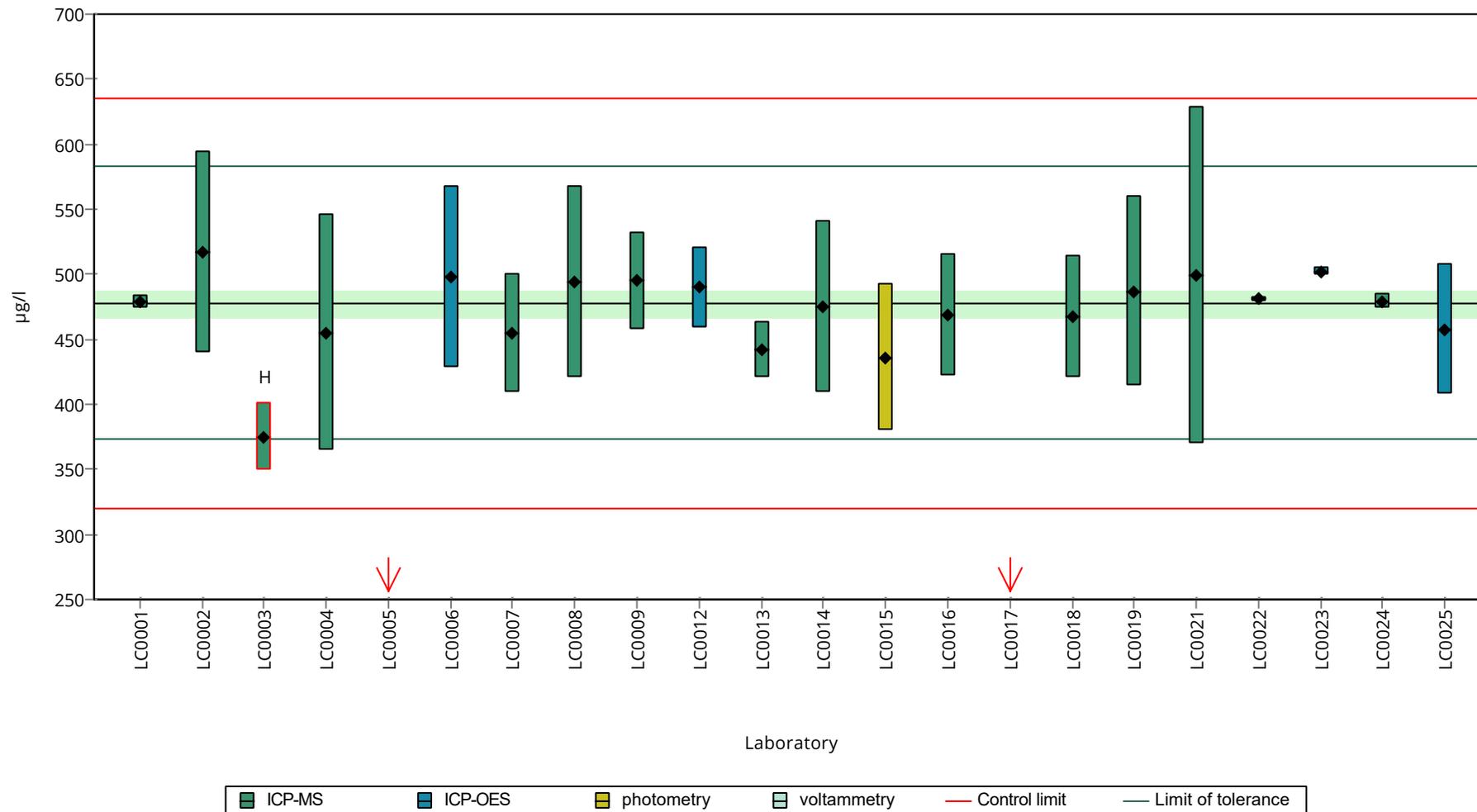
Recovery rate
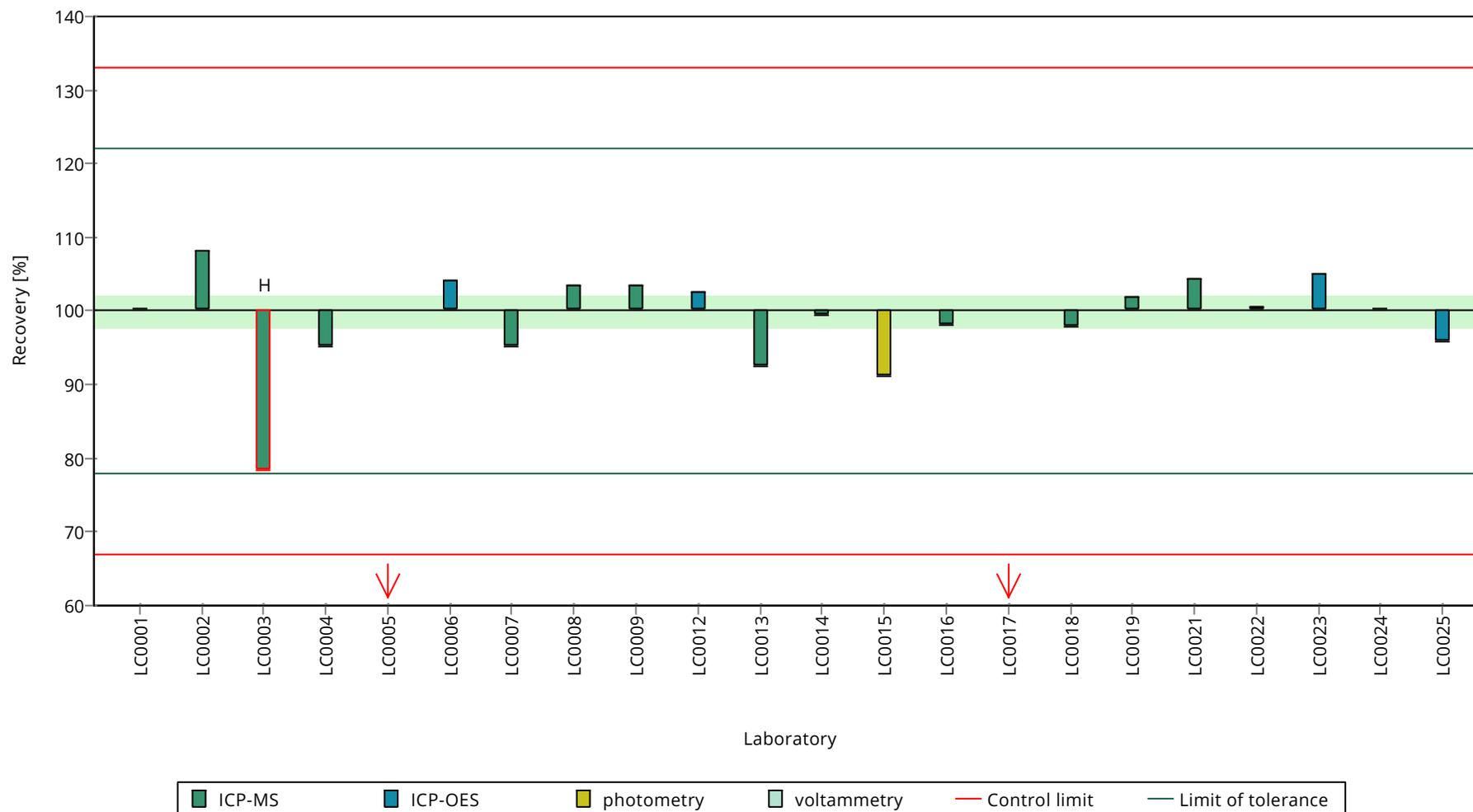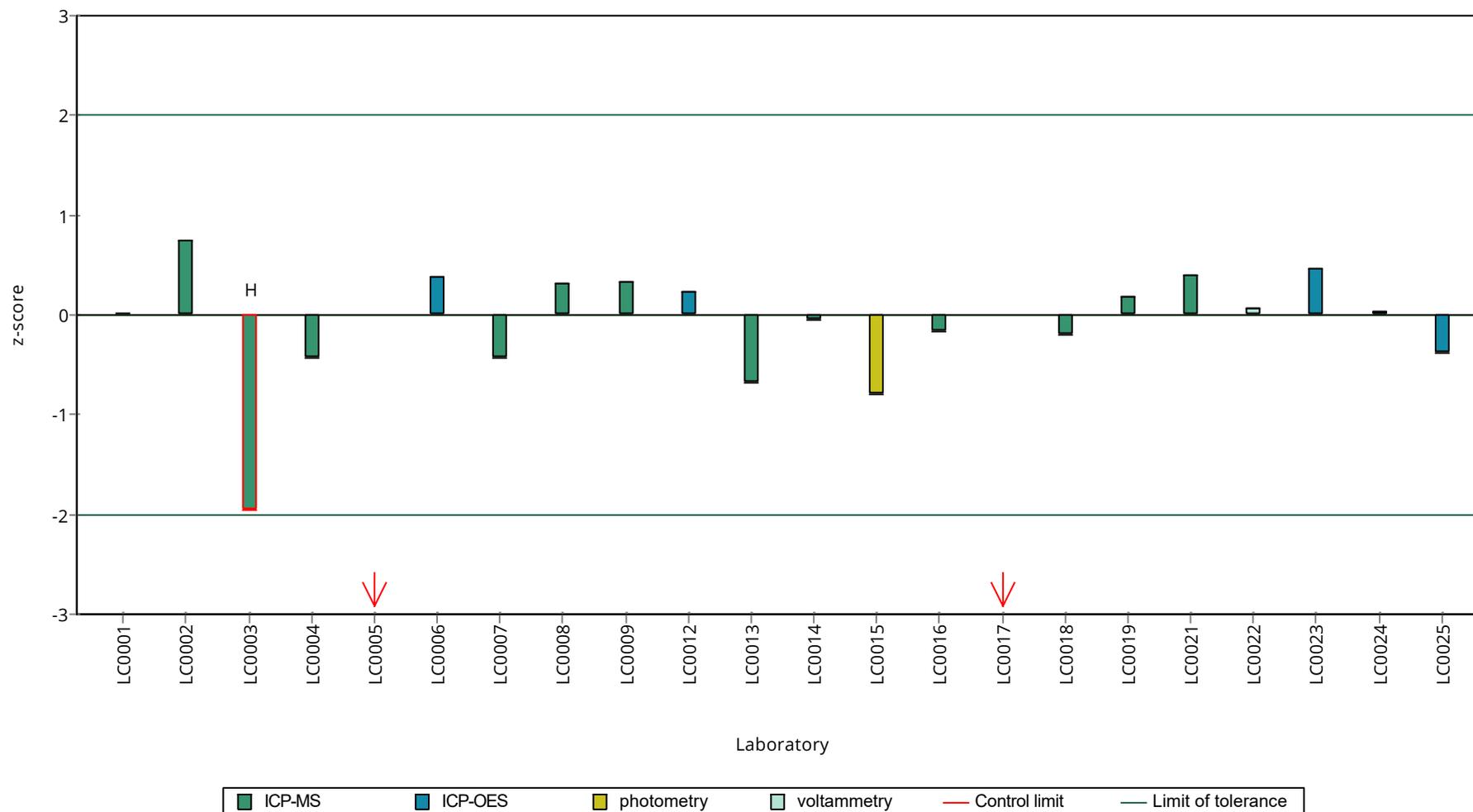
z-Score

Parameter oriented report

M180 A

Lead

Unit	µg/l
Assigned value ± U (k=2)	2.16 ± 0.072
Criterion	0.216 (10 %)
Minimum - Maximum	1.89 - 2.54
Control test value ± U (k=2)	2.03 ± 0.203

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	2.15 ± 0.021	99.6	-0.04	
LC0002	2.3 ± 0.35	107	0.66	
LC0003	2.14 ± 0.15	99.2	-0.08	
LC0004	2.25 ± 0.45	104	0.43	
LC0005	2.38 ± 0.238	110	1.03	
LC0006	2.22 ± 0.155	103	0.29	
LC0007	1.97 ± 0.2	91.3	-0.87	
LC0008	2.54 ± 0.3	118	1.77	
LC0009	2.15 ± 0.215	99.6	-0.04	
LC0010	1.95 ± 0.39	90.4	-0.96	
LC0011	1.35 ± 0.27	62.6	-3.74	H
LC0012	2.27 ± 0.158	105	0.52	
LC0013	1.91 ± 0.172	88.5	-1.15	
LC0014	2.17 ± 0.32	101	0.06	
LC0015	- ± -	-	-	
LC0016	2.04 ± 0.2	94.5	-0.55	
LC0017	1.96 ± 0.051	90.8	-0.92	
LC0018	1.904 ± 0.19	88.2	-1.18	
LC0019	2.2 ± 0.3	102	0.2	
LC0020	1.894 ± 0.142	87.8	-1.22	
LC0021	2.4 ± 0.36	111	1.12	
LC0022	2.18 ± 0.11	101	0.1	
LC0023	2.32 ± 0.0513	108	0.75	
LC0024	2.15 ± 0.095	99.6	-0.04	
LC0025	2.18 ± 0.81	101	0.1	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	2.12 ± 0.145	2.16 ± 0.108	µg/l
Minimum	1.35	1.89	µg/l
Maximum	2.54	2.54	µg/l
Standard deviation	0.236	0.173	µg/l
rel. standard deviation	11.1	8	%
n	24	23	-

Graphical presentation of results
Results

Laboratory

| GF-AAS | ICP-MS | voltammetry | Control limit | Limit of tolerance |

Recovery rate

z-Score

Laboratory

GF-AAS   ICP-MS   voltammetry   —— Control limit   —— Limit of tolerance
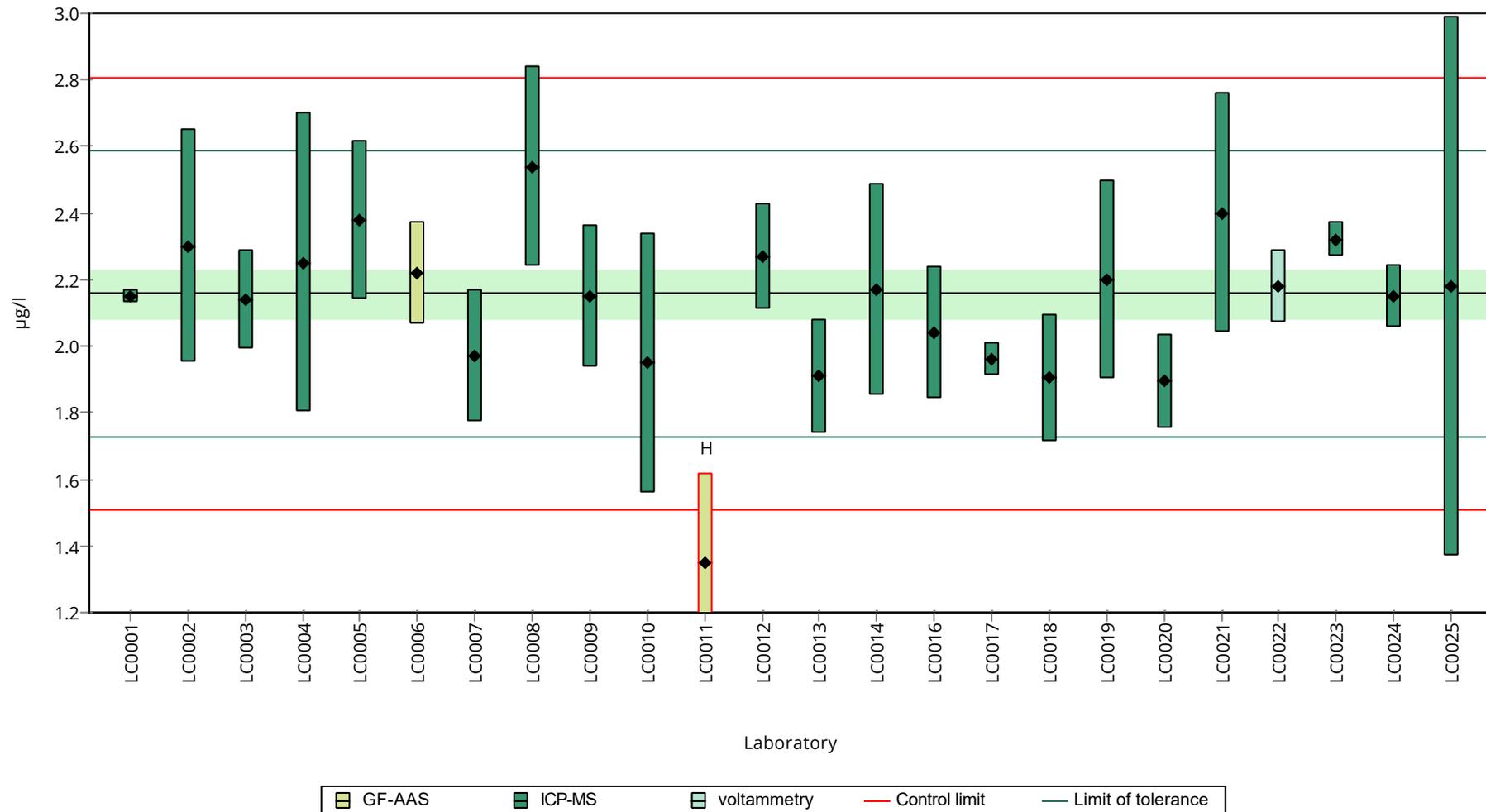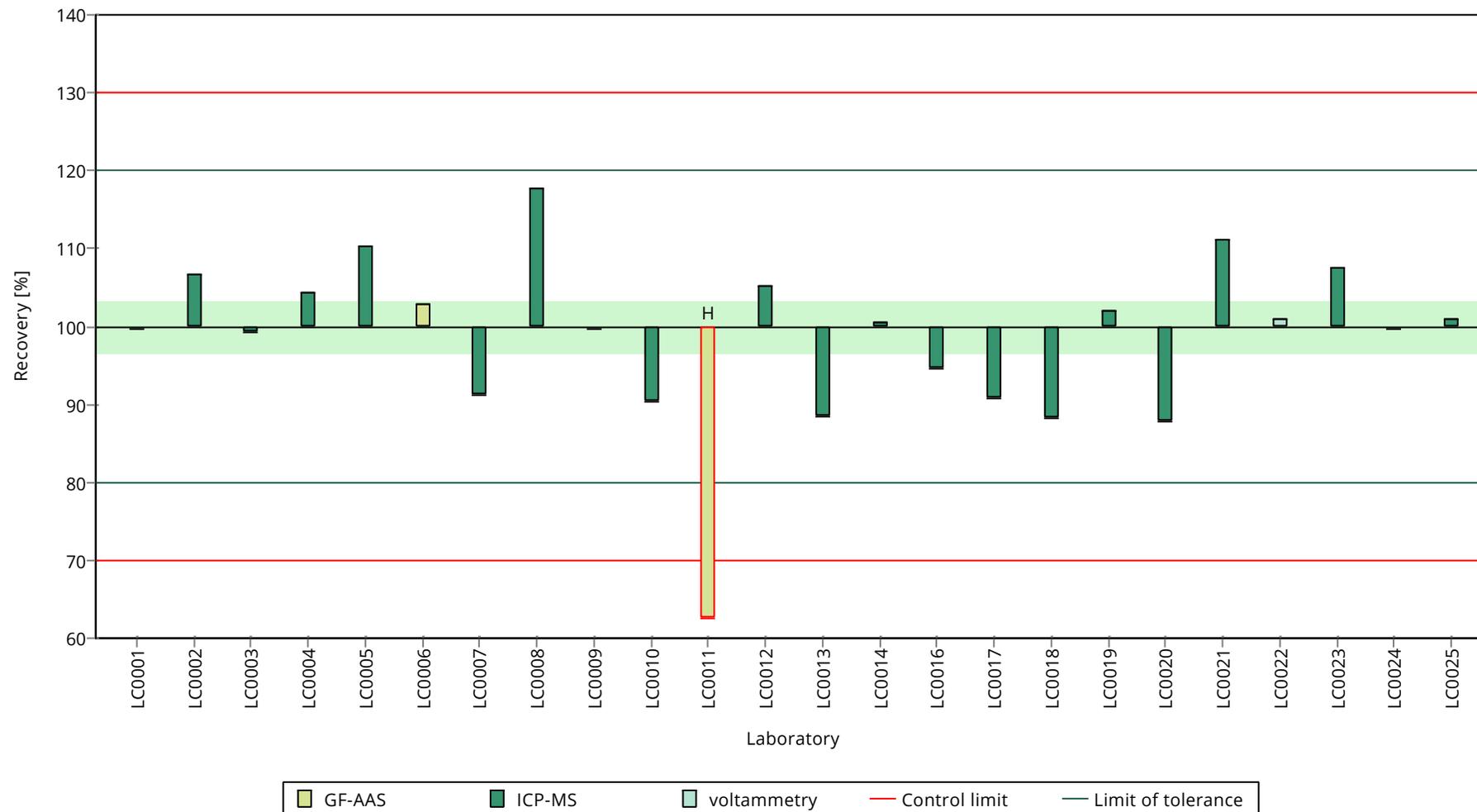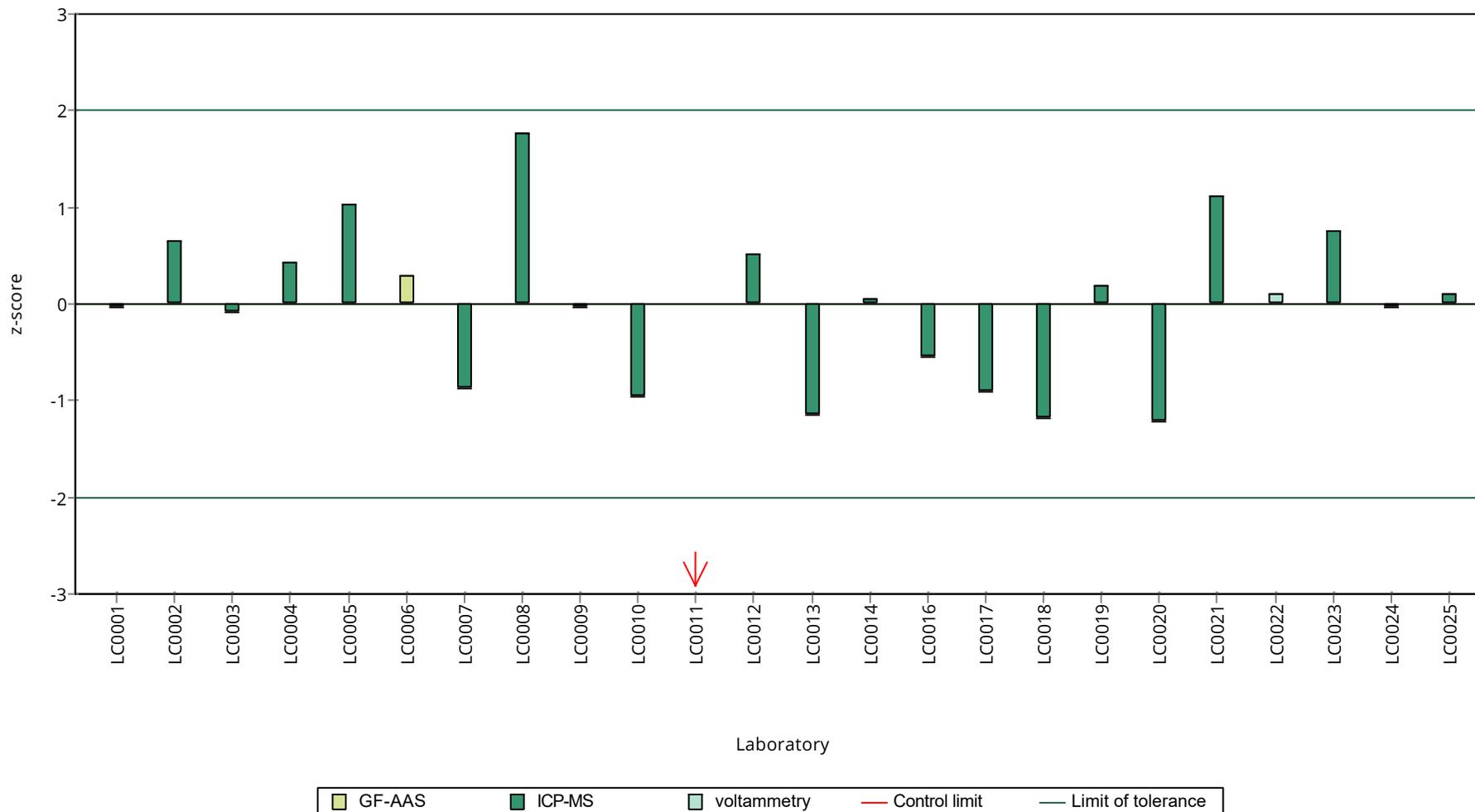
Parameter oriented report

M180 B

Lead

Unit	µg/l
Assigned value ± U (k=2)	49.3 ± 0.959
Criterion	4.93 (10 %)
Minimum - Maximum	45 - 53.6
Control test value ± U (k=2)	47.5 ± 4.75

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	52.1 ± 0.64	106	0.58	
LC0002	49.6 ± 7.44	101	0.07	
LC0003	47.9 ± 3.4	97.3	-0.27	
LC0004	51.5 ± 10	105	0.46	
LC0005	49.3 ± 4.93	100	0.01	
LC0006	49.88 ± 3.492	101	0.13	
LC0007	47.1 ± 4.7	95.6	-0.44	
LC0008	51.7 ± 6.2	105	0.5	
LC0009	51.28 ± 3.846	104	0.41	
LC0010	46.4 ± 9.3	94.2	-0.58	
LC0011	59.2 ± 2.84	120	2.02	H
LC0012	51.9 ± 3.6	105	0.54	
LC0013	45 ± 4.05	91.4	-0.86	
LC0014	50.26 ± 7.34	102	0.2	
LC0015	- ± -	-	-	
LC0016	47.9 ± 4.8	97.3	-0.27	
LC0017	37.86 ± 0.381	76.9	-2.31	H
LC0018	45.866 ± 4.587	93.1	-0.69	
LC0019	48.2 ± 7.2	97.9	-0.21	
LC0020	47.65 ± 3.5738	96.7	-0.33	
LC0021	53.6 ± 8.04	109	0.88	
LC0022	48.7 ± 2.5	98.9	-0.11	
LC0023	50.3 ± 0.469	102	0.21	
LC0024	47.33 ± 1.93	96.1	-0.39	
LC0025	50.1 ± 9.1	102	0.17	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	49.2 ± 2.34	49.3 ± 1.44	µg/l
Minimum	37.9	45	µg/l
Maximum	59.2	53.6	µg/l
Standard deviation	3.82	2.25	µg/l
rel. standard deviation	7.76	4.57	%
n	24	22	-

Graphical presentation of results
Results

Laboratory

| | GF-AAS | | ICP-MS | | voltammetry | | Control limit | | Limit of tolerance |

Recovery rate

z-Score

Parameter oriented report

M180 A

Manganese

Unit	µg/l
Assigned value ± U (k=2)	5.53 ± 0.158
Criterion	0.398 (7.2 %)
Minimum - Maximum	5.07 - 6.3
Control test value ± U (k=2)	5.44 ± 0.544

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	< 10 (LOQ) ± -	-	-	
LC0002	5.66 ± 0.85	102	0.33	
LC0003	5.29 ± 0.37	95.7	-0.6	
LC0004	5.6 ± 1.1	101	0.18	
LC0005	5.31 ± 0.531	96	-0.55	
LC0006	< 5 (LOQ) ± -	-	-	
LC0007	5.12 ± 0.5	92.6	-1.03	
LC0008	< 10 (LOQ) ± -	-	-	
LC0009	5.61 ± 0.561	101	0.2	
LC0010	- ± -	-	-	
LC0011	5.52 ± 1.104	99.8	-0.02	
LC0012	5.49 ± 0.302	99.3	-0.1	
LC0013	5.14 ± 0.308	93	-0.98	
LC0014	5.71 ± 0.67	103	0.45	
LC0015	4.5 ± 0.657	81.4	-2.59	H
LC0016	5.23 ± 0.52	94.6	-0.75	
LC0017	5.63 ± 0.076	102	0.25	
LC0018	5.822 ± 0.582	105	0.73	
LC0019	5.5 ± 0.8	99.5	-0.07	
LC0020	- ± -	-	-	
LC0021	6 ± 0.6	109	1.18	
LC0022	- ± -	-	-	
LC0023	< 10 (LOQ) ± -	-	-	
LC0024	5.07 ± 0.23	91.7	-1.15	
LC0025	6.3 ± 1.43	114	1.94	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	5.47 ± 0.282	5.53 ± 0.237	µg/l
Minimum	4.5	5.07	µg/l
Maximum	6.3	6.3	µg/l
Standard deviation	0.399	0.326	µg/l
rel. standard deviation	7.28	5.9	%
n	18	17	-
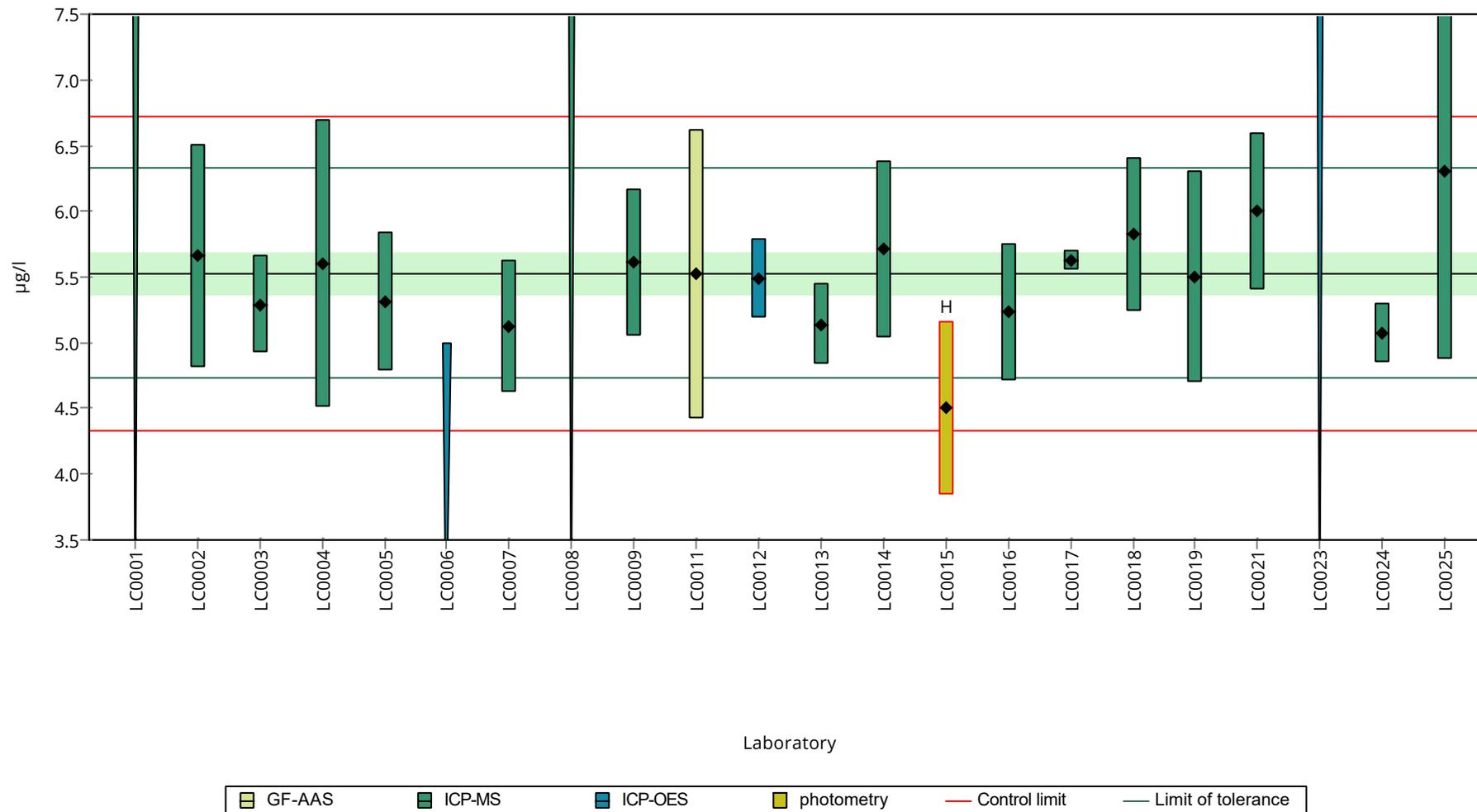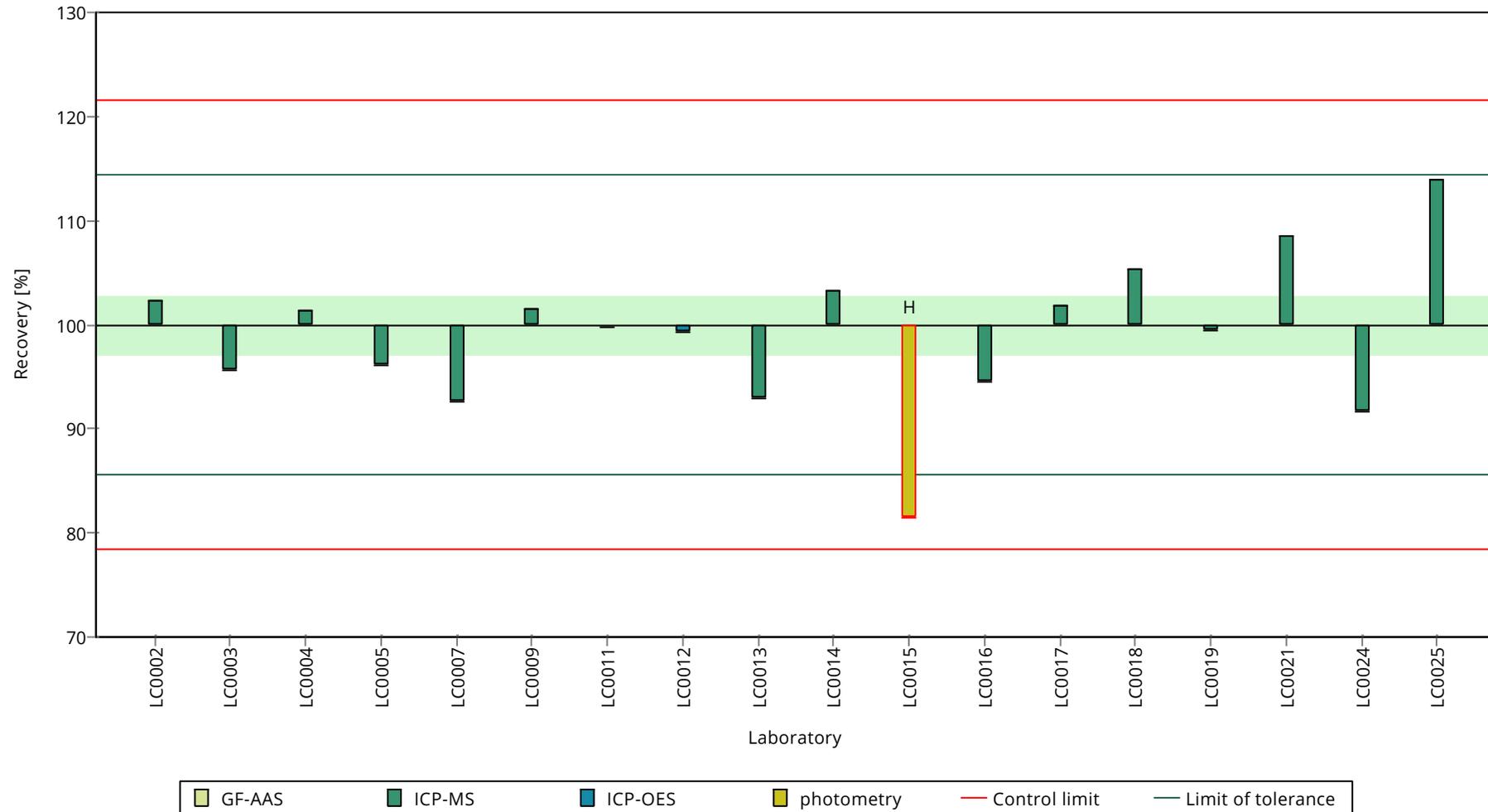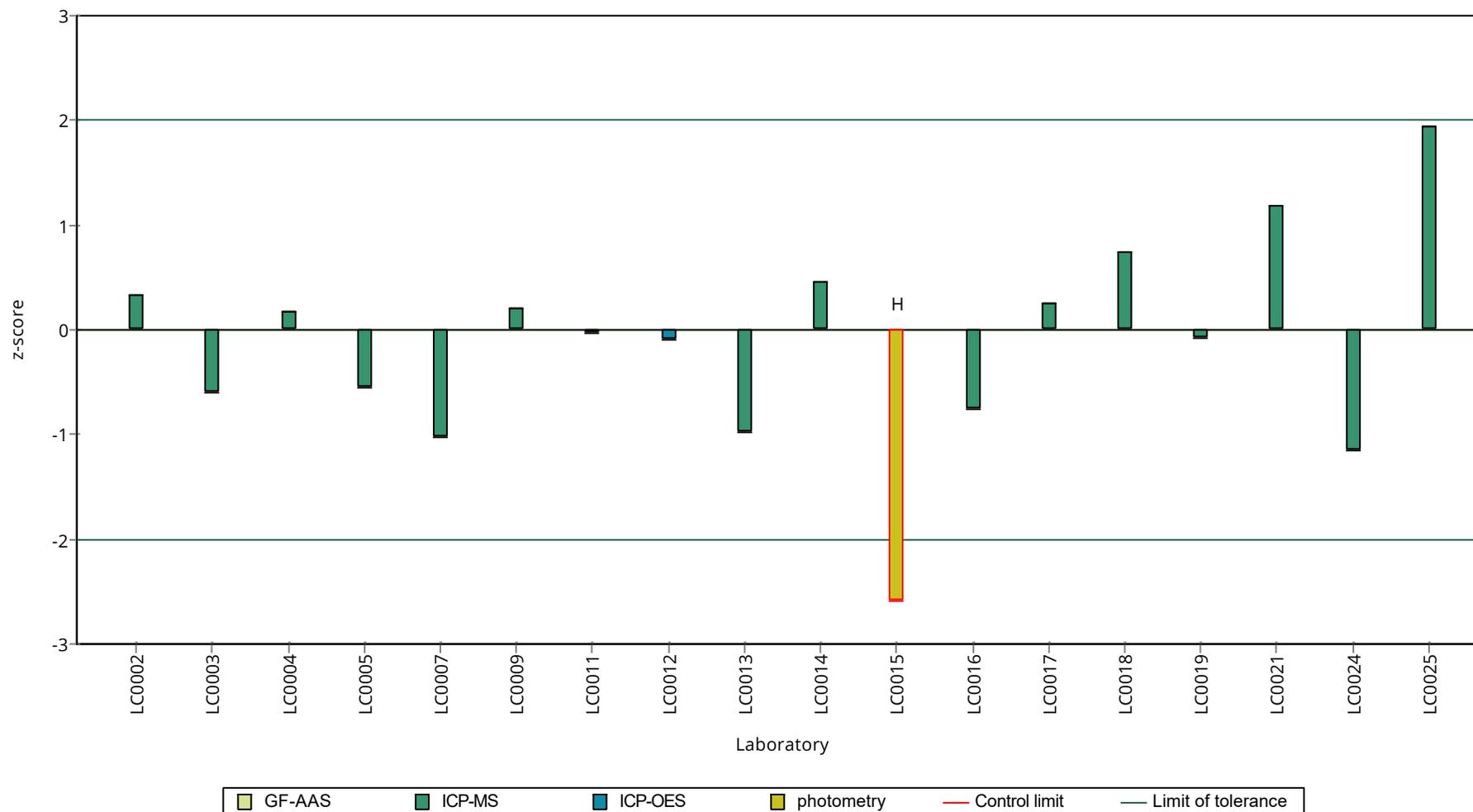
Parameter oriented report Metals and trace elements M180

Sample: M180A, Parameter: Manganese

Graphical presentation of results
Results

Laboratory

Legend: GF-AAS | ICP-MS | ICP-OES | photometry | Control limit | Limit of tolerance

Recovery rate

z-Score

Parameter oriented report

M180 B

Manganese

Unit	µg/l
Assigned value ± U (k=2)	753 ± 13.7
Criterion	54.2 (7.2 %)
Minimum - Maximum	692 - 816
Control test value ± U (k=2)	750 ± 75

Labcode	Result ± U			Recovery [%]	z-Score	Comments
LC0001	787	±	3.536	105	0.63	
LC0002	790	±	118	105	0.68	
LC0003	703	±	49	93.4	-0.92	
LC0004	755	±	151	100	0.04	
LC0005	739	±	73.9	98.2	-0.26	
LC0006	789	±	118.4	105	0.67	
LC0007	728	±	72.8	96.7	-0.46	
LC0008	772	±	93	103	0.35	
LC0009	763.7	±	57.278	101	0.2	
LC0010	-	±	-	-	-	
LC0011	738.5	±	23.83	98.1	-0.27	
LC0012	758	±	41.7	101	0.09	
LC0013	712	±	42.7	94.6	-0.75	
LC0014	741	±	86.7	98.4	-0.22	
LC0015	692	±	101	91.9	-1.12	
LC0016	773	±	77	103	0.37	
LC0017	674.75	±	1.363	89.6	-1.44	H
LC0018	761.676	±	76.168	101	0.16	
LC0019	757	±	113.6	101	0.08	
LC0020	-	±	-	-	-	
LC0021	746	±	74.6	99.1	-0.13	
LC0022	-	±	-	-	-	
LC0023	816	±	3.34	108	1.16	
LC0024	715.47	±	30.27	95	-0.69	
LC0025	773	±	137	103	0.37	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	749 ± 22.3	753 ± 20.6	µg/l
Minimum	675	692	µg/l
Maximum	816	816	µg/l
Standard deviation	34.9	31.4	µg/l
rel. standard deviation	4.65	4.17	%
n	22	21	-

Graphical presentation of results
Results

Laboratory

| GF-AAS | ICP-MS | ICP-OES | photometry | —— Control limit | —— Limit of tolerance |

Recovery rate

z-Score

M180 Ausgabe/Edition 1 - 12.03.2026
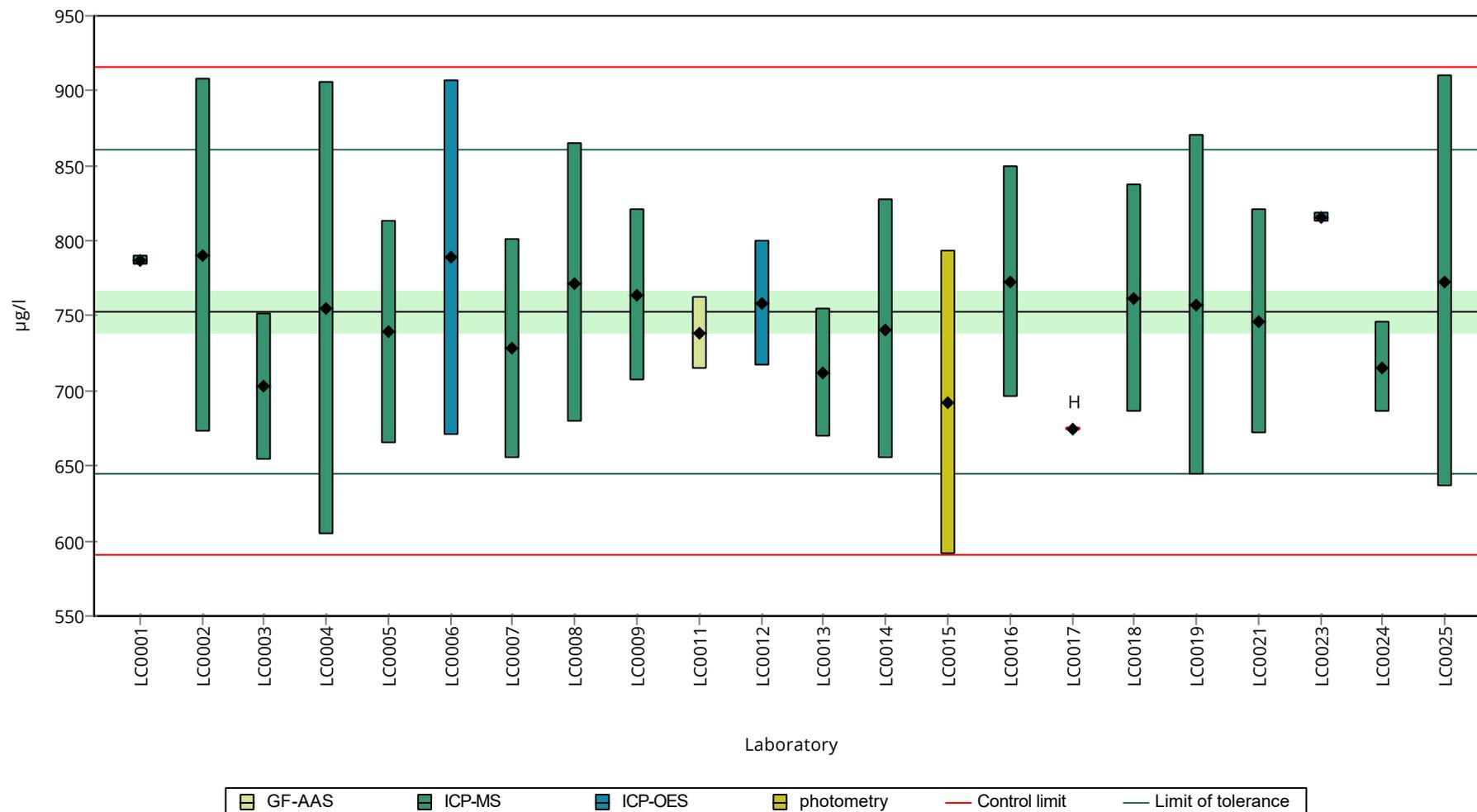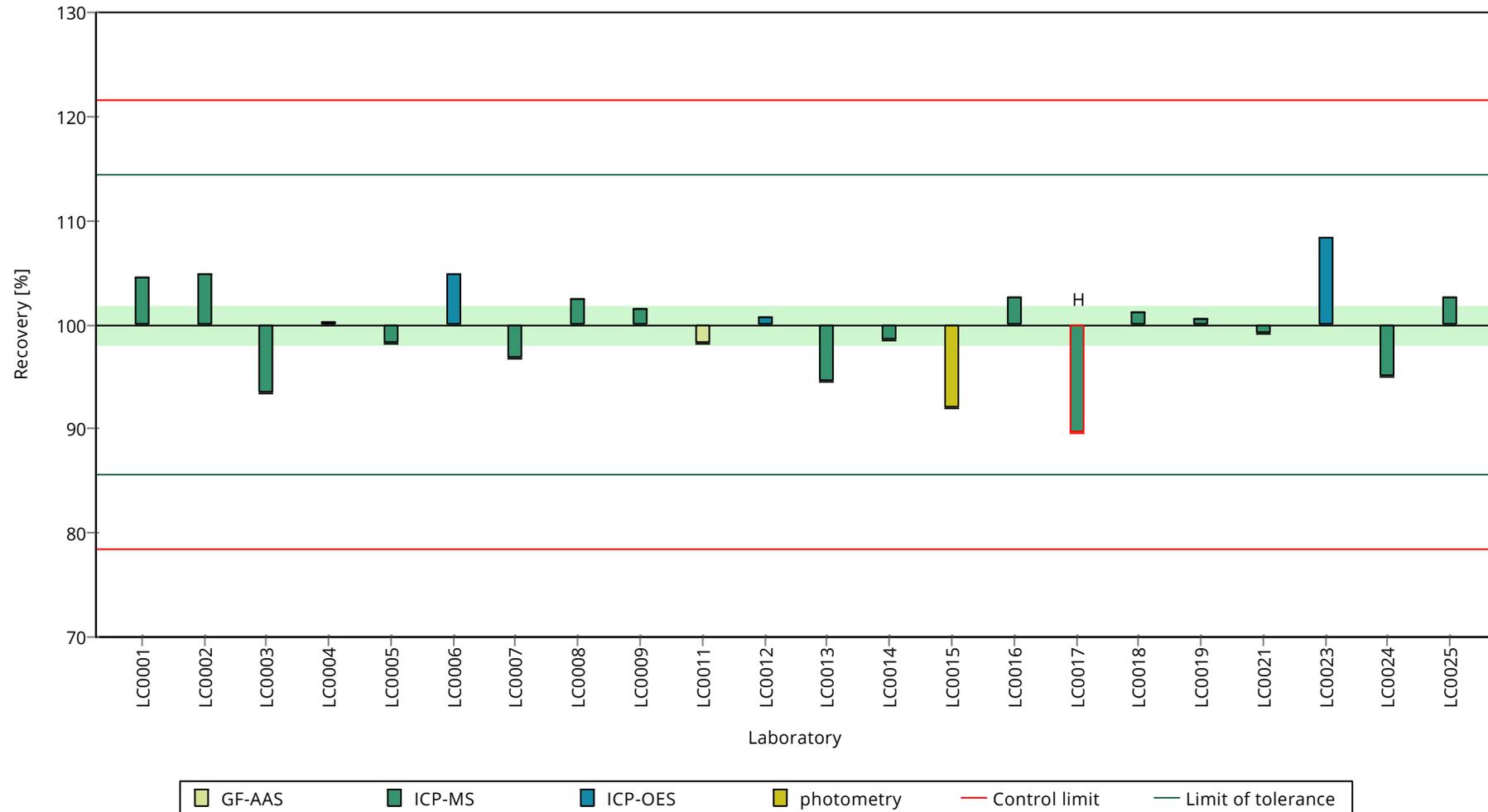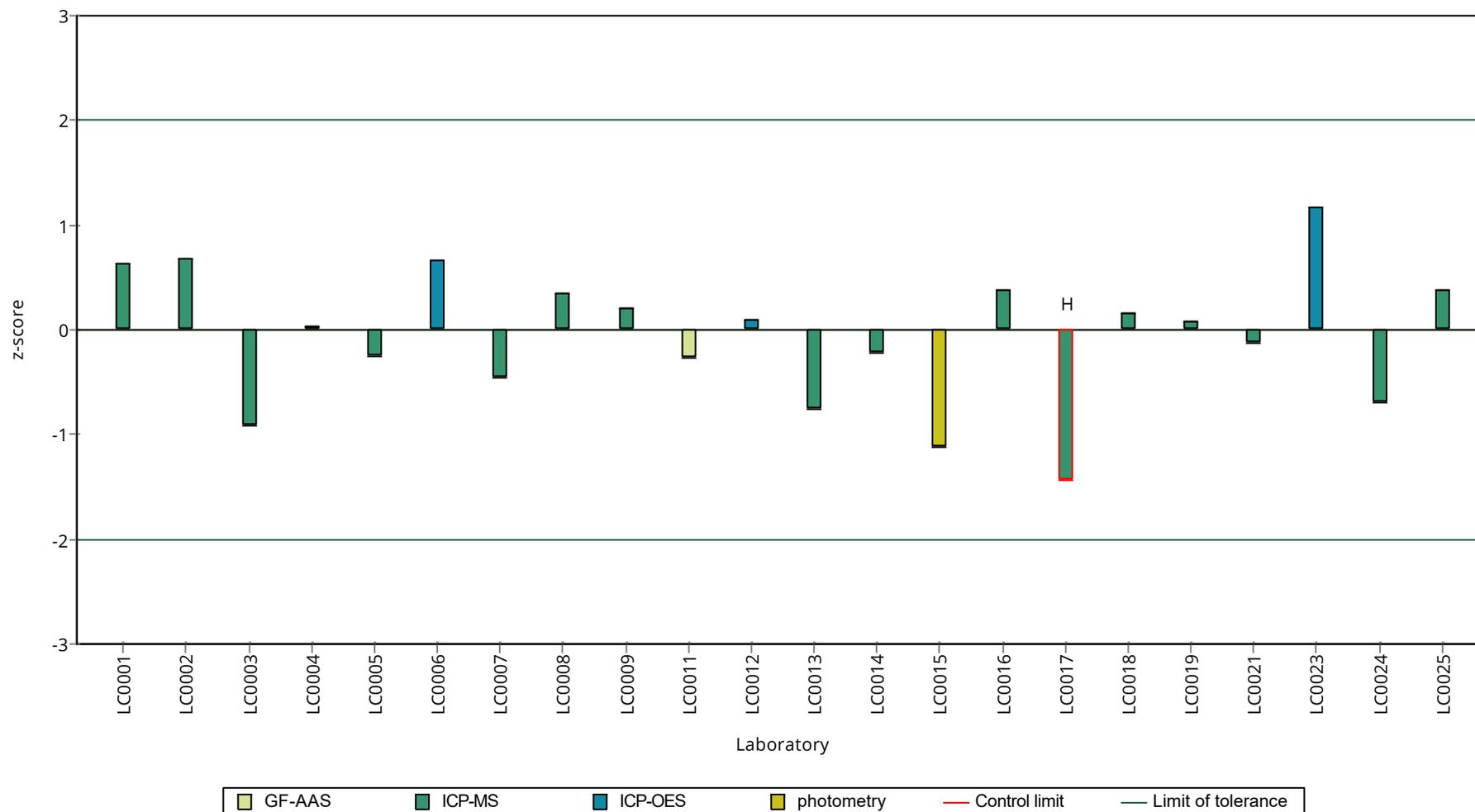
Parameter oriented report

M180 A Hg

Mercury

Unit	µg/l
Assigned value ± U (k=2)	1.79 ± 0.0433
Criterion	0.25 (14 %)
Minimum - Maximum	1.69 - 1.99
Control test value ± U (k=2)	1.81 ± 0.398

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	1.8 ± 0.015	101	0.05	
LC0002	1.69 ± 0.25	94.6	-0.39	
LC0003	1.83 ± 0.55	102	0.17	
LC0004	1.7 ± 0.34	95.1	-0.35	
LC0005	1.7 ± 0.34	95.1	-0.35	
LC0006	1.733 ± 0.26	97	-0.21	
LC0007	1.73 ± 0.17	96.8	-0.23	
LC0008	1.91 ± 0.42	107	0.49	
LC0009	1.47 ± 0.11	82.3	-1.27	H
LC0010	- ± -	-	-	
LC0011	0.757 ± 0.151	42.4	-4.12	H
LC0012	1.99 ± 0.146	111	0.81	
LC0013	1.81 ± 0.145	101	0.09	
LC0014	1.72 ± 0.22	96.3	-0.27	
LC0015	- ± -	-	-	
LC0016	1.72 ± 0.26	96.3	-0.27	
LC0017	- ± -	-	-	
LC0018	2.147 ± 0.215	120	1.44	H
LC0019	1.7 ± 0.3	95.1	-0.35	
LC0020	1.907 ± 0.288	107	0.48	
LC0021	1.794 ± 0.269	100	0.03	
LC0022	- ± -	-	-	
LC0023	1.77 ± 0.00819	99.1	-0.07	
LC0024	- ± -	-	-	
LC0025	1.87 ± 0.32	105	0.33	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	1.74 ± 0.18	1.79 ± 0.065	µg/l
Minimum	0.757	1.69	µg/l
Maximum	2.15	1.99	µg/l
Standard deviation	0.268	0.0894	µg/l
rel. standard deviation	15.5	5	%
n	20	17	-

Graphical presentation of results
Results

Recovery rate

z-Score

Laboratory

| AFS | CV-AAS | Hg analyzer | ICP-MS | —— Control limit | —— Limit of tolerance |
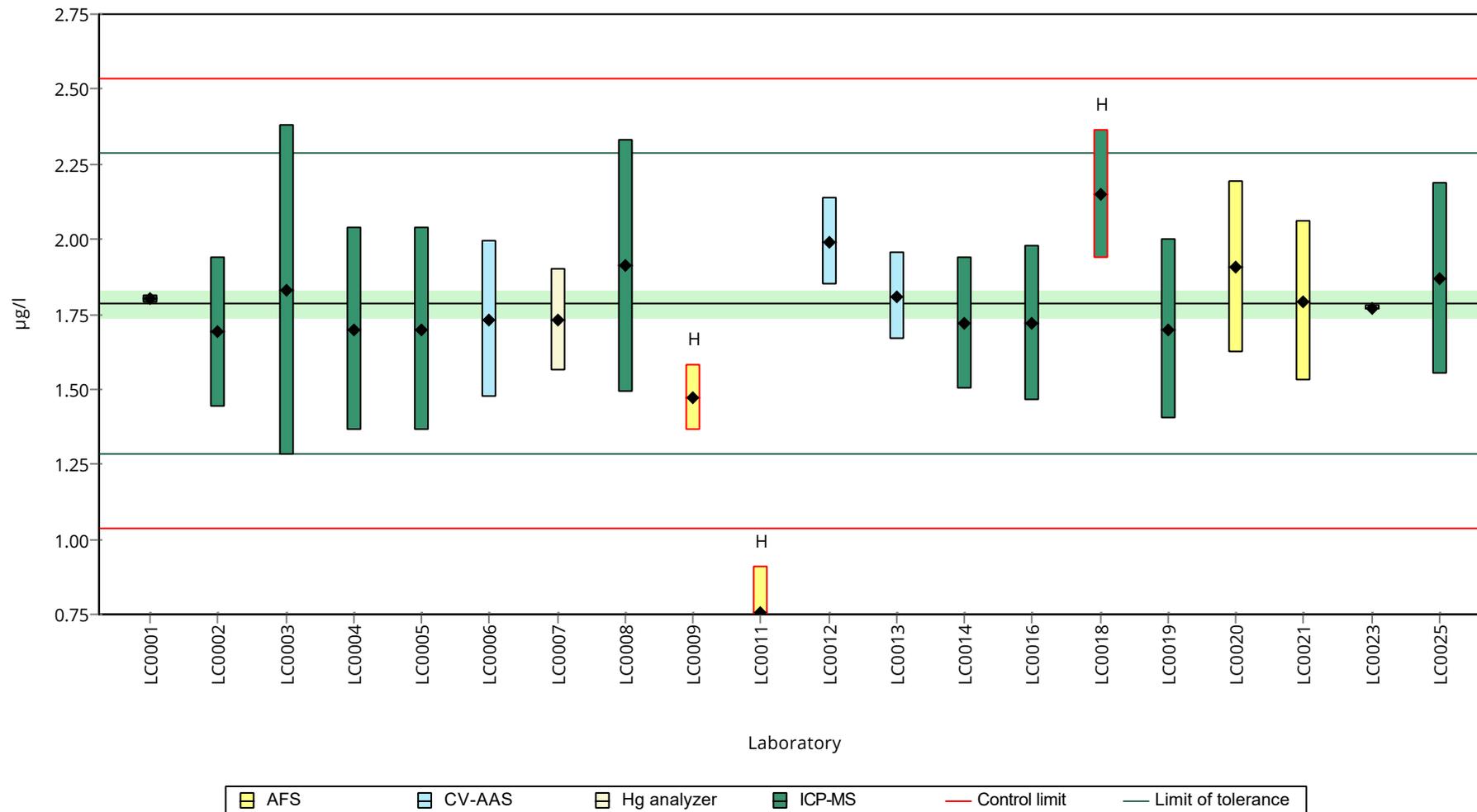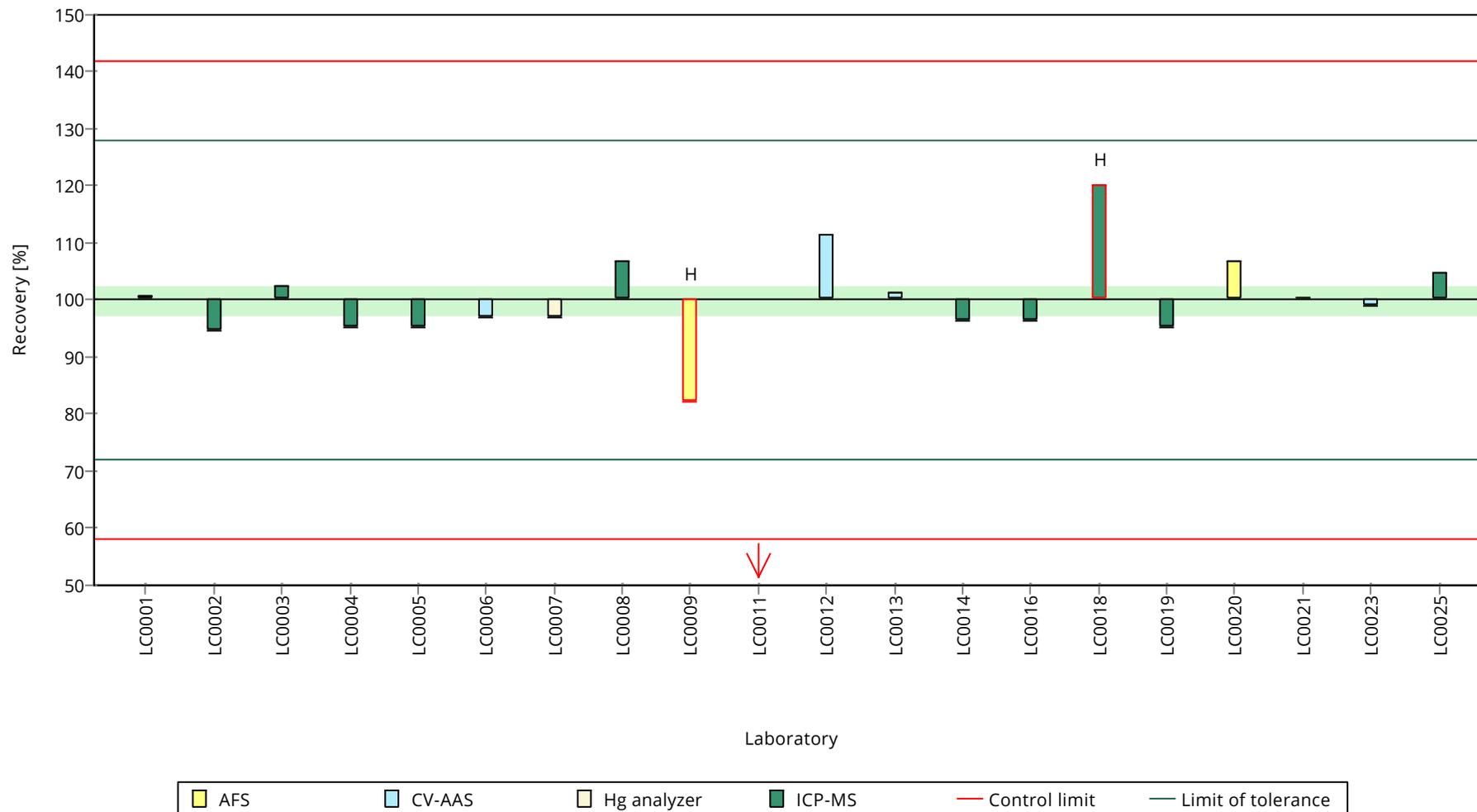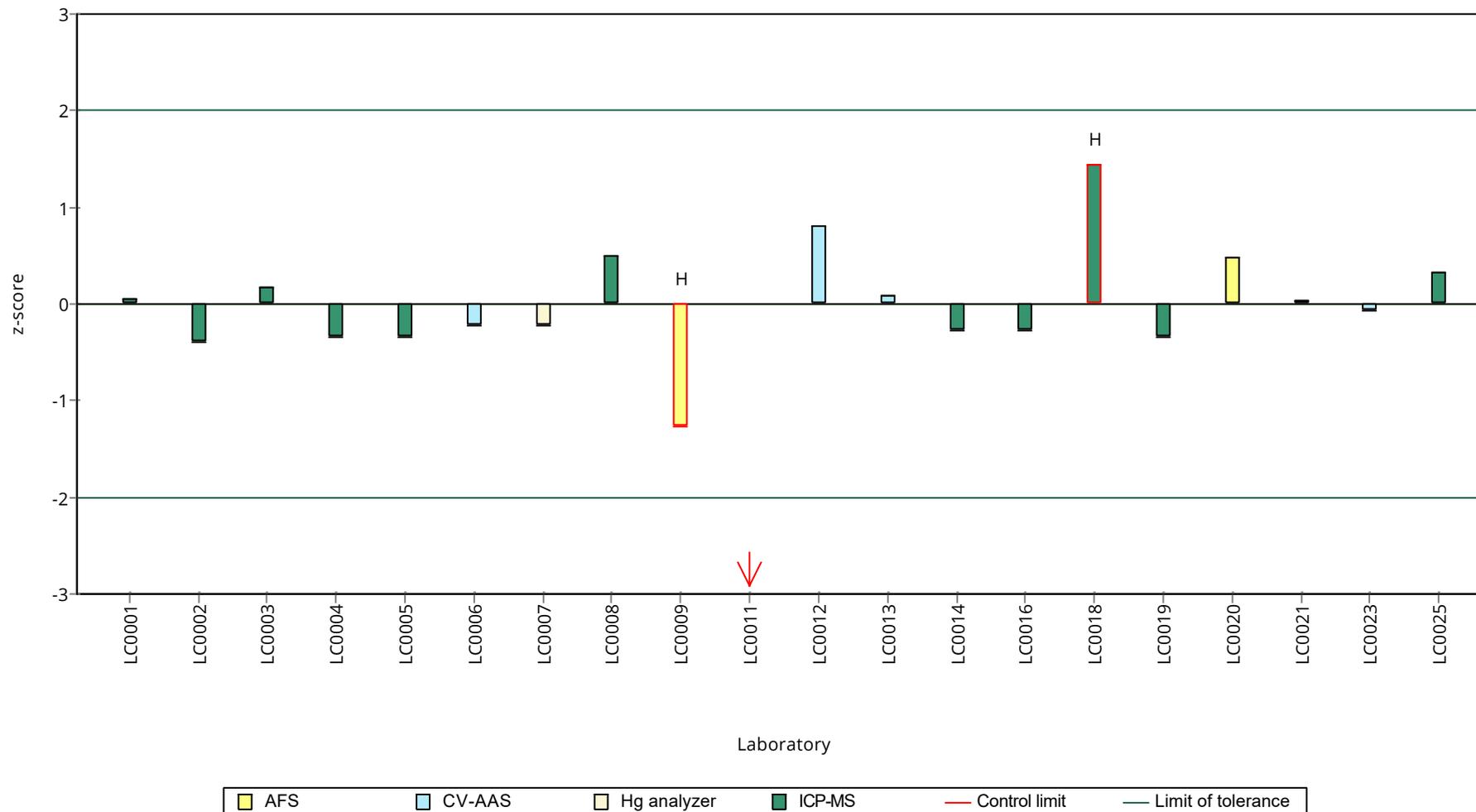
Parameter oriented report

M180 B Hg

Mercury

Unit	µg/l
Assigned value ± U (k=2)	3.13 ± 0.0853
Criterion	0.438 (14 %)
Minimum - Maximum	2.75 - 3.52
Control test value ± U (k=2)	3.19 ± 0.703

Labcode	Result ± U			Recovery [%]	z-Score	Comments
LC0001	3.18	±	0.036	102	0.13	
LC0002	3.11	±	0.47	99.5	-0.03	
LC0003	3.24	±	0.97	104	0.26	
LC0004	2.95	±	0.59	94.4	-0.4	
LC0005	3.06	±	0.613	97.9	-0.15	
LC0006	3.031	±	0.4547	97	-0.22	
LC0007	2.94	±	0.29	94.1	-0.42	
LC0008	3.91	±	0.86	125	1.79	H
LC0009	2.92	±	0.219	93.4	-0.47	
LC0010	-	±	-	-	-	
LC0011	2.053	±	0.411	65.7	-2.45	H
LC0012	3.35	±	0.245	107	0.51	
LC0013	3.08	±	0.246	98.6	-0.1	
LC0014	3.068	±	0.4	98.2	-0.13	
LC0015	-	±	-	-	-	
LC0016	2.75	±	0.41	88	-0.86	
LC0017	-	±	-	-	-	
LC0018	3.523	±	0.352	113	0.91	
LC0019	3.2	±	0.5	102	0.17	
LC0020	3.313	±	0.5003	106	0.43	
LC0021	3.28	±	0.492	105	0.35	
LC0022	-	±	-	-	-	
LC0023	3.13	±	0.0379	100	0.01	
LC0024	-	±	-	-	-	
LC0025	3.13	±	0.48	100	0.01	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	3.11 ± 0.234	3.13 ± 0.128	µg/l
Minimum	2.05	2.75	µg/l
Maximum	3.91	3.52	µg/l
Standard deviation	0.349	0.181	µg/l
rel. standard deviation	11.2	5.79	%
n	20	18	-

Graphical presentation of results
Results
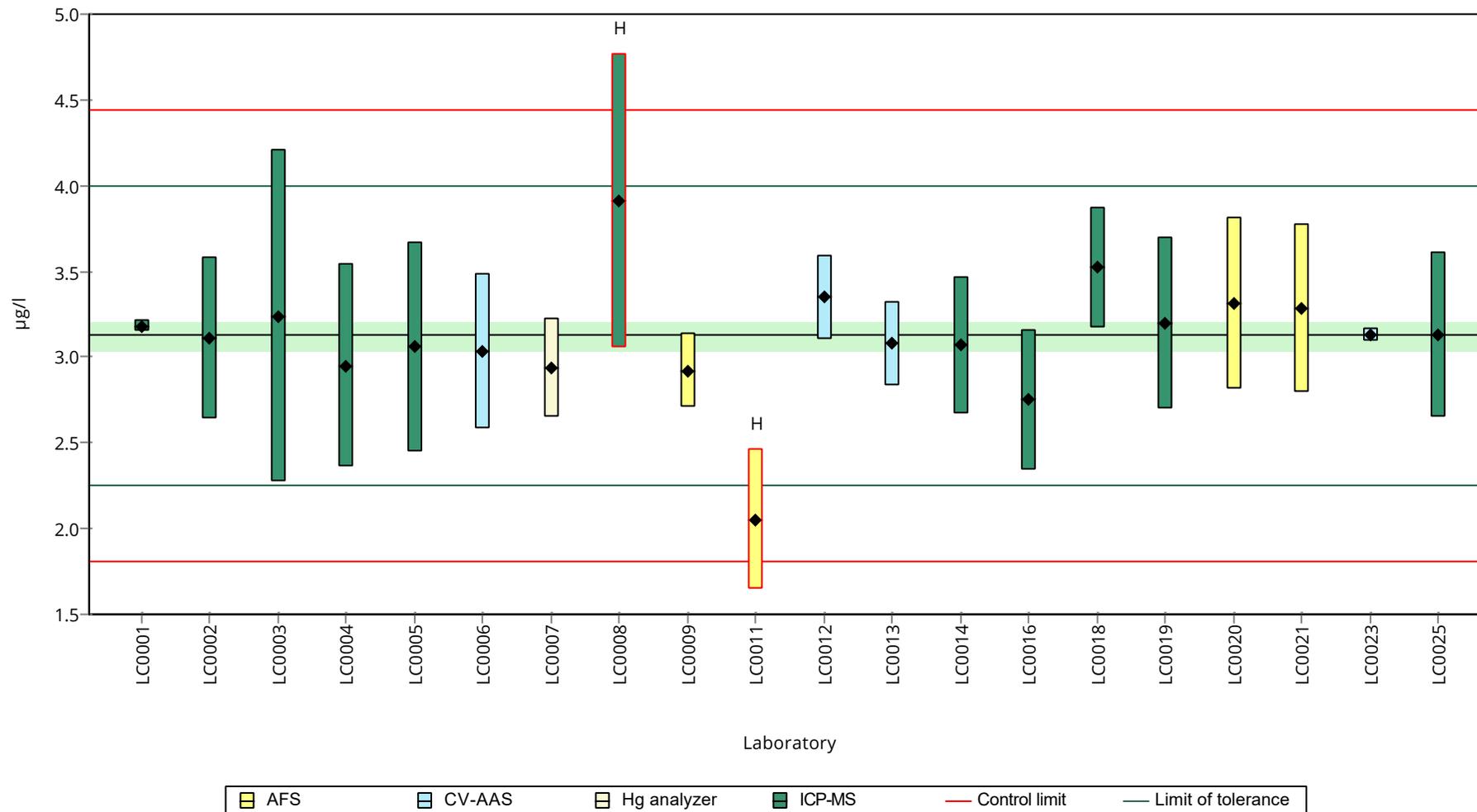
Recovery rate
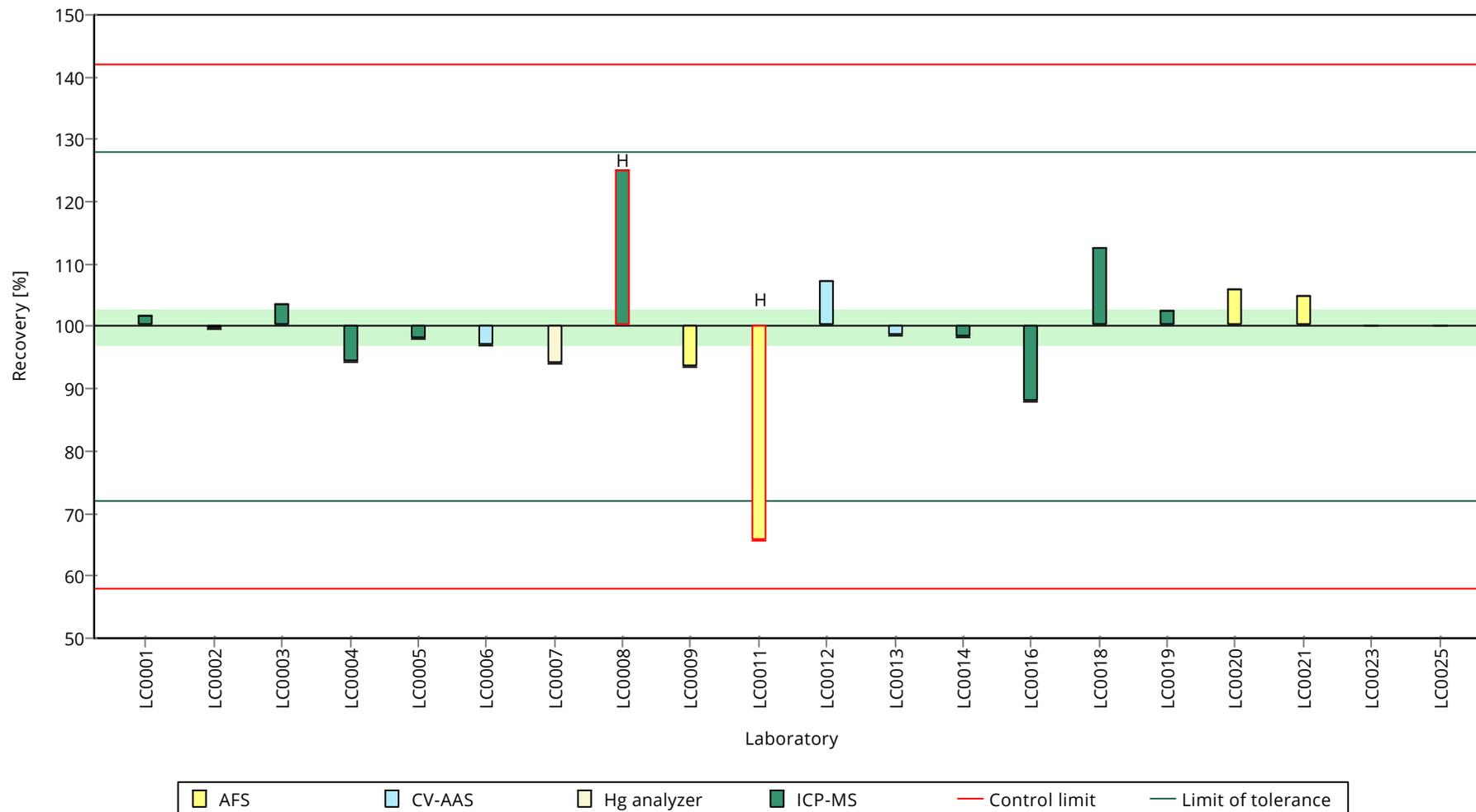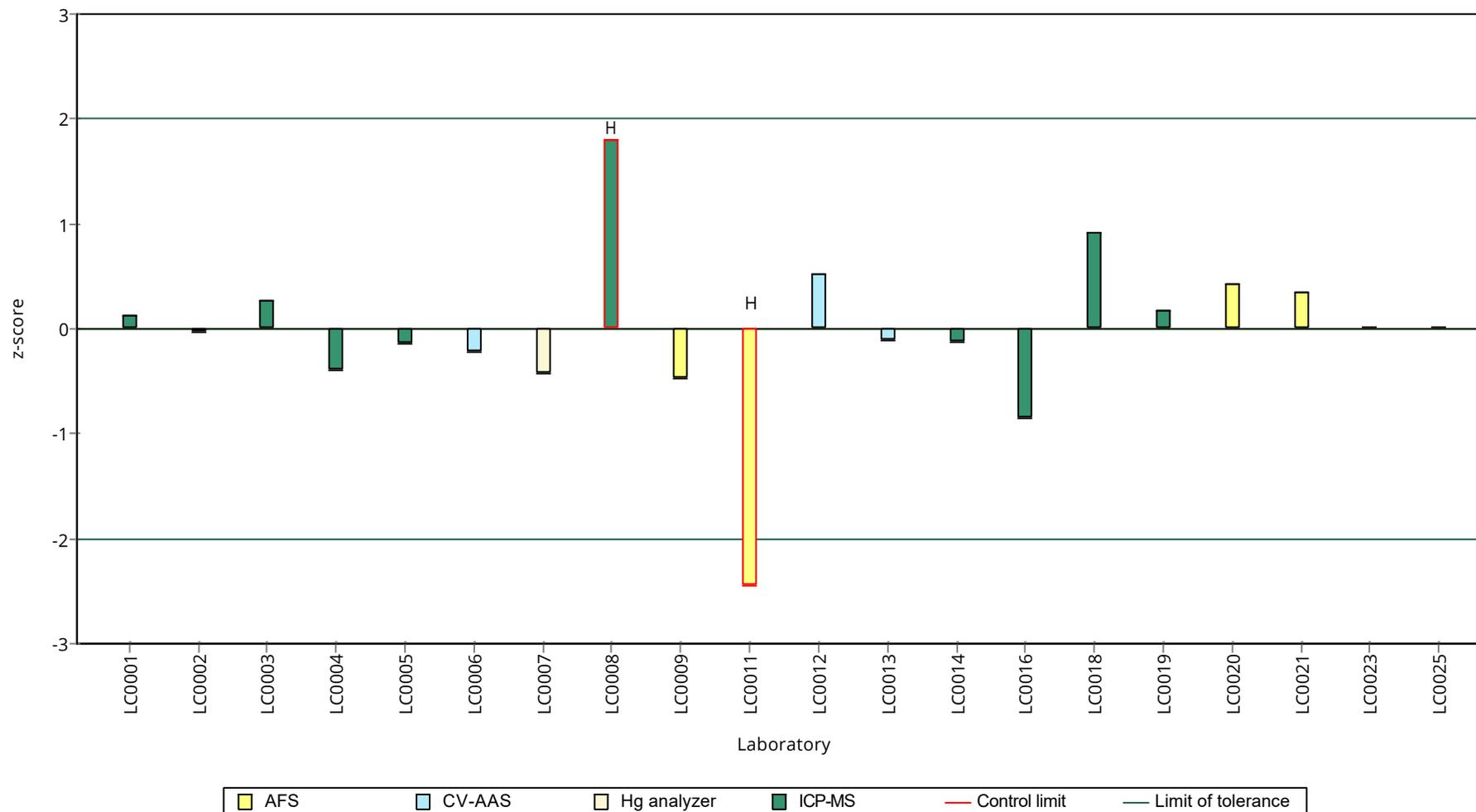
z-Score

Parameter oriented report

M180 A

Nickel

Unit	µg/l
Assigned value ± U (k=2)	3.91 ± 0.113
Criterion	0.47 (12 %)
Minimum - Maximum	3.35 - 4.27
Control test value ± U (k=2)	3.73 ± 0.373

Labcode	Result	±	U	Recovery [%]	z-Score	Comments
LC0001	3.72	±	0.035	95.1	-0.41	
LC0002	3.94	±	0.59	101	0.06	
LC0003	3.7	±	0.26	94.5	-0.45	
LC0004	4	±	0.8	102	0.18	
LC0005	4.1	±	0.452	105	0.4	
LC0006	< 5 (LOQ)	±	-	-	-	
LC0007	4.1	±	0.41	105	0.4	
LC0008	4.27	±	0.47	109	0.76	
LC0009	3.9	±	0.39	99.7	-0.03	
LC0010	3.69	±	0.74	94.3	-0.48	
LC0011	3.35	±	0.67	85.6	-1.2	
LC0012	3.75	±	0.287	95.8	-0.35	
LC0013	3.64	±	0.182	93	-0.58	
LC0014	3.98	±	0.31	102	0.14	
LC0015	-	±	-	-	-	
LC0016	3.7	±	0.37	94.5	-0.45	
LC0017	6.23	±	0.098	159	4.93	H
LC0018	5.37	±	0.537	137	3.1	H
LC0019	3.9	±	0.6	99.7	-0.03	
LC0020	4.262	±	0.2387	109	0.74	
LC0021	4.1	±	0.615	105	0.4	
LC0022	-	±	-	-	-	
LC0023	4	±	0.0279	102	0.18	
LC0024	4.255	±	0.21	109	0.73	
LC0025	-	±	-	-	-	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	4.09 ± 0.411	3.91 ± 0.169	µg/l
Minimum	3.35	3.35	µg/l
Maximum	6.23	4.27	µg/l
Standard deviation	0.628	0.246	µg/l
rel. standard deviation	15.4	6.28	%
n	21	19	-

Graphical presentation of results
Results

Recovery rate

z-Score

Laboratory

| GF-AAS | ICP-MS | —— Control limit | —— Limit of tolerance |

UMWELT BUNDES AMT
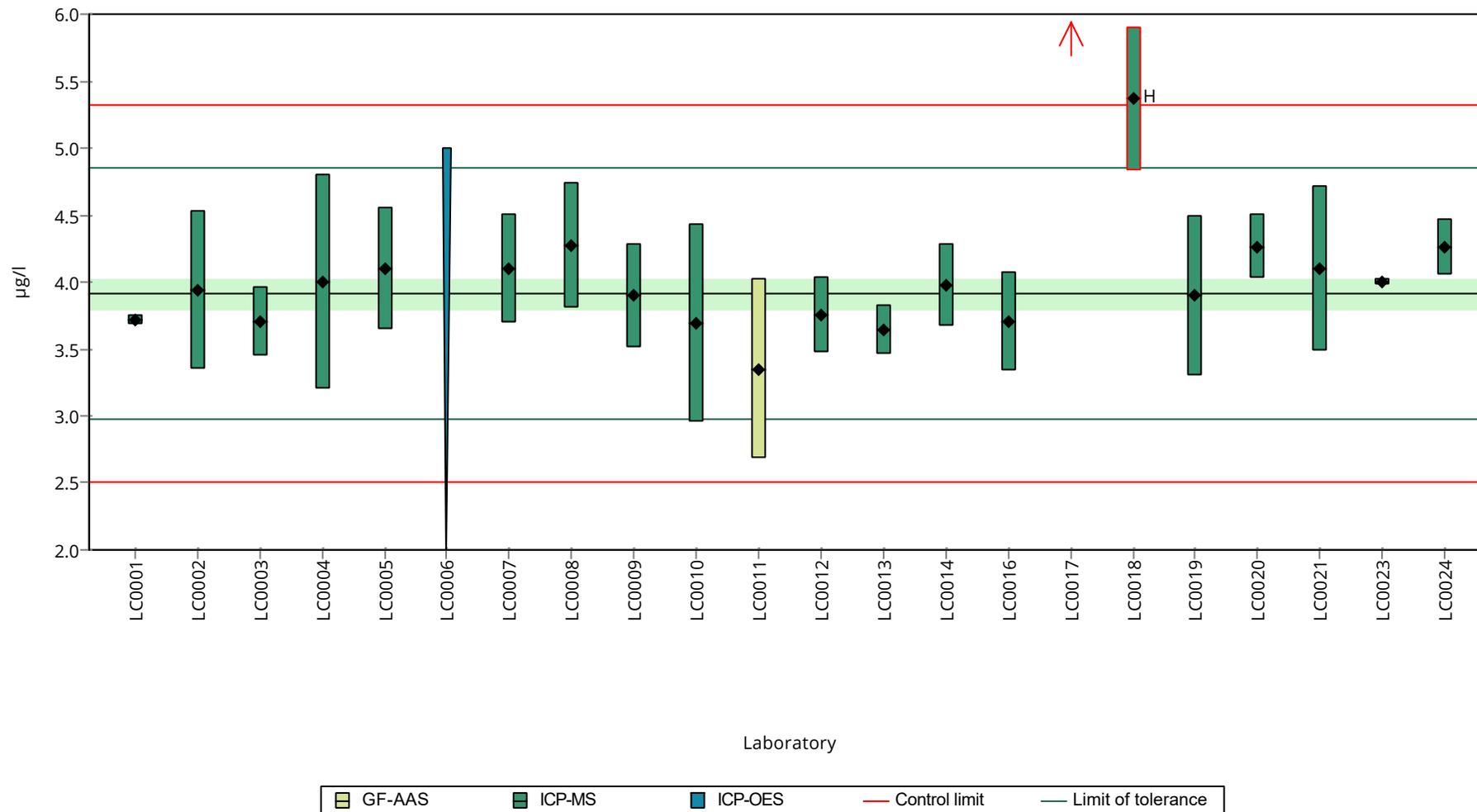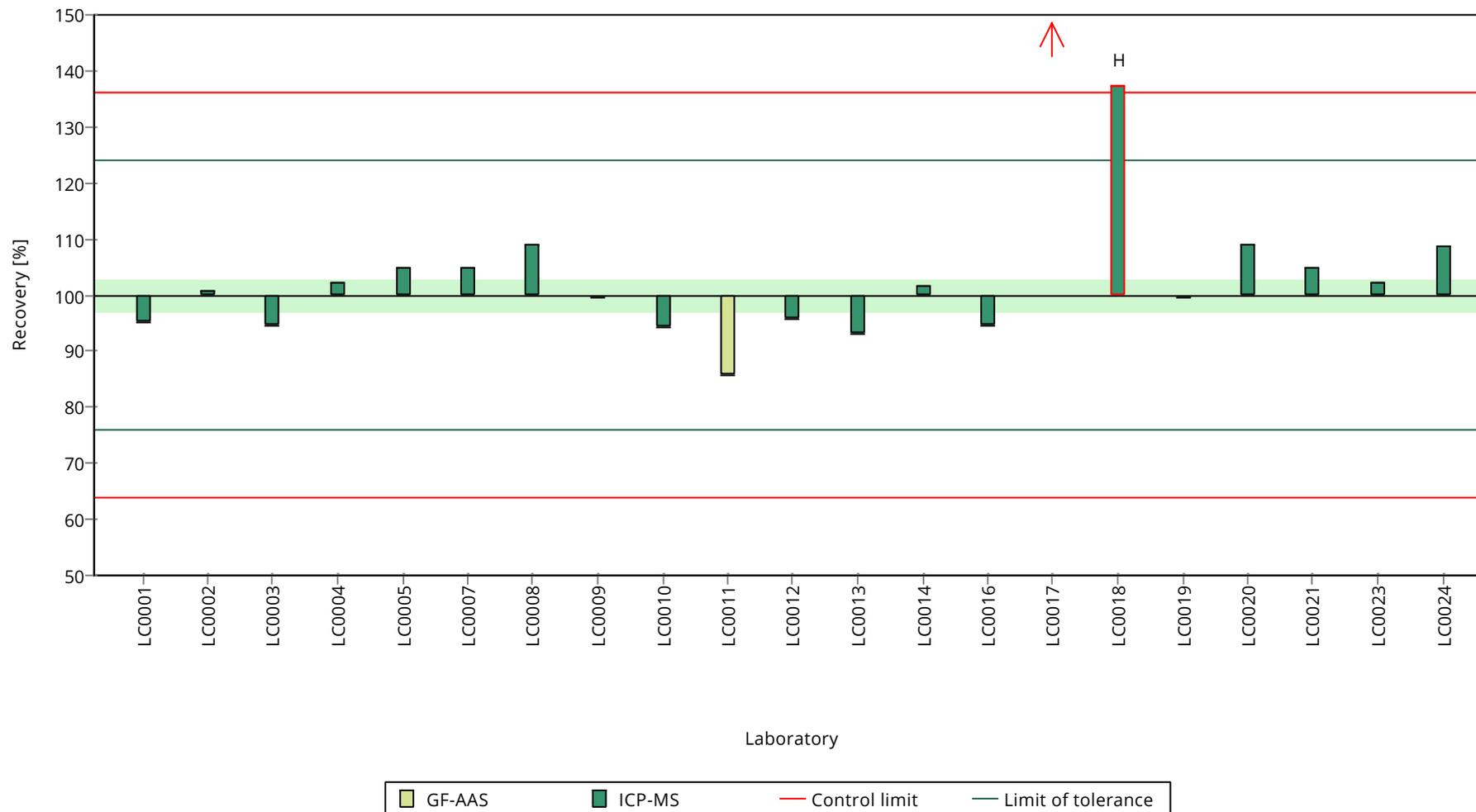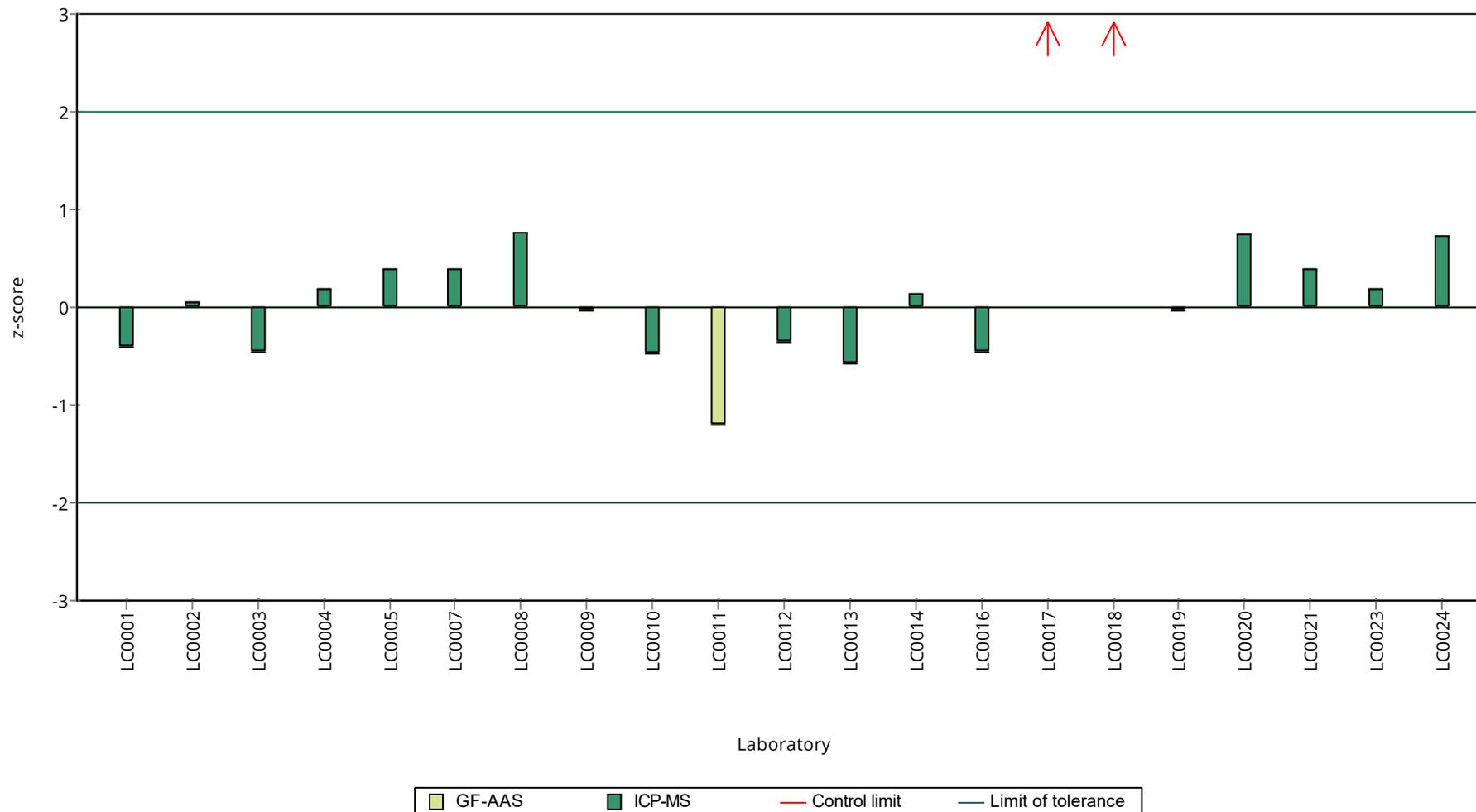
Parameter oriented report

M180 B

Nickel

Unit	µg/l
Assigned value ± U (k=2)	61 ± 1.26
Criterion	7.32 (12 %)
Minimum - Maximum	55.1 - 65.1
Control test value ± U (k=2)	58.7 ± 5.87

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	62 ± 0.723	102	0.14	
LC0002	59.7 ± 8.95	97.9	-0.17	
LC0003	58.5 ± 4.1	96	-0.34	
LC0004	62.5 ± 12.5	103	0.21	
LC0005	61.8 ± 6.79	101	0.11	
LC0006	59.6 ± 8.94	97.8	-0.19	
LC0007	61.5 ± 6.2	101	0.07	
LC0008	65.1 ± 7.2	107	0.57	
LC0009	62 ± 4.65	102	0.14	
LC0010	55.3 ± 11	90.7	-0.77	
LC0011	42.8 ± 8.76	70.2	-2.48	H
LC0012	61.4 ± 4.69	101	0.06	
LC0013	57.3 ± 2.87	94	-0.5	
LC0014	64.4 ± 5.02	106	0.47	
LC0015	- ± -	-	-	
LC0016	62.8 ± 6.3	103	0.25	
LC0017	55.063 ± 0.191	90.3	-0.81	
LC0018	62.869 ± 6.287	103	0.26	
LC0019	63.6 ± 9.5	104	0.36	
LC0020	64.639 ± 3.6198	106	0.5	
LC0021	62.3 ± 9.345	102	0.18	
LC0022	- ± -	-	-	
LC0023	60.4 ± 0.274	99.1	-0.08	
LC0024	57.46 ± 1.63	94.3	-0.48	
LC0025	- ± -	-	-	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	60.1 ± 3.06	61 ± 1.89	µg/l
Minimum	42.8	55.1	µg/l
Maximum	65.1	65.1	µg/l
Standard deviation	4.79	2.88	µg/l
rel. standard deviation	7.96	4.73	%
n	22	21	-

Graphical presentation of results
Results
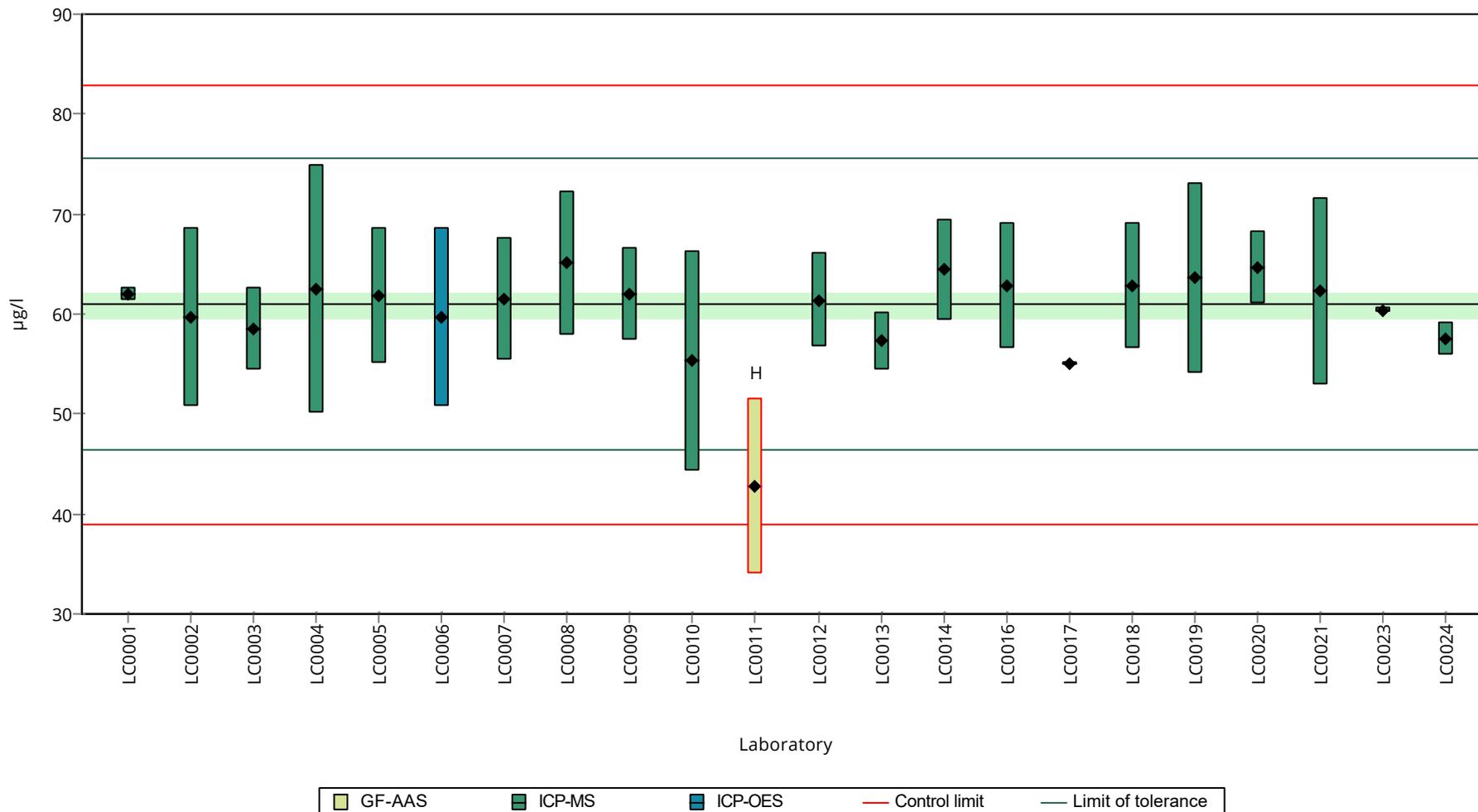
Recovery rate
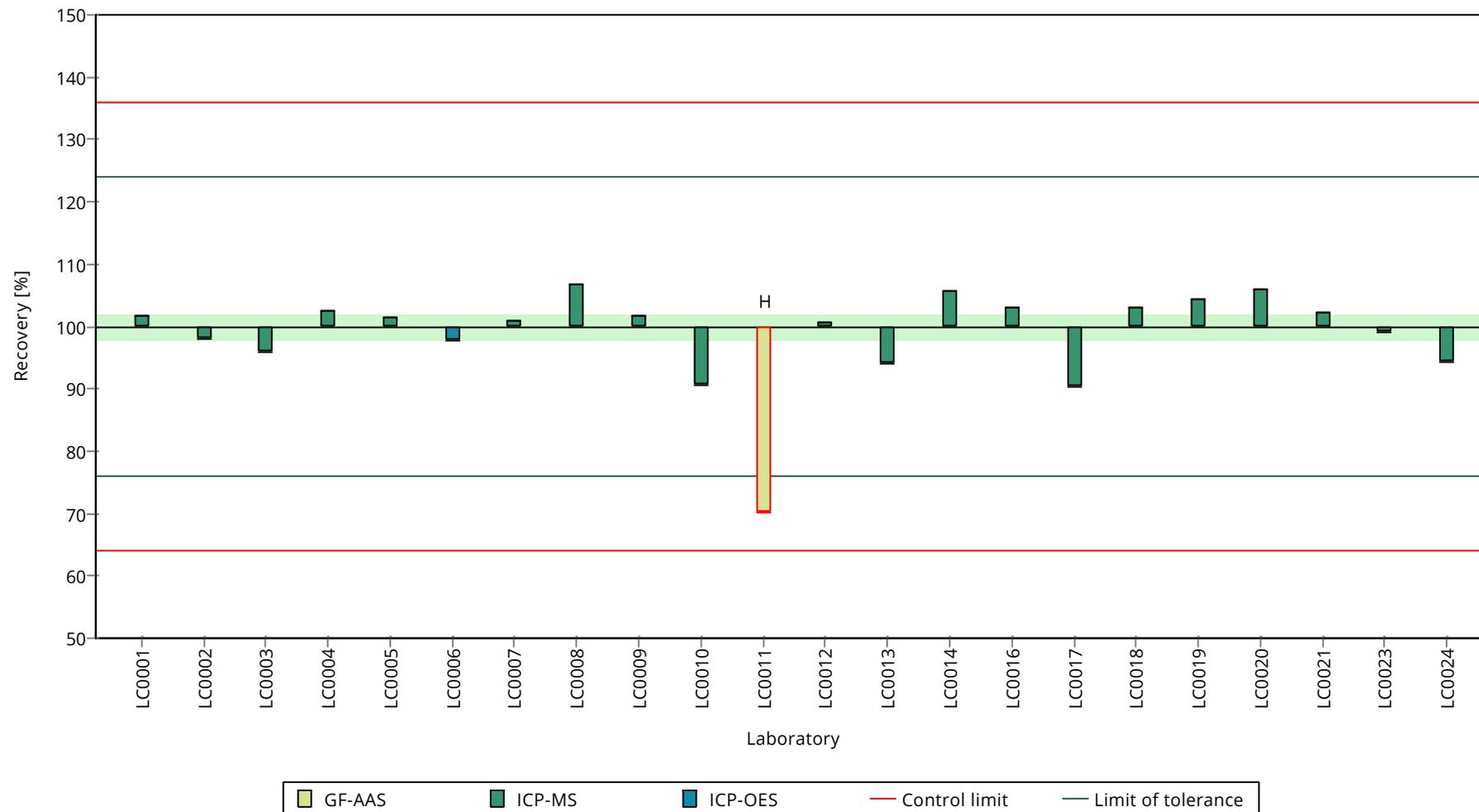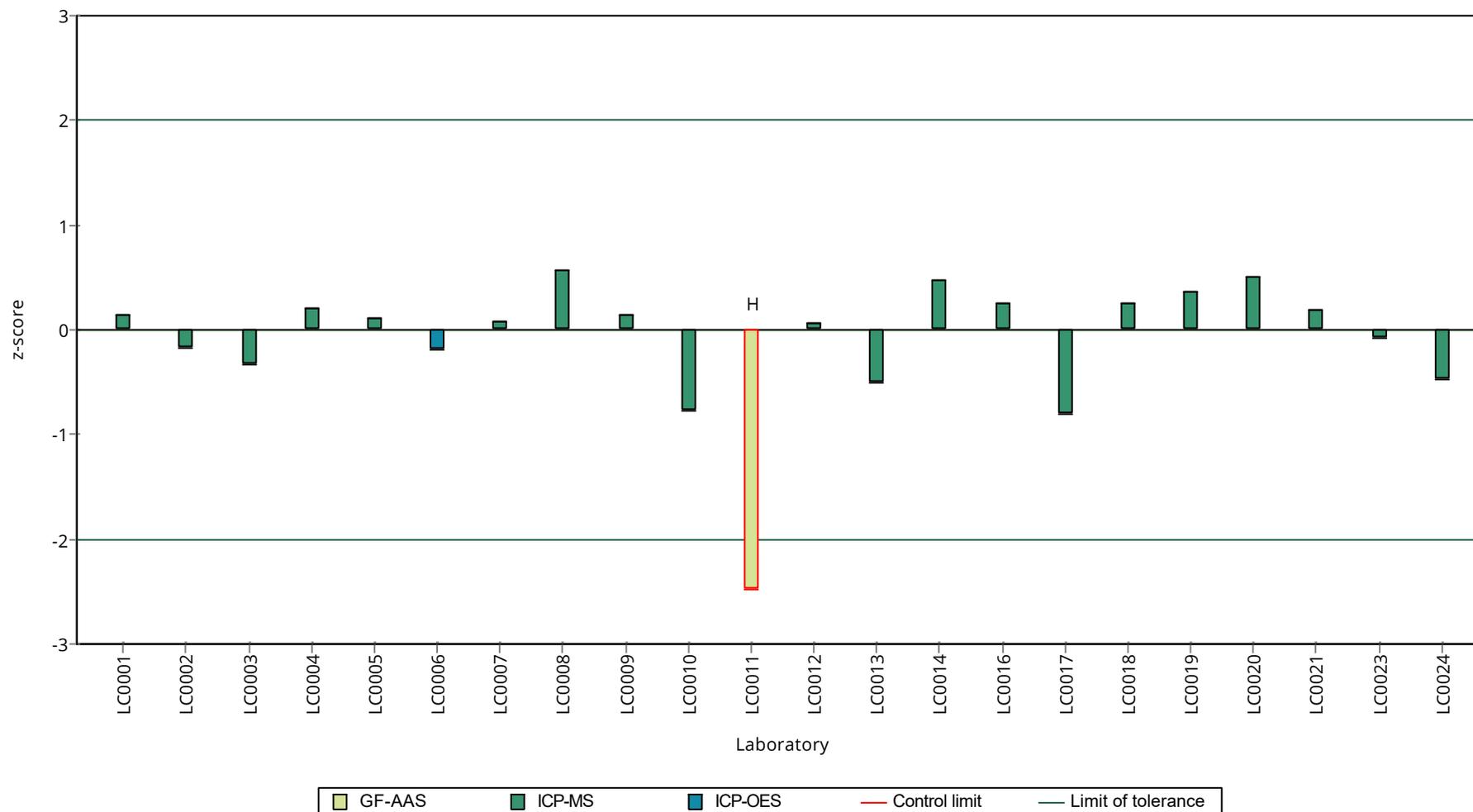
z-Score

Parameter oriented report

M180 A

Selenium

Unit	µg/l
Assigned value ± U (k=2)	4.41 ± 0.169
Criterion	0.529 (12 %)
Minimum - Maximum	3.87 - 5.26
Control test value ± U (k=2)	4.23 ± 0.423

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	4.16 ± 0.035	94.4	-0.46	
LC0002	4.44 ± 0.67	101	0.06	
LC0003	2.84 ± 0.85	64.5	-2.96	H
LC0004	4.65 ± 0.93	106	0.46	
LC0005	4.43 ± 0.532	101	0.05	
LC0006	5.63 ± 0.507	128	2.32	H
LC0007	4.96 ± 0.5	113	1.05	
LC0008	4.38 ± 0.66	99.4	-0.05	
LC0009	3.94 ± 0.591	89.4	-0.88	
LC0010	- ± -	-	-	
LC0011	- ± -	-	-	
LC0012	4.12 ± 0.305	93.5	-0.54	
LC0013	3.87 ± 0.426	87.8	-1.01	
LC0014	4.16 ± 0.77	94.4	-0.46	
LC0015	- ± -	-	-	
LC0016	4.46 ± 0.67	101	0.1	
LC0017	5.26 ± 0.081	119	1.62	
LC0018	3.1479 ± 0.315	71.5	-2.38	H
LC0019	4.6 ± 0.7	104	0.37	
LC0020	4.106 ± 0.505	93.2	-0.57	
LC0021	4.52 ± 0.678	103	0.22	
LC0022	- ± -	-	-	
LC0023	4.38 ± 0.0542	99.4	-0.05	
LC0024	3.065 ± 0.155	69.6	-2.54	H
LC0025	4.46 ± 0.98	101	0.1	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	4.27 ± 0.436	4.41 ± 0.254	µg/l
Minimum	2.84	3.87	µg/l
Maximum	5.63	5.26	µg/l
Standard deviation	0.666	0.349	µg/l
rel. standard deviation	15.6	7.93	%
n	21	17	-

Graphical presentation of results
Results
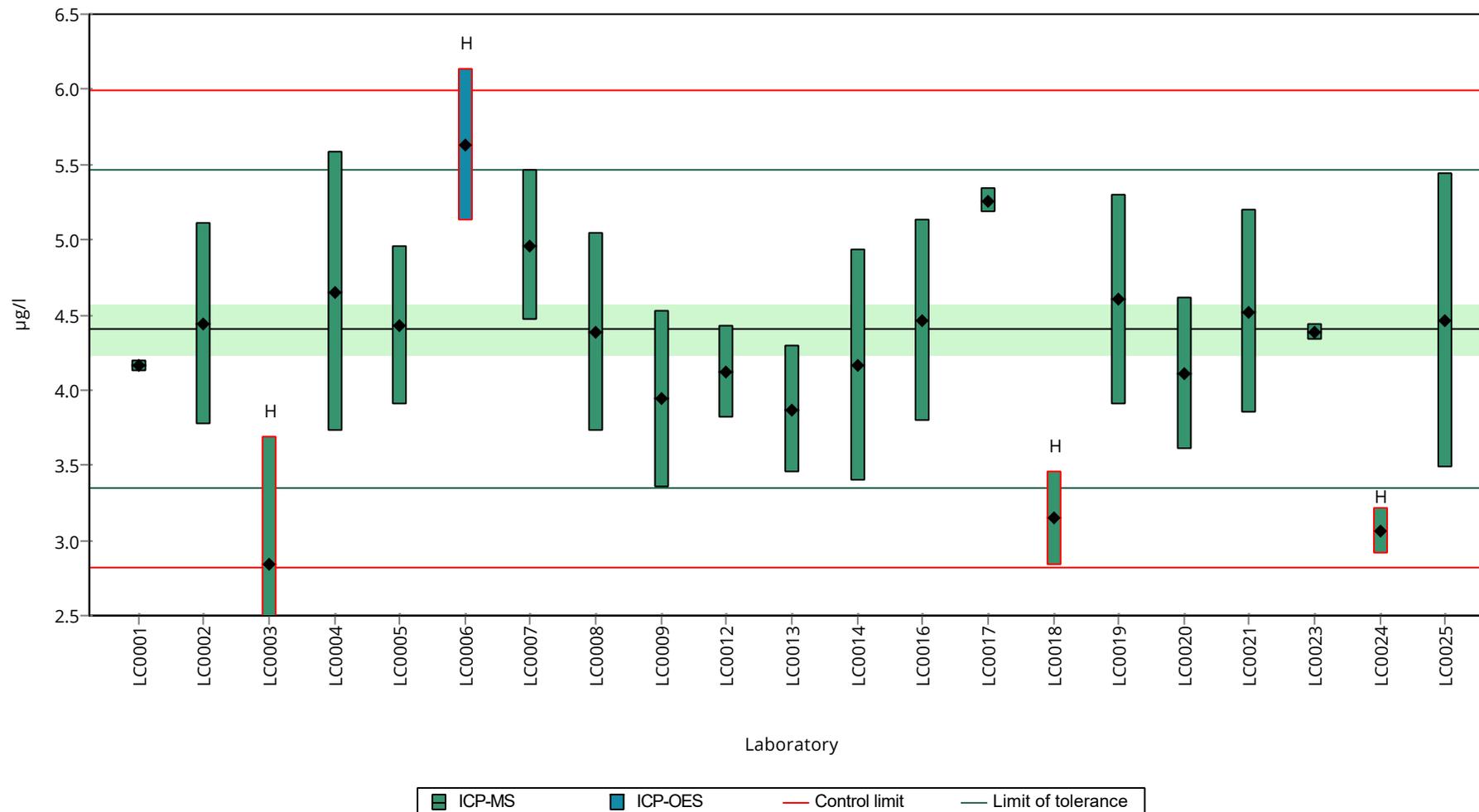
Recovery rate
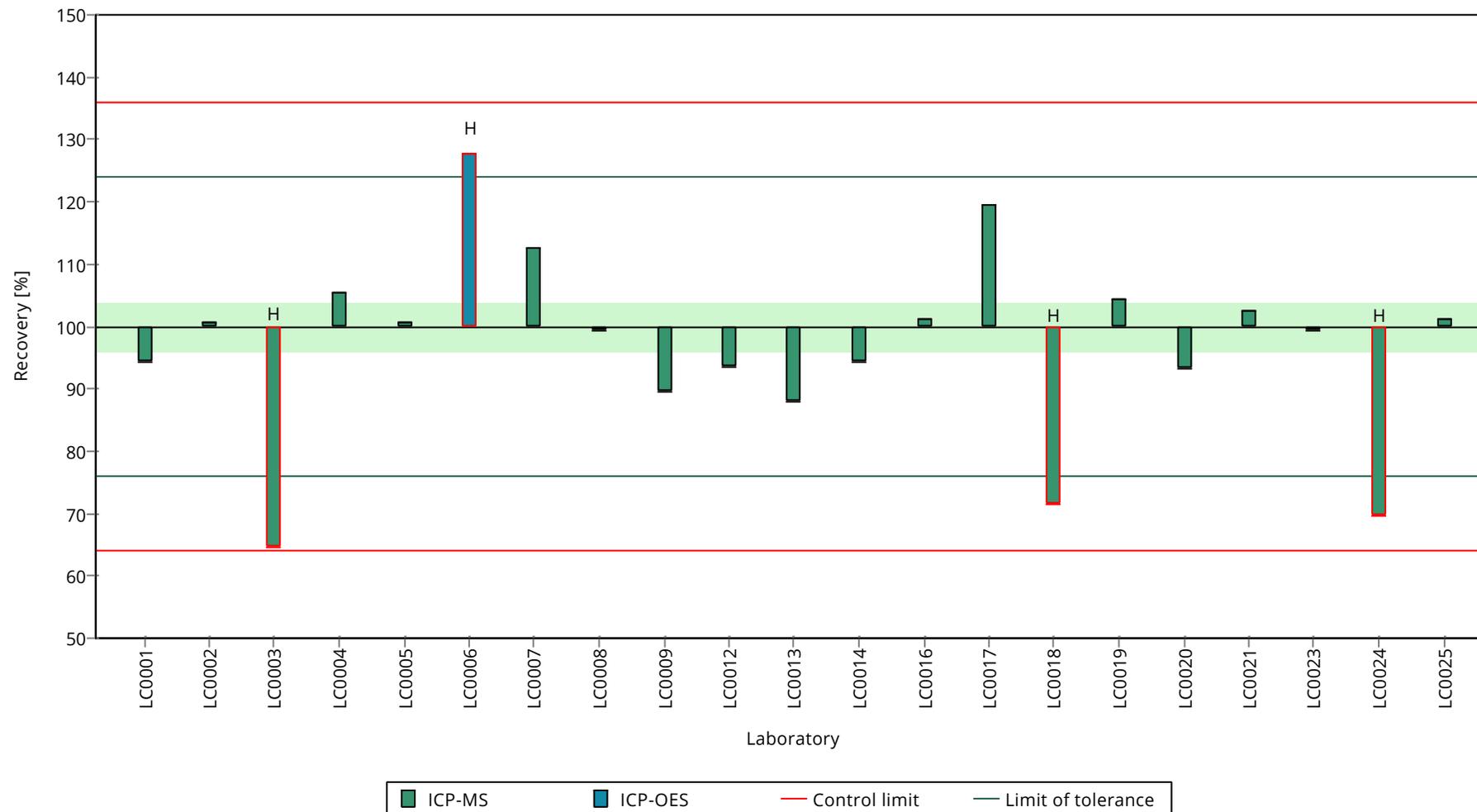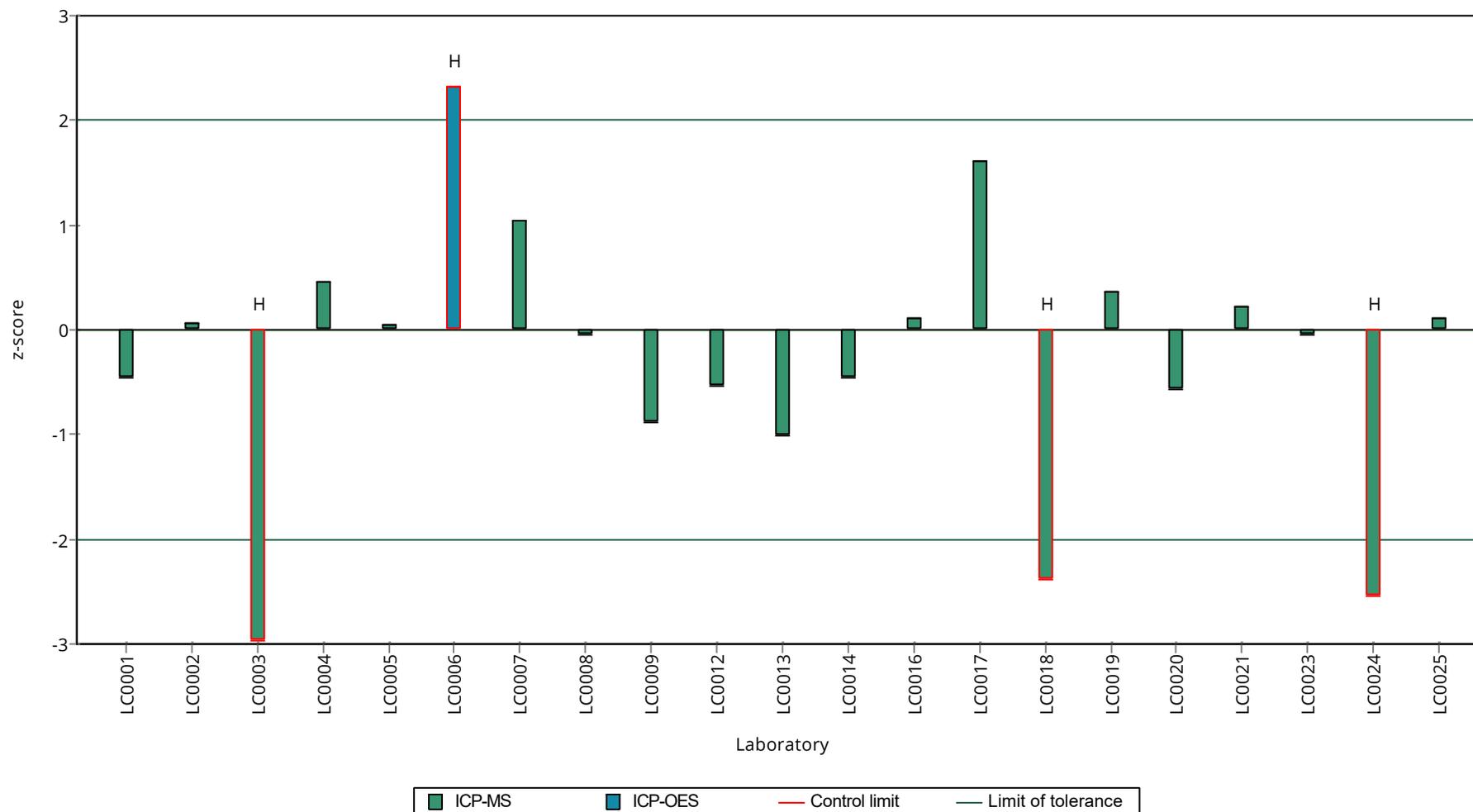
z-Score

Parameter oriented report

M180 B

Selenium

Unit	µg/l
Assigned value ± U (k=2)	19.4 ± 0.524
Criterion	2.33 (12 %)
Minimum - Maximum	16.8 - 21.6
Control test value ± U (k=2)	19.5 ± 1.95

Labcode	Result	±	U	Recovery [%]	z-Score	Comments
LC0001	19	±	0.058	98	-0.17	
LC0002	19.4	±	2.92	100	0.00	
LC0003	12	±	3.6	61.9	-3.18	H
LC0004	19.5	±	3.9	101	0.05	
LC0005	19.8	±	2.38	102	0.18	
LC0006	21.6	±	1.94	111	0.95	
LC0007	22.7	±	2.3	117	1.42	H
LC0008	20	±	3	103	0.26	
LC0009	17.49	±	2.186	90.2	-0.82	
LC0010	-	±	-	-	-	
LC0011	-	±	-	-	-	
LC0012	19.6	±	1.45	101	0.09	
LC0013	18.4	±	2.02	94.9	-0.43	
LC0014	18.33	±	3.41	94.5	-0.46	
LC0015	-	±	-	-	-	
LC0016	20.2	±	3	104	0.35	
LC0017	20.99	±	0.133	108	0.69	
LC0018	16.846	±	1.685	86.9	-1.09	
LC0019	20	±	3	103	0.26	
LC0020	18.197	±	2.2382	93.9	-0.51	
LC0021	19.93	±	2.99	103	0.23	
LC0022	-	±	-	-	-	
LC0023	19.9	±	0.599	103	0.22	
LC0024	19.61	±	0.29	101	0.09	
LC0025	19.6	±	3.5	101	0.09	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	19.2 ± 1.38	19.4 ± 0.786	µg/l
Minimum	12	16.8	µg/l
Maximum	22.7	21.6	µg/l
Standard deviation	2.1	1.14	µg/l
rel. standard deviation	10.9	5.89	%
n	21	19	-

Graphical presentation of results
Results
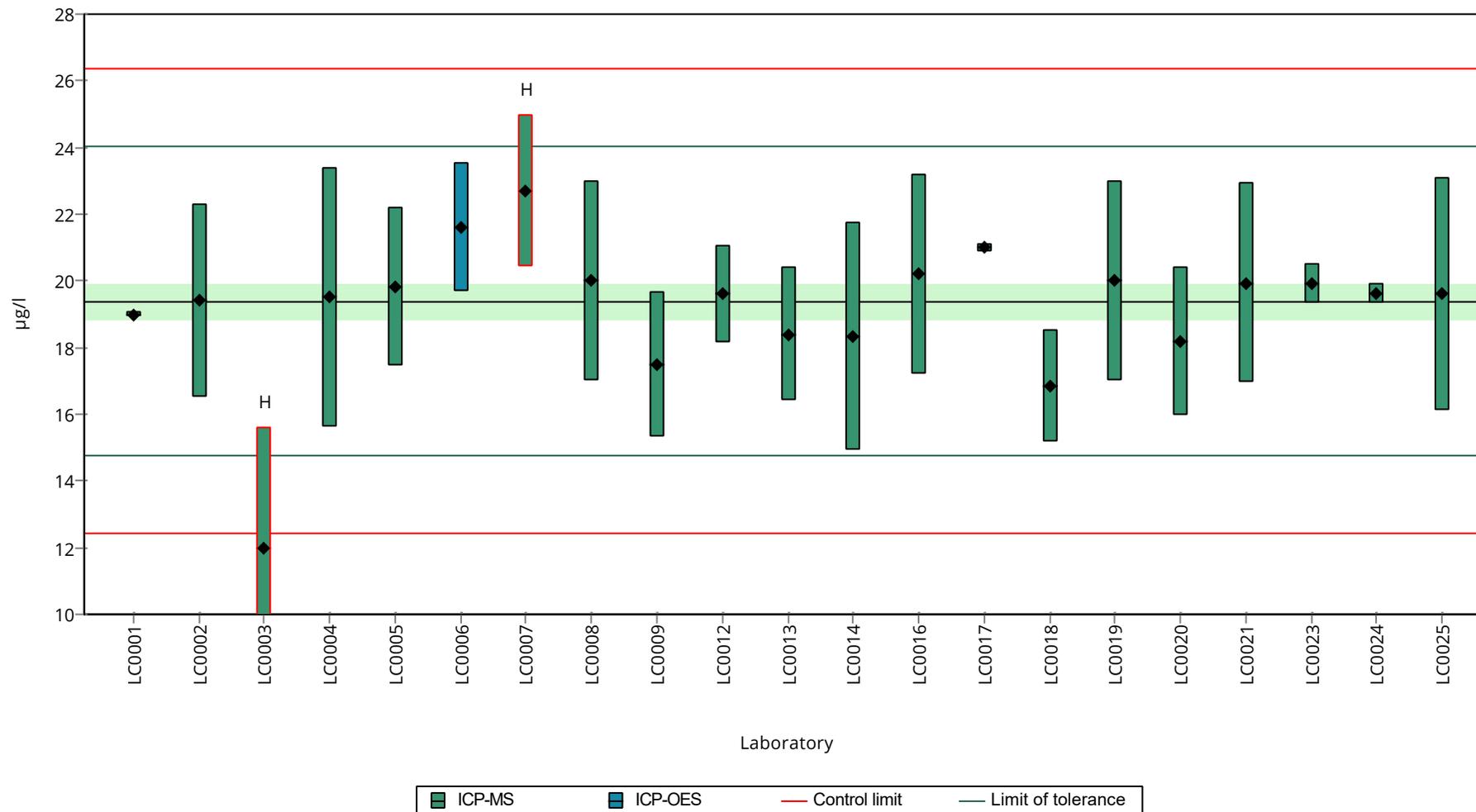
Recovery rate
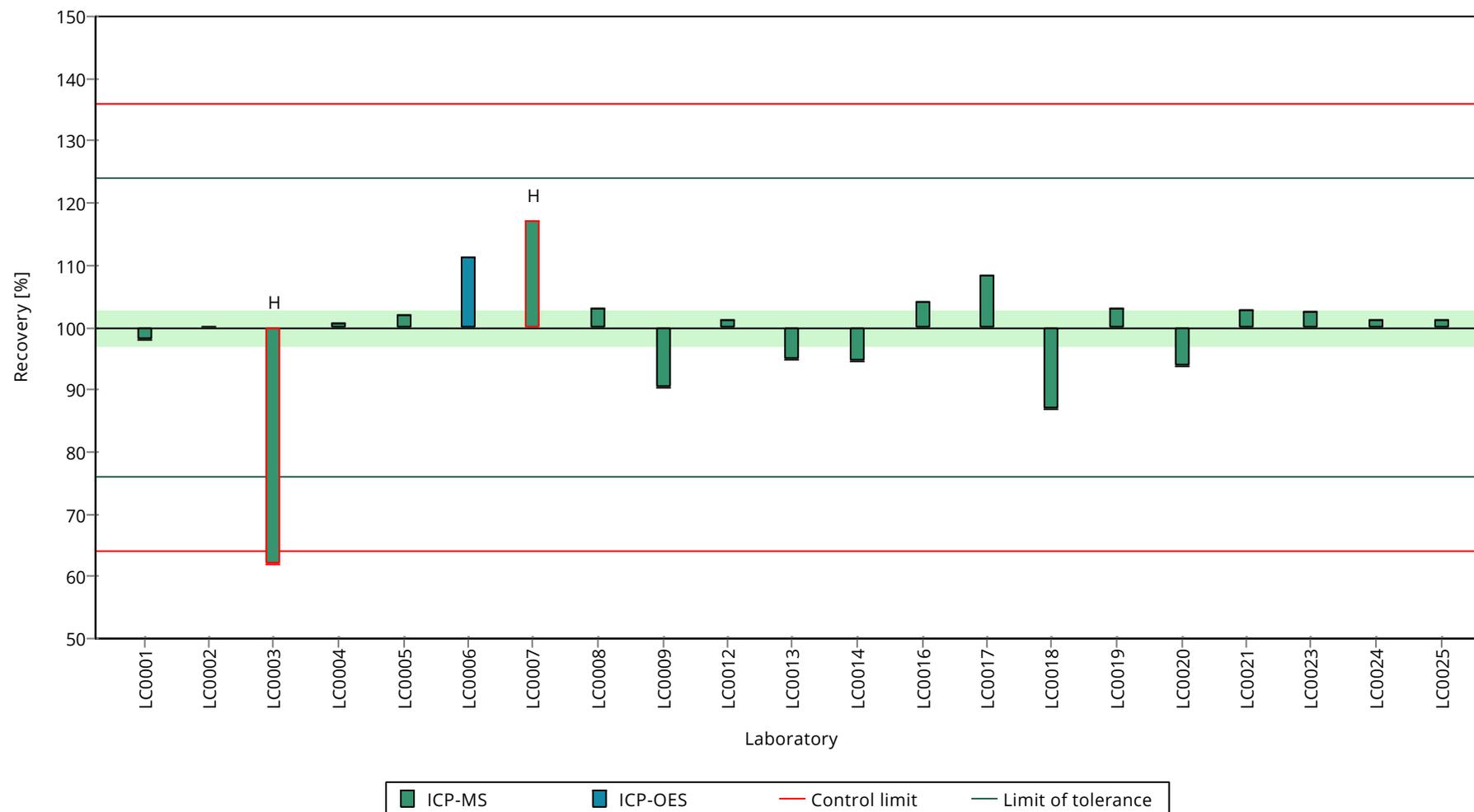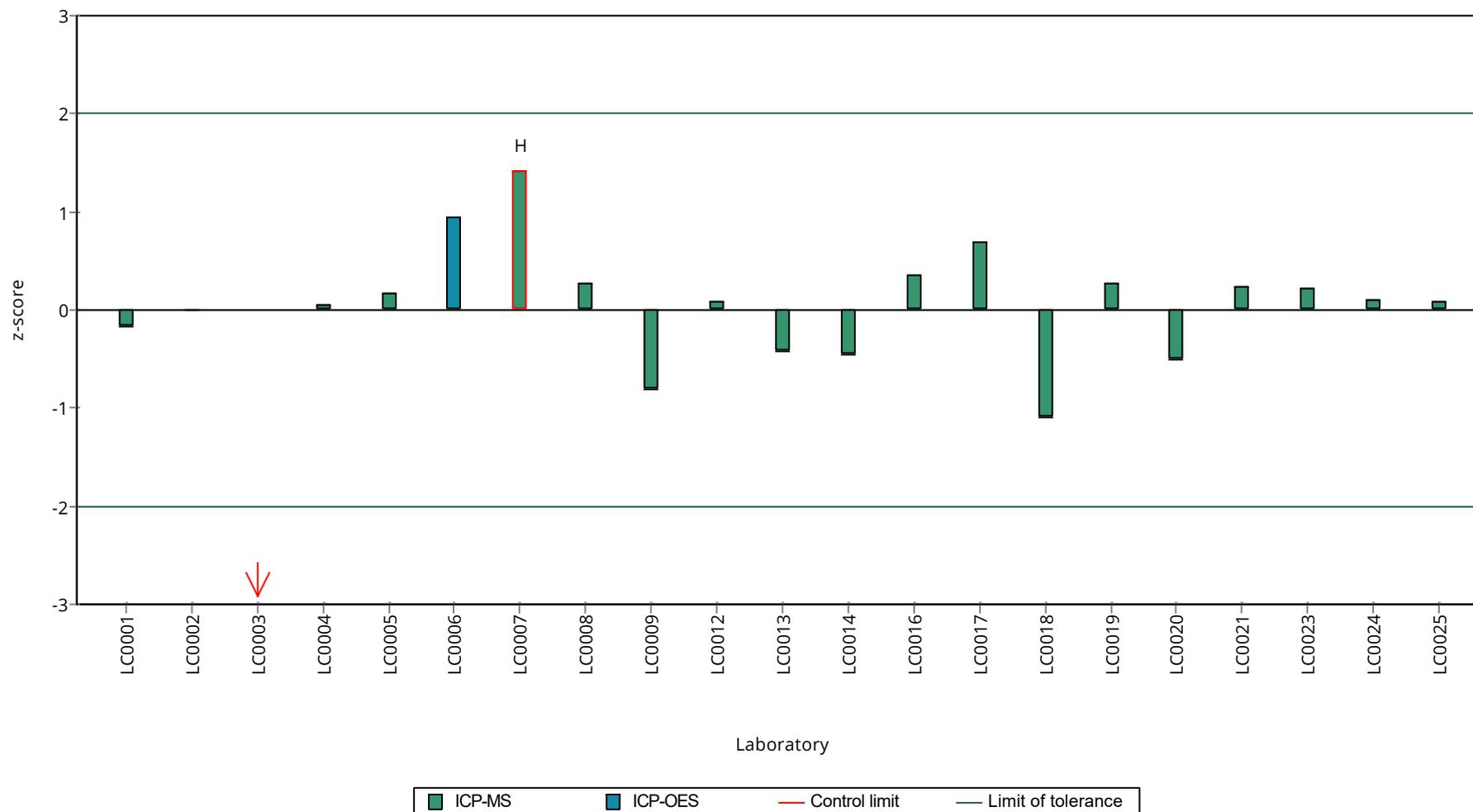
z-Score

Parameter oriented report

M180 A

Uranium

Unit	µg/l
Assigned value ± U (k=2)	1.2 ± 0.0488
Criterion	0.104 (8.6 %)
Minimum - Maximum	0.976 - 1.39
Control test value ± U (k=2)	1.17 ± 0.117

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	1.16 ± 0.017	96.4	-0.42	
LC0002	1.34 ± 0.2	111	1.32	
LC0003	1.22 ± 0.09	101	0.16	
LC0004	1.2 ± 0.24	99.7	-0.04	
LC0005	1.21 ± 0.121	101	0.06	
LC0006	- ± -	-	-	
LC0007	1.28 ± 0.13	106	0.74	
LC0008	1.23 ± 0.18	102	0.25	
LC0009	< 3 (LOQ) ± -	-	-	
LC0010	- ± -	-	-	
LC0011	- ± -	-	-	
LC0012	1.32 ± 0.0925	110	1.12	
LC0013	1.14 ± 0.057	94.7	-0.62	
LC0014	1.25 ± 0.25	104	0.45	
LC0015	- ± -	-	-	
LC0016	1.15 ± 0.12	95.5	-0.52	
LC0017	1.17 ± 0.013	97.2	-0.33	
LC0018	1.032 ± 0.103	85.7	-1.66	
LC0019	1.1 ± 0.2	91.4	-1	
LC0020	0.976 ± 0.2	81.1	-2.2	
LC0021	1.26 ± 0.189	105	0.54	
LC0022	- ± -	-	-	
LC0023	1.24 ± 0.0378	103	0.35	
LC0024	1.39 ± 0.05	115	1.8	
LC0025	- ± -	-	-	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	1.2 ± 0.0732	1.2 ± 0.0732	µg/l
Minimum	0.976	0.976	µg/l
Maximum	1.39	1.39	µg/l
Standard deviation	0.104	0.104	µg/l
rel. standard deviation	8.6	8.6	%
n	18	18	-

Graphical presentation of results
Results

Laboratory

ICP-MS   Control limit   Limit of tolerance

UMWELT BUNDES AMT
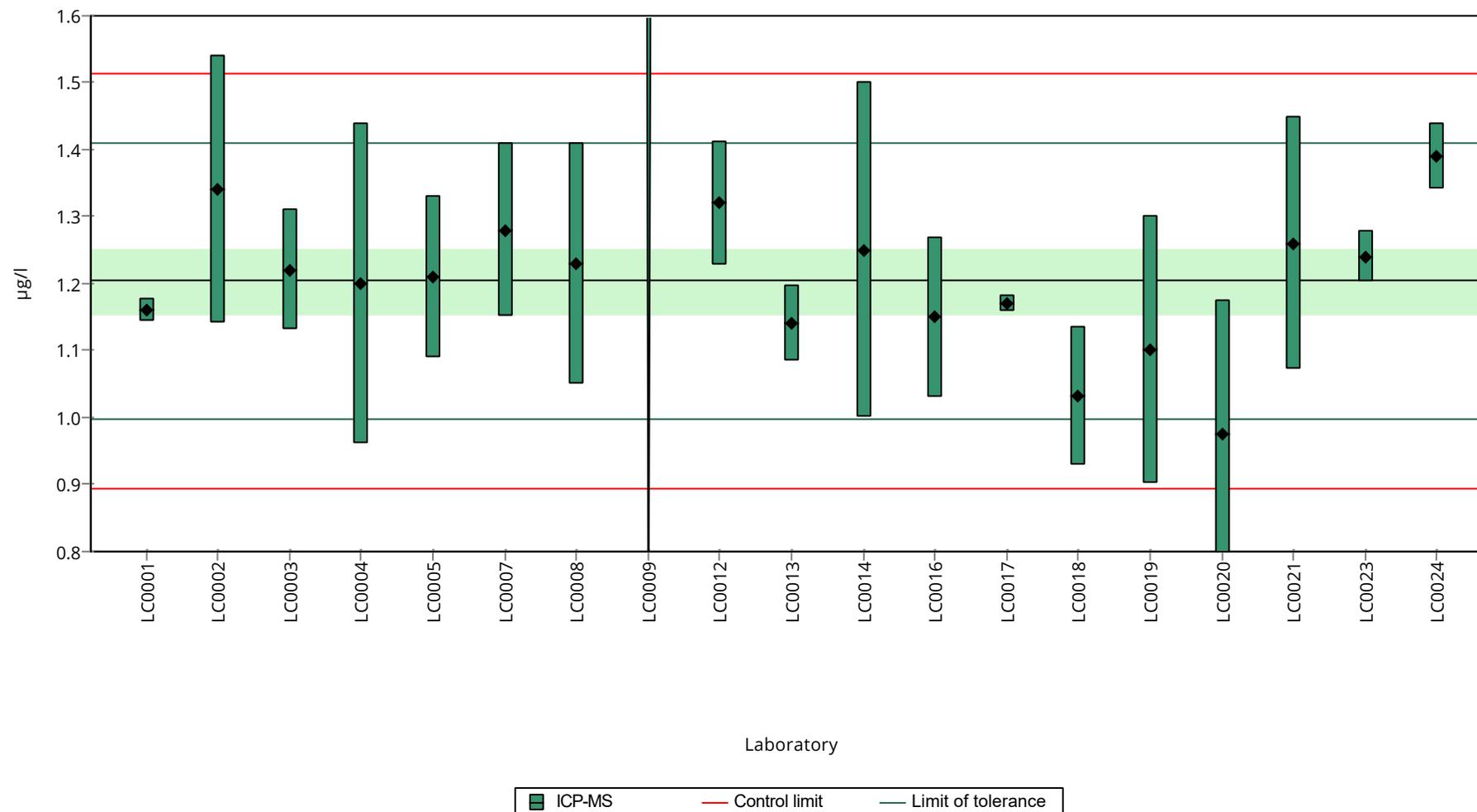
Recovery rate
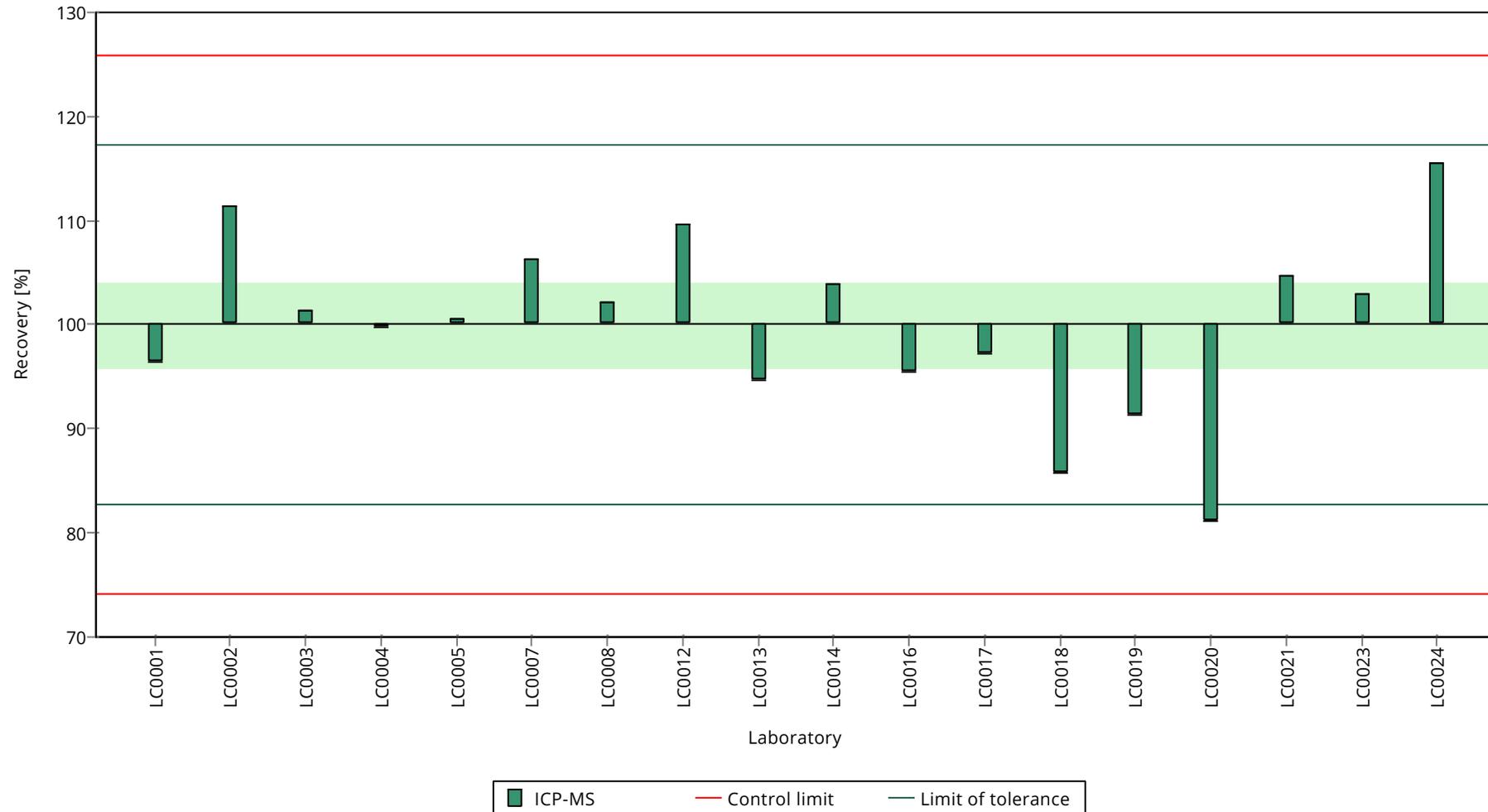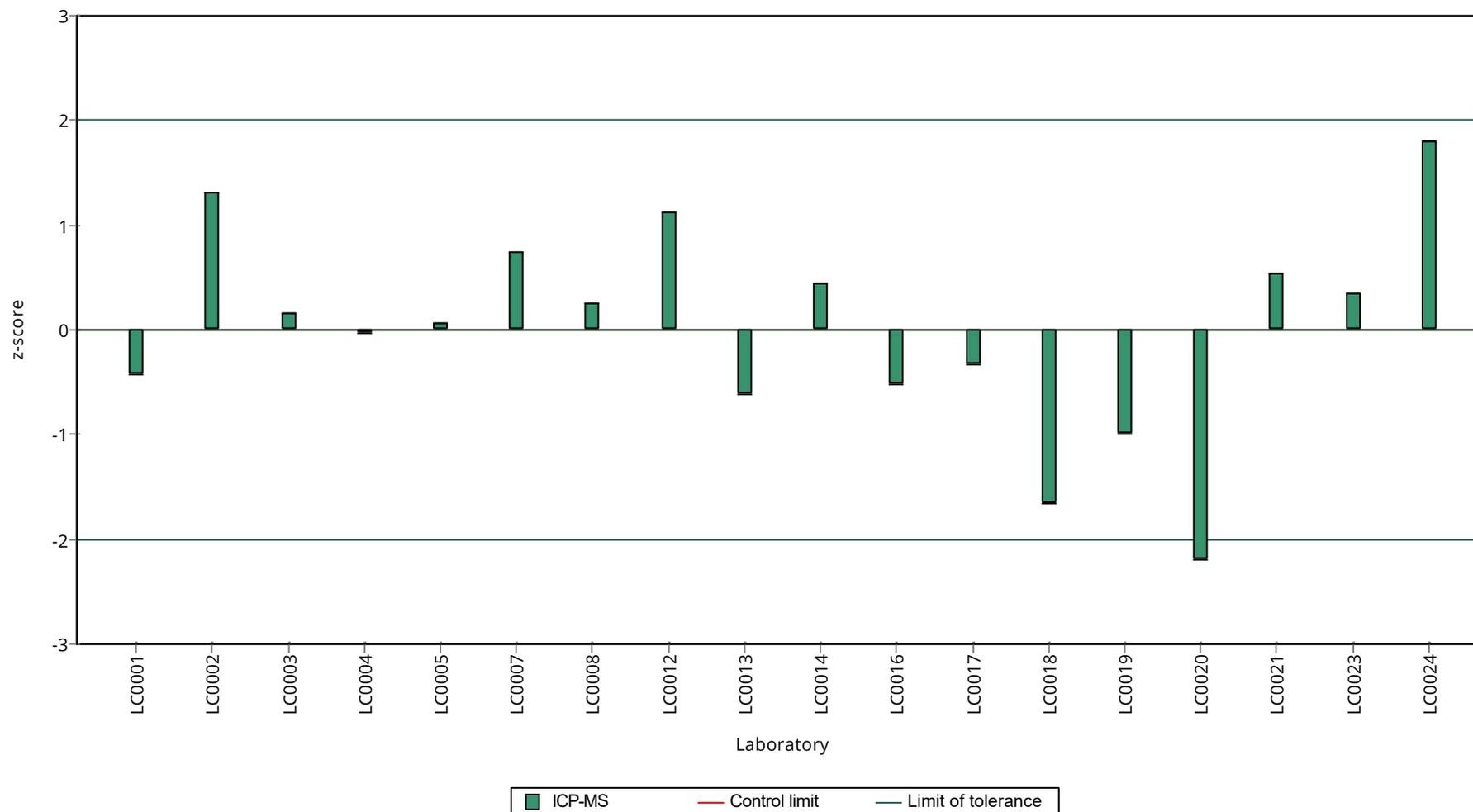
z-Score

Parameter oriented report

M180 B

Uranium

Unit	µg/l
Assigned value ± U (k=2)	2.13 ± 0.0419
Criterion	0.14 (6.6 %)
Minimum - Maximum	1.96 - 2.25
Control test value ± U (k=2)	2.09 ± 0.209

Labcode	Result ± U	Recovery [%]	z-Score	Comments
LC0001	2.14 ± 0.014	101	0.09	
LC0002	2.25 ± 0.34	106	0.87	
LC0003	2.18 ± 0.15	102	0.37	
LC0004	2.2 ± 0.44	103	0.51	
LC0005	2.13 ± 0.213	100	0.01	
LC0006	- ± -	-	-	
LC0007	2.2 ± 0.22	103	0.51	
LC0008	2.2 ± 0.33	103	0.51	
LC0009	2.16 ± 0.216	102	0.23	
LC0010	- ± -	-	-	
LC0011	- ± -	-	-	
LC0012	2.24 ± 0.157	105	0.8	
LC0013	2.03 ± 0.102	95.4	-0.7	
LC0014	2.2 ± 0.43	103	0.51	
LC0015	- ± -	-	-	
LC0016	2.06 ± 0.21	96.8	-0.48	
LC0017	2.053 ± 0.043	96.5	-0.53	
LC0018	1.959 ± 0.196	92.1	-1.2	
LC0019	2 ± 0.3	94	-0.91	
LC0020	1.98 ± 0.4059	93	-1.05	
LC0021	2.22 ± 0.333	104	0.66	
LC0022	- ± -	-	-	
LC0023	2.15 ± 0.0358	101	0.16	
LC0024	2.08 ± 0.1	97.7	-0.34	
LC0025	- ± -	-	-	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	2.13 ± 0.0628	2.13 ± 0.0628	µg/l
Minimum	1.96	1.96	µg/l
Maximum	2.25	2.25	µg/l
Standard deviation	0.0913	0.0913	µg/l
rel. standard deviation	4.29	4.29	%
n	19	19	-

Graphical presentation of results
Results
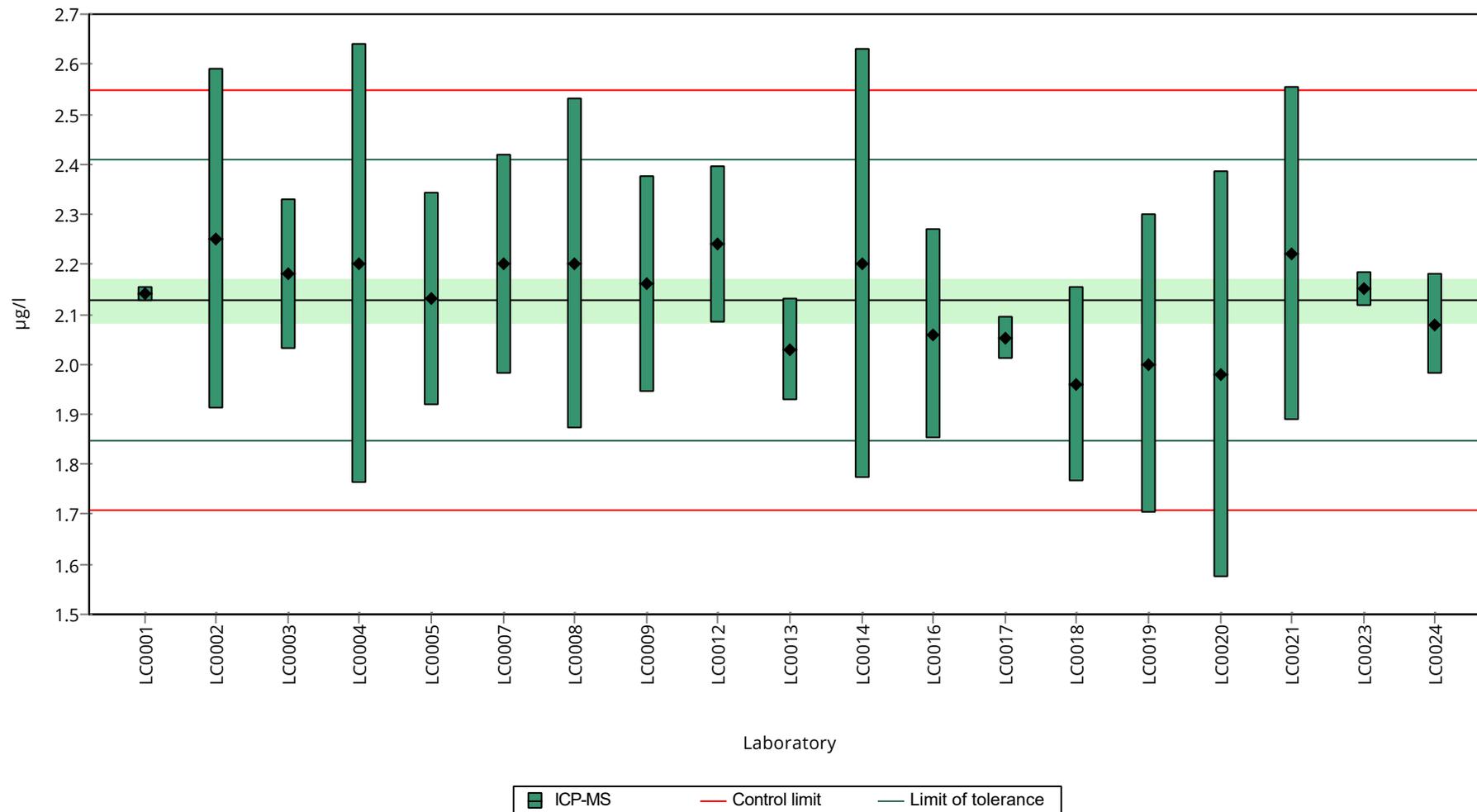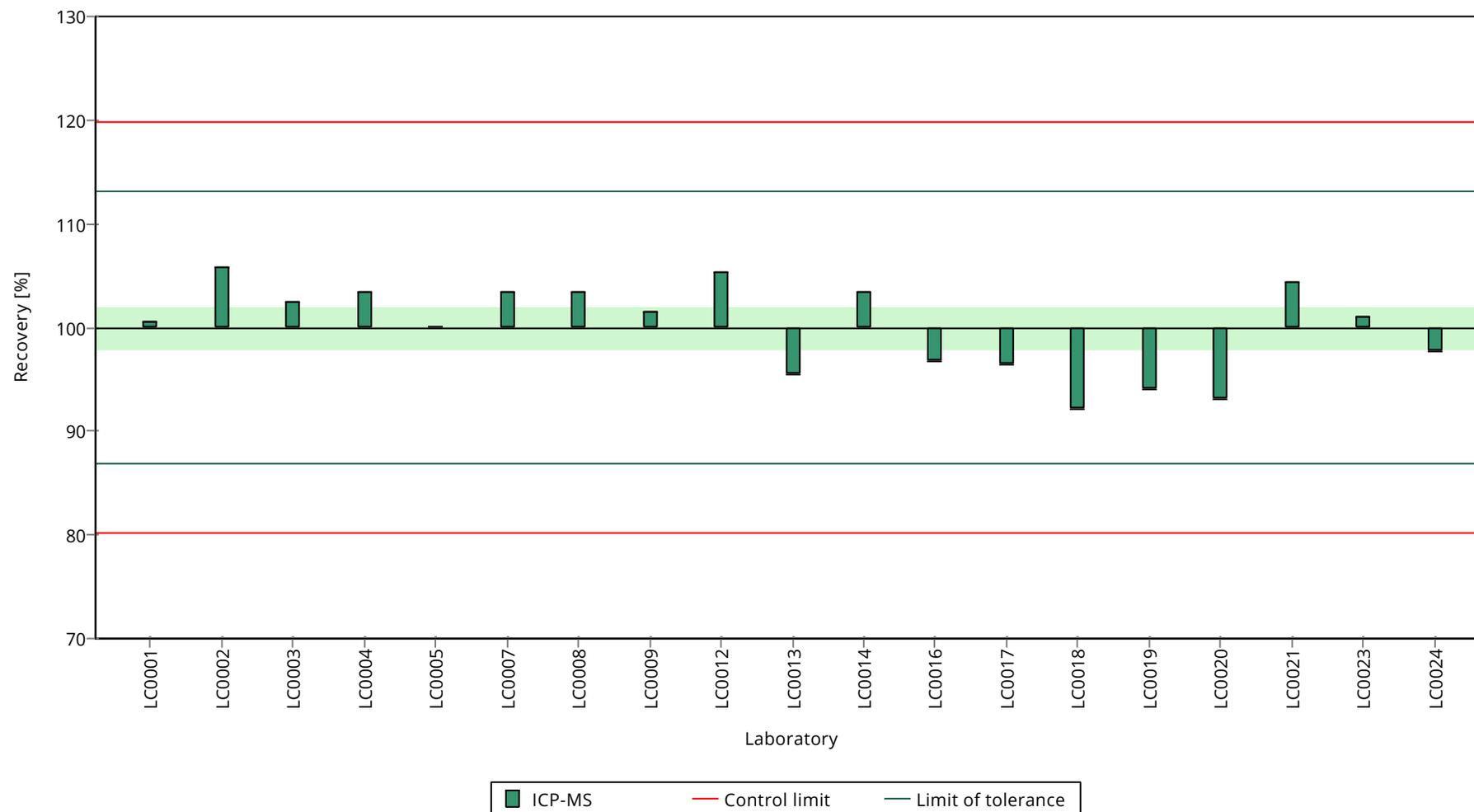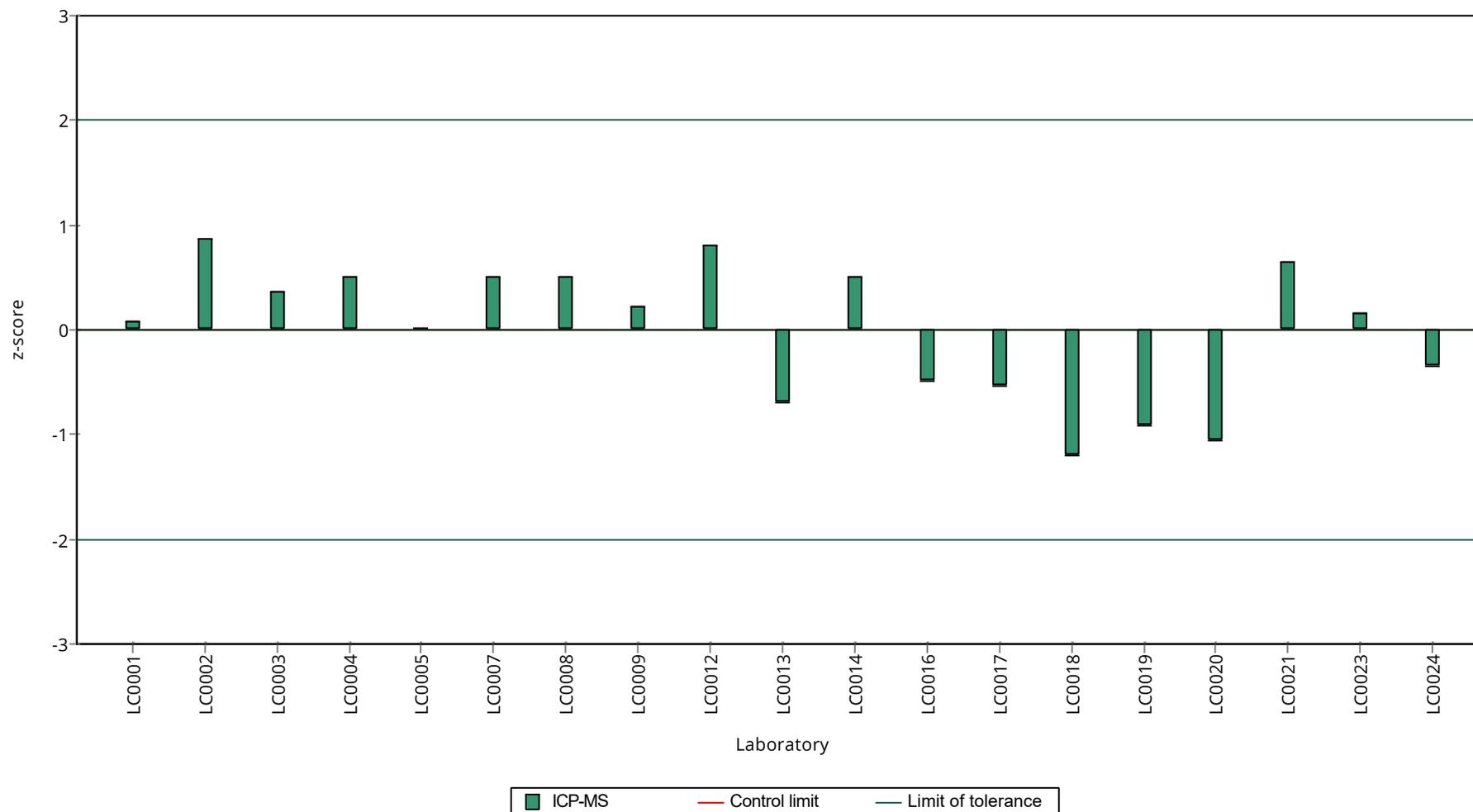
Laboratory

■ ICP-MS — Control limit — Limit of tolerance

Recovery rate

z-Score

Parameter oriented report

M180 A

Zinc

Unit	µg/l
Assigned value ± U (k=2)	1150 ± 18.1
Criterion	103 (9 %)
Minimum - Maximum	1070 - 1220
Control test value ± U (k=2)	1110 ± 233

Labcode	Result	±	U	Recovery [%]	z-Score	Comments
LC0001	1160	±	20	101	0.1	
LC0002	949	±	142	82.5	-1.94	H
LC0003	1127	±	79	98	-0.22	
LC0004	1150	±	230	100	0	
LC0005	1170	±	152	102	0.19	
LC0006	1175.67	±	141.1	102	0.25	
LC0007	1210	±	121	105	0.58	
LC0008	1170	±	176	102	0.19	
LC0009	1112	±	83.4	96.7	-0.37	
LC0010	-	±	-	-	-	
LC0011	671.3	±	13.4	58.4	-4.63	H
LC0012	1160	±	51.7	101	0.1	
LC0013	966	±	48.3	84	-1.78	H
LC0014	1117	±	136	97.1	-0.32	
LC0015	-	±	-	-	-	
LC0016	1088	±	109	94.6	-0.6	
LC0017	899.61	±	14.386	78.2	-2.42	H
LC0018	1139.568	±	113.957	99.1	-0.1	
LC0019	1147	±	172.1	99.7	-0.03	
LC0020	1194.095	±	160.0087	104	0.43	
LC0021	1189	±	178.35	103	0.38	
LC0022	1126	±	49.5	97.9	-0.23	
LC0023	1219	±	6.4	106	0.67	
LC0024	1070.43	±	10.11	93.1	-0.77	
LC0025	1125	±	121	97.8	-0.24	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± Cl (99%)	1100 ± 77.8	1150 ± 27.2	µg/l
Minimum	671	1070	µg/l
Maximum	1220	1220	µg/l
Standard deviation	124	39.5	µg/l
rel. standard deviation	11.3	3.43	%
n	23	19	-

Graphical presentation of results
Results

Laboratory

| ICP-MS | ICP-OES | voltammetry | Control limit | Limit of tolerance |
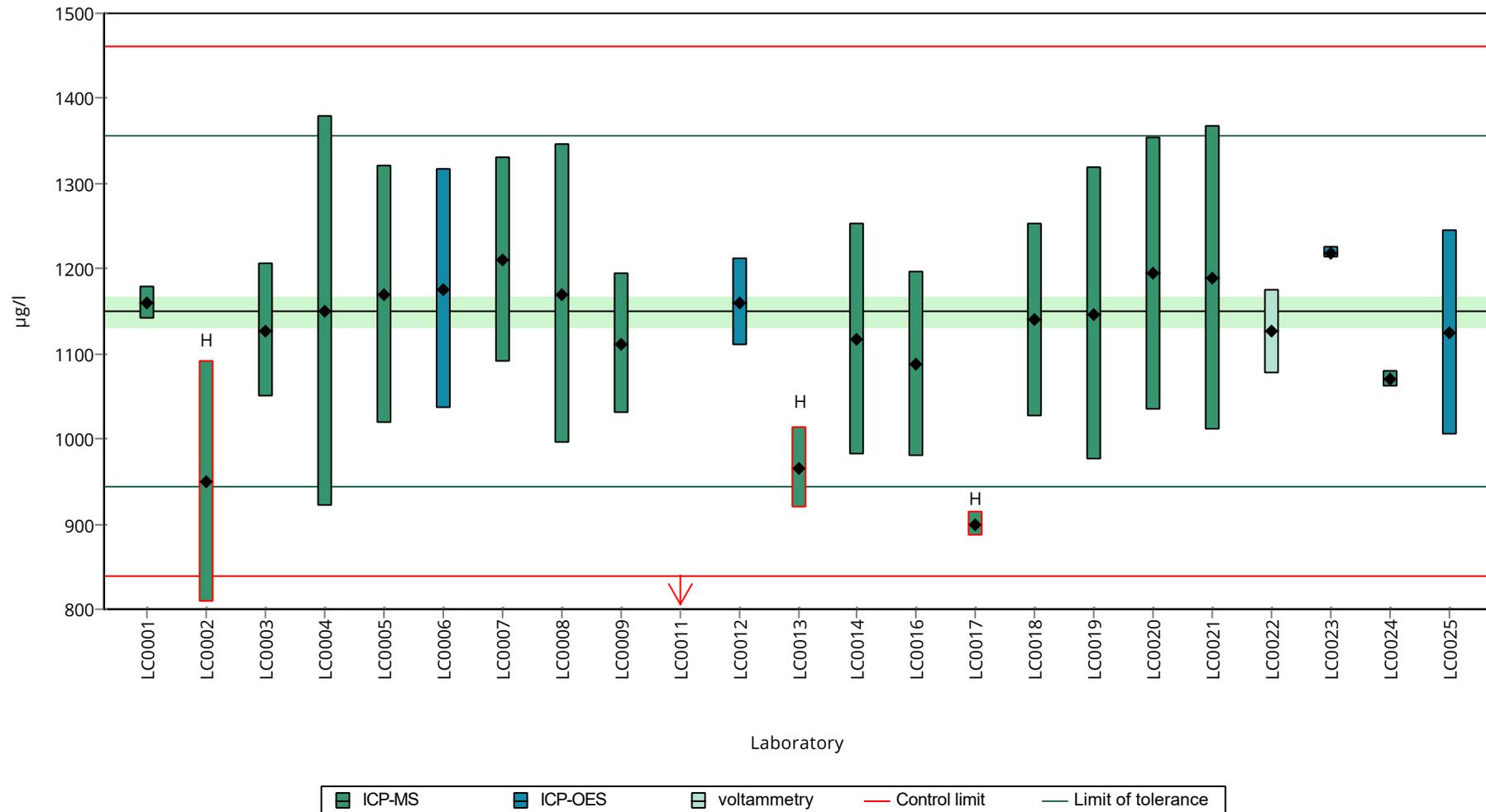
Recovery rate
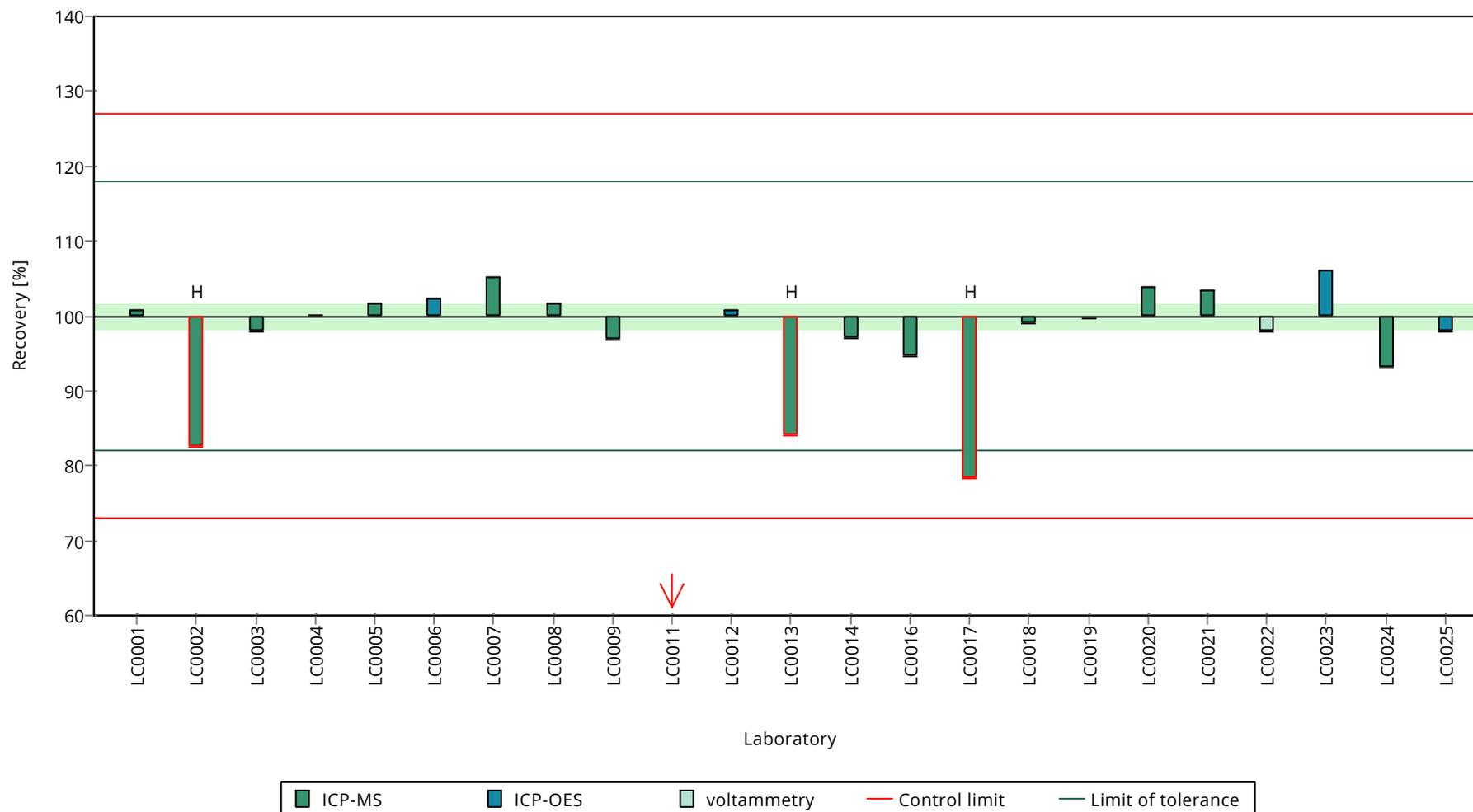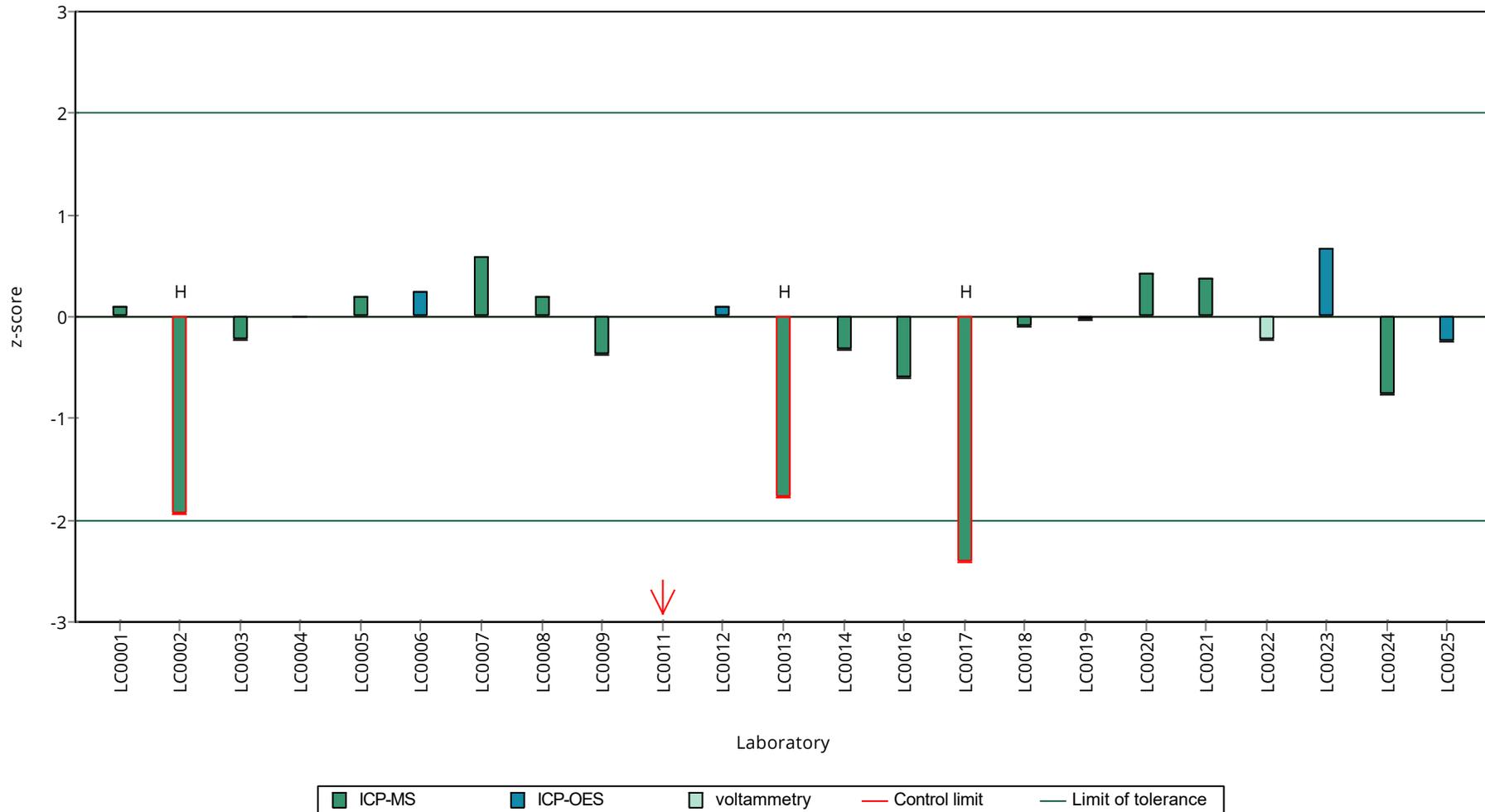
z-Score

Parameter oriented report

M180 B

Zinc

Unit	µg/l
Assigned value ± U (k=2)	767 ± 23.6
Criterion	69.1 (9 %)
Minimum - Maximum	638 - 849
Control test value ± U (k=2)	745 ± 156

Labcode	Result	±	U	Recovery [%]	z-Score	Comments
LC0001	804	±	7.211	105	0.53	
LC0002	670	±	101	87.3	-1.41	
LC0003	757	±	53	98.6	-0.15	
LC0004	795	±	159	104	0.4	
LC0005	768	±	99.8	100	0.01	
LC0006	815	±	81.5	106	0.69	
LC0007	849	±	85	111	1.18	
LC0008	848	±	127	111	1.17	
LC0009	800.1	±	60.008	104	0.47	
LC0010	-	±	-	-	-	
LC0011	638.2	±	27.64	83.2	-1.87	
LC0012	793	±	35.3	103	0.37	
LC0013	689	±	34.5	89.8	-1.13	
LC0014	762.5	±	93	99.4	-0.07	
LC0015	-	±	-	-	-	
LC0016	762	±	76	99.3	-0.08	
LC0017	700.48	±	1.171	91.3	-0.97	
LC0018	791.523	±	79.152	103	0.35	
LC0019	801	±	120.2	104	0.49	
LC0020	829.494	±	111.1522	108	0.9	
LC0021	771	±	116	100	0.05	
LC0022	720	±	31.7	93.8	-0.69	
LC0023	820	±	6.48	107	0.76	
LC0024	709.95	±	17.31	92.5	-0.83	
LC0025	755.5	±	82.7	98.5	-0.17	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	767 ± 35.3	767 ± 35.3	µg/l
Minimum	638	638	µg/l
Maximum	849	849	µg/l
Standard deviation	56.5	56.5	µg/l
rel. standard deviation	7.36	7.36	%
n	23	23	-

Graphical presentation of results
Results
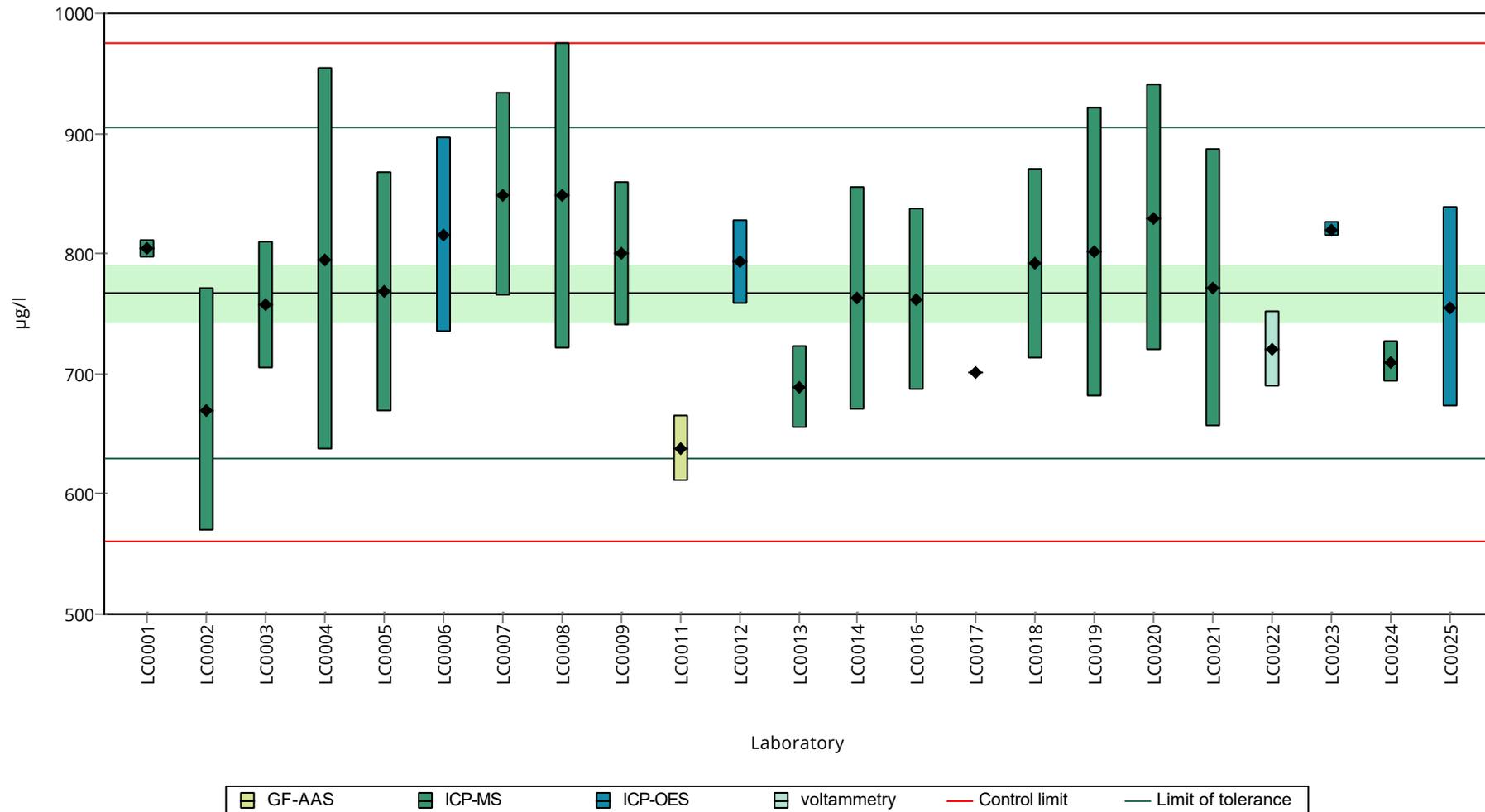
Recovery rate
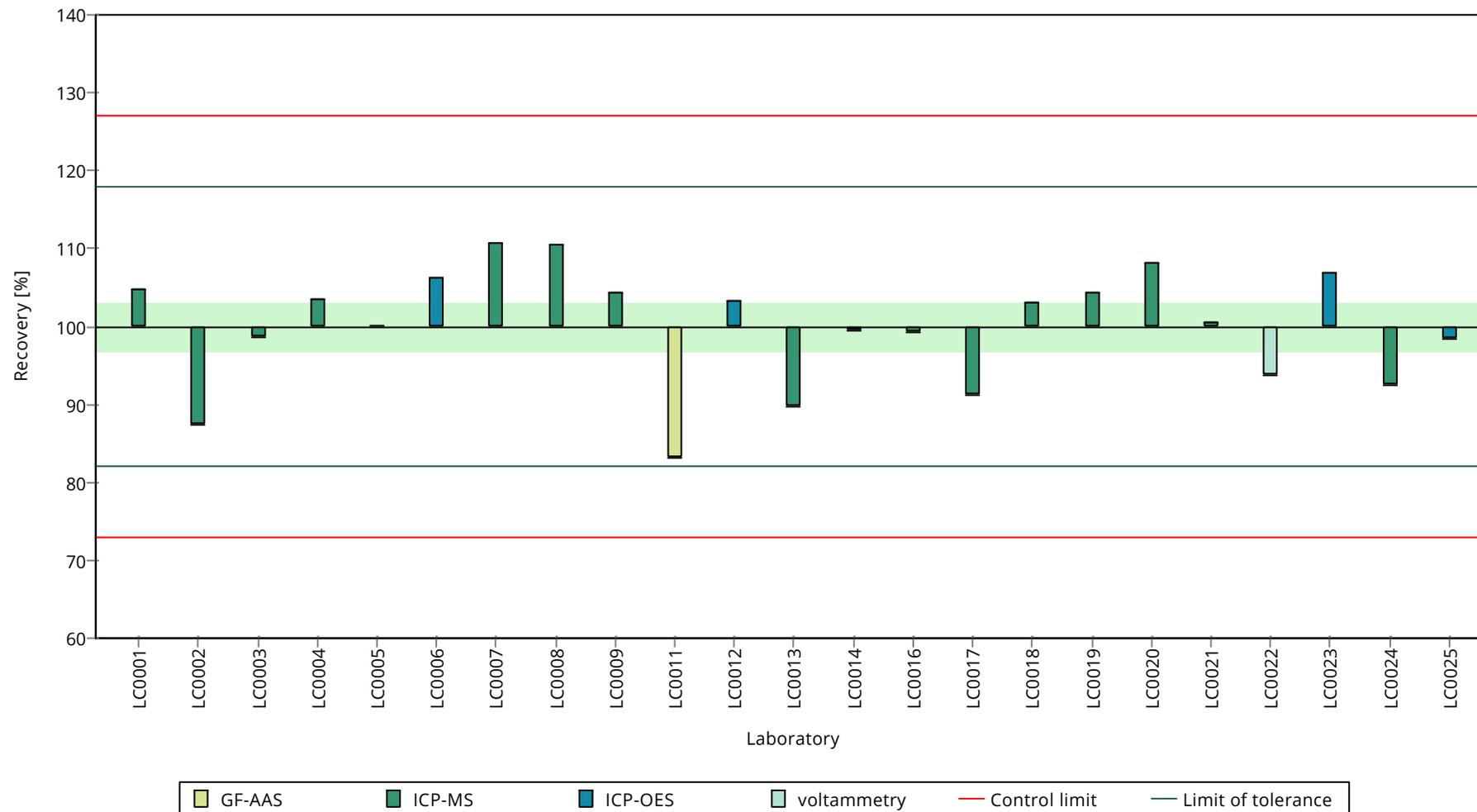
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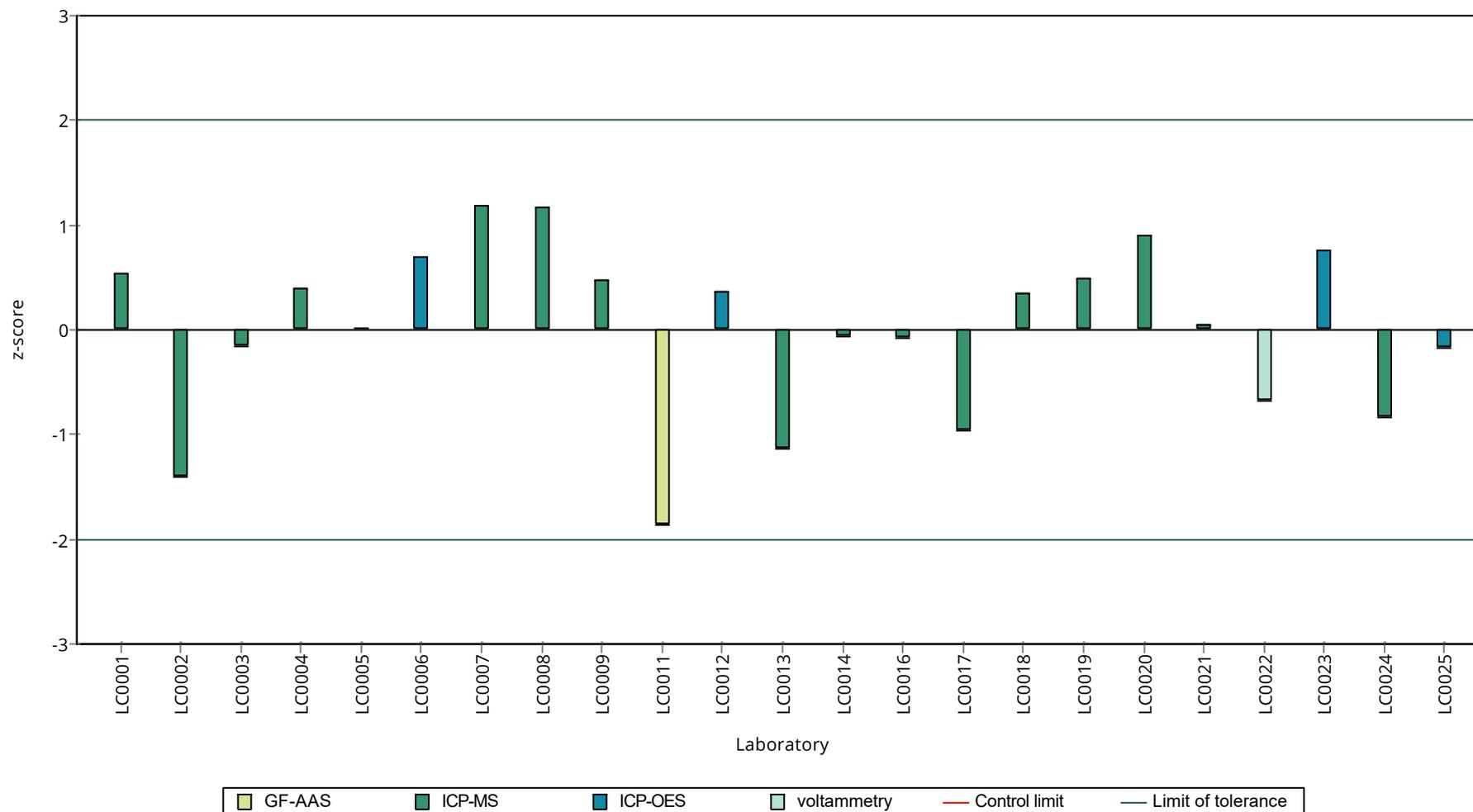
E8. Labororientierte Auswertung / Laboratory oriented report

Die Labororientierte Auswertung ist nach dem Laborcode sortiert.

The laboratory oriented report is sorted by laboratory code.

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	30 ± 0.28	3.03	98.9	-0.11
Arsenic	µg/l	5.19 ± 0.158	5.04 ± 0.044	0.675	97.1	-0.23
Cadmium	µg/l	0.644 ± 0.0142	0.633 ± 0.0209	0.0644	98.3	-0.17
Chromium	µg/l	2.27 ± 0.0977	2.1 ± 0.012	0.213	92.5	-0.80
Copper	µg/l	12.5 ± 0.346	12.8 ± 0.058	1.13	102	0.25
Iron	µg/l	66.6 ± 1.43	65.3 ± 0.212	7.33	98	-0.18
Lead	µg/l	2.16 ± 0.072	2.15 ± 0.021	0.216	99.6	-0.04
Manganese	µg/l	5.53 ± 0.158	<10 ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	3.72 ± 0.035	0.47	95.1	-0.41
Selenium	µg/l	4.41 ± 0.169	4.16 ± 0.035	0.529	94.4	-0.46
Uranium	µg/l	1.2 ± 0.0488	1.16 ± 0.017	0.104	96.4	-0.42
Zinc	µg/l	1150 ± 18.1	1160 ± 20	103	101	0.10

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.8 ± 0.015	0.25	101	0.05

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	602 ± 5.69	61.8	97.4	-0.26
Arsenic	µg/l	87.5 ± 1.5	86.1 ± 0.76	11.4	98.4	-0.12
Cadmium	µg/l	6.24 ± 0.127	6.34 ± 0.068	0.624	102	0.15
Chromium	µg/l	28.2 ± 0.401	27.6 ± 0.1	2.39	98	-0.23
Copper	µg/l	83.1 ± 1.3	84.7 ± 0.85	7.48	102	0.22
Iron	µg/l	478 ± 9.93	479 ± 4.95	52.6	100	0.02
Lead	µg/l	49.3 ± 0.959	52.1 ± 0.64	4.93	106	0.58

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	787 ± 3.536	54.2	105	0.63
Nickel	µg/l	61 ± 1.26	62 ± 0.723	7.32	102	0.14
Selenium	µg/l	19.4 ± 0.524	19 ± 0.058	2.33	98	-0.17
Uranium	µg/l	2.13 ± 0.0419	2.14 ± 0.014	0.14	101	0.09
Zinc	µg/l	767 ± 23.6	804 ± 7.211	69.1	105	0.53

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.18 ± 0.036	0.438	102	0.13
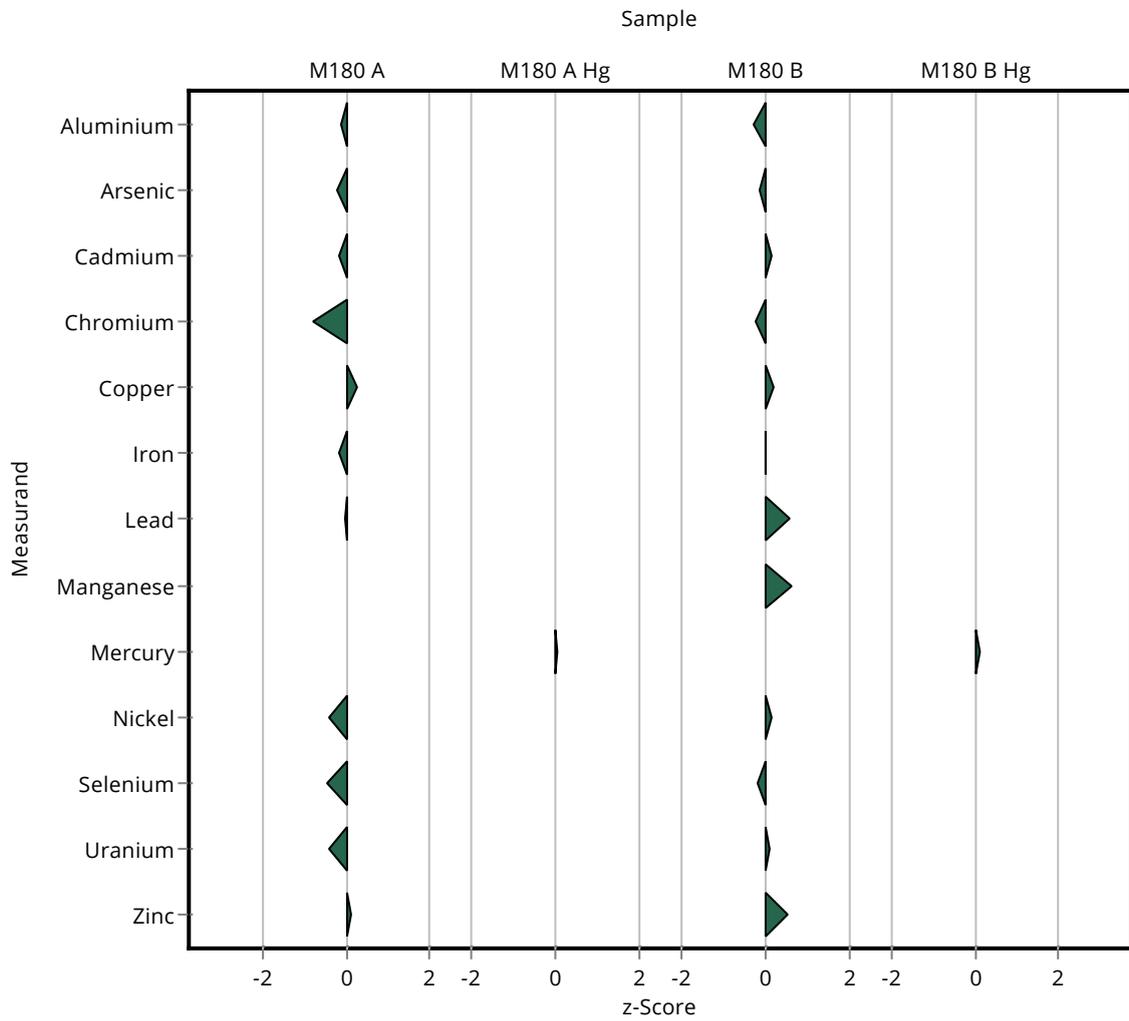
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	30 ± 0.28	3.03	98.9	-0.29
Arsenic	µg/l	5.19 ± 0.158	5.04 ± 0.044	0.675	97.1	-0.84
Cadmium	µg/l	0.644 ± 0.0142	0.633 ± 0.0209	0.0644	98.3	-0.25
Chromium	µg/l	2.27 ± 0.0977	2.1 ± 0.012	0.213	92.5	-1.70
Copper	µg/l	12.5 ± 0.346	12.8 ± 0.058	1.13	102	0.78
Iron	µg/l	66.6 ± 1.43	65.3 ± 0.212	7.33	98	-0.87
Lead	µg/l	2.16 ± 0.072	2.15 ± 0.021	0.216	99.6	-0.09
Manganese	µg/l	5.53 ± 0.158	<10 ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	3.72 ± 0.035	0.47	95.1	-1.46
Selenium	µg/l	4.41 ± 0.169	4.16 ± 0.035	0.529	94.4	-1.34
Uranium	µg/l	1.2 ± 0.0488	1.16 ± 0.017	0.104	96.4	-0.74
Zinc	µg/l	1150 ± 18.1	1160 ± 20	103	101	0.23

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.8 ± 0.015	0.25	101	0.25

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	602 ± 5.69	61.8	97.4	-0.72
Arsenic	µg/l	87.5 ± 1.5	86.1 ± 0.76	11.4	98.4	-0.64
Cadmium	µg/l	6.24 ± 0.127	6.34 ± 0.068	0.624	102	0.51
Chromium	µg/l	28.2 ± 0.401	27.6 ± 0.1	2.39	98	-1.25
Copper	µg/l	83.1 ± 1.3	84.7 ± 0.85	7.48	102	0.76
Iron	µg/l	478 ± 9.93	479 ± 4.95	52.6	100	0.09
Lead	µg/l	49.3 ± 0.959	52.1 ± 0.64	4.93	106	1.78

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	787 ± 3.536	54.2	105	2.21
Nickel	µg/l	61 ± 1.26	62 ± 0.723	7.32	102	0.54
Selenium	µg/l	19.4 ± 0.524	19 ± 0.058	2.33	98	-0.73
Uranium	µg/l	2.13 ± 0.0419	2.14 ± 0.014	0.14	101	0.24
Zinc	µg/l	767 ± 23.6	804 ± 7.211	69.1	105	1.33

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.18 ± 0.036	0.438	102	0.49
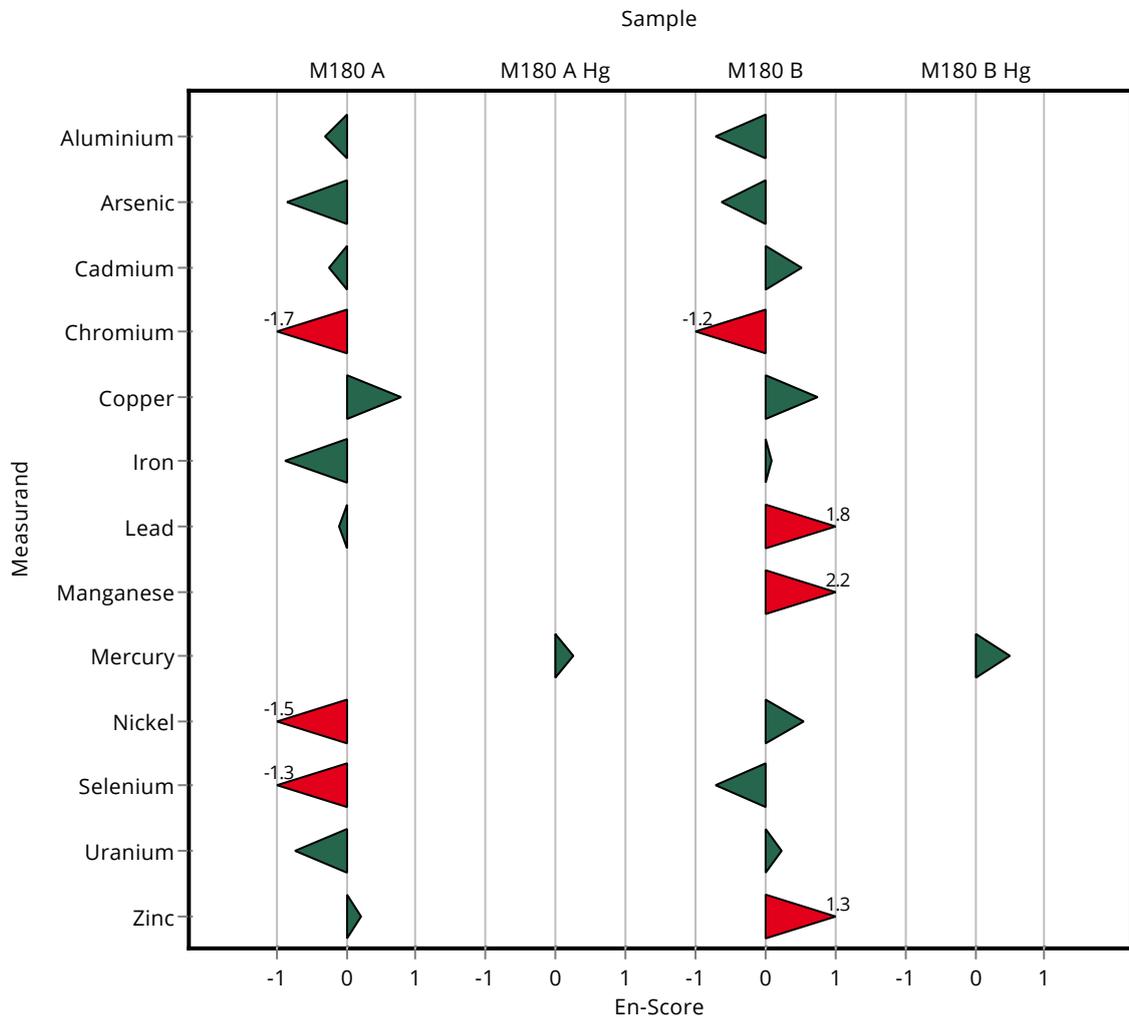
Sample

M180 A   M180 A Hg   M180 B   M180 B Hg

Measurand

Element	M180 A	M180 B
Chromium	-1.7	-1.2
Lead		1.8
Manganese		2.2
Nickel	-1.5	
Selenium	-1.3	
Zinc		1.3

En-Score

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	34.2 ± 5.13	3.03	113	1.27
Arsenic	µg/l	5.19 ± 0.158	5.39 ± 0.81	0.675	104	0.29
Cadmium	µg/l	0.644 ± 0.0142	0.591 ± 0.09	0.0644	91.8	-0.82
Chromium	µg/l	2.27 ± 0.0977	2.38 ± 0.36	0.213	105	0.51
Copper	µg/l	12.5 ± 0.346	12.7 ± 1.9	1.13	101	0.16
Iron	µg/l	66.6 ± 1.43	72.2 ± 10.8	7.33	108	0.76
Lead	µg/l	2.16 ± 0.072	2.3 ± 0.35	0.216	107	0.66
Manganese	µg/l	5.53 ± 0.158	5.66 ± 0.85	0.398	102	0.33
Nickel	µg/l	3.91 ± 0.113	3.94 ± 0.59	0.47	101	0.06
Selenium	µg/l	4.41 ± 0.169	4.44 ± 0.67	0.529	101	0.06
Uranium	µg/l	1.2 ± 0.0488	1.34 ± 0.2	0.104	111	1.32
Zinc	µg/l	1150 ± 18.1	949 ± 142	103	82.5	-1.94

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.69 ± 0.25	0.25	94.6	-0.39

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	689 ± 103	61.8	111	1.15
Arsenic	µg/l	87.5 ± 1.5	88.7 ± 13.3	11.4	101	0.11
Cadmium	µg/l	6.24 ± 0.127	5.63 ± 0.84	0.624	90.2	-0.98
Chromium	µg/l	28.2 ± 0.401	29.1 ± 4.36	2.39	103	0.39
Copper	µg/l	83.1 ± 1.3	80.2 ± 12	7.48	96.6	-0.38
Iron	µg/l	478 ± 9.93	517 ± 77.5	52.6	108	0.75
Lead	µg/l	49.3 ± 0.959	49.6 ± 7.44	4.93	101	0.07

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	790 ± 118	54.2	105	0.68
Nickel	µg/l	61 ± 1.26	59.7 ± 8.95	7.32	97.9	-0.17
Selenium	µg/l	19.4 ± 0.524	19.4 ± 2.92	2.33	100	0.00
Uranium	µg/l	2.13 ± 0.0419	2.25 ± 0.34	0.14	106	0.87
Zinc	µg/l	767 ± 23.6	670 ± 101	69.1	87.3	-1.41

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.11 ± 0.47	0.438	99.5	-0.03
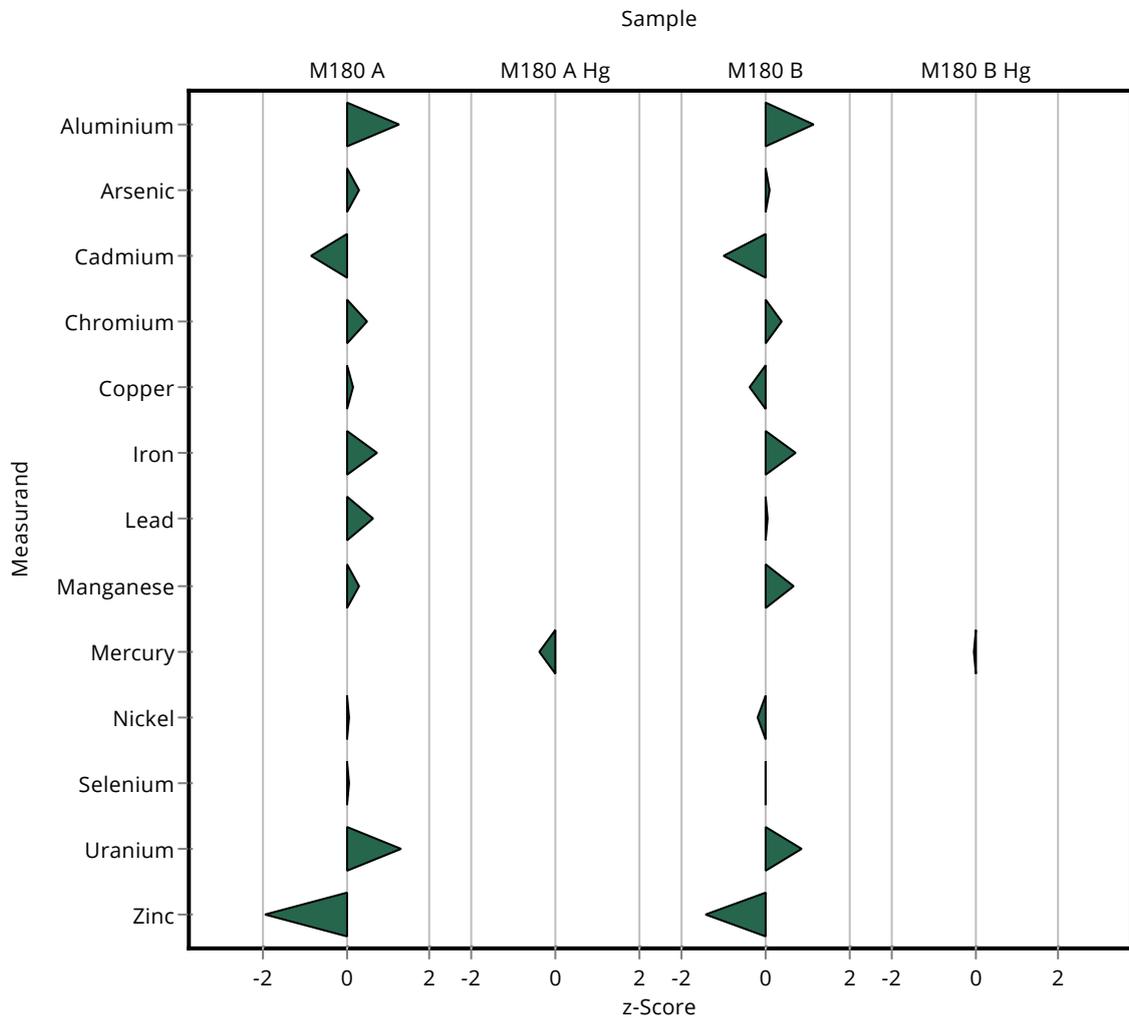
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	34.2 ± 5.13	3.03	113	0.38
Arsenic	µg/l	5.19 ± 0.158	5.39 ± 0.81	0.675	104	0.12
Cadmium	µg/l	0.644 ± 0.0142	0.591 ± 0.09	0.0644	91.8	-0.29
Chromium	µg/l	2.27 ± 0.0977	2.38 ± 0.36	0.213	105	0.15
Copper	µg/l	12.5 ± 0.346	12.7 ± 1.9	1.13	101	0.05
Iron	µg/l	66.6 ± 1.43	72.2 ± 10.8	7.33	108	0.26
Lead	µg/l	2.16 ± 0.072	2.3 ± 0.35	0.216	107	0.20
Manganese	µg/l	5.53 ± 0.158	5.66 ± 0.85	0.398	102	0.08
Nickel	µg/l	3.91 ± 0.113	3.94 ± 0.59	0.47	101	0.02
Selenium	µg/l	4.41 ± 0.169	4.44 ± 0.67	0.529	101	0.03
Uranium	µg/l	1.2 ± 0.0488	1.34 ± 0.2	0.104	111	0.34
Zinc	µg/l	1150 ± 18.1	949 ± 142	103	82.5	-0.71

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.69 ± 0.25	0.25	94.6	-0.19

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	689 ± 103	61.8	111	0.34
Arsenic	µg/l	87.5 ± 1.5	88.7 ± 13.3	11.4	101	0.05
Cadmium	µg/l	6.24 ± 0.127	5.63 ± 0.84	0.624	90.2	-0.36
Chromium	µg/l	28.2 ± 0.401	29.1 ± 4.36	2.39	103	0.11
Copper	µg/l	83.1 ± 1.3	80.2 ± 12	7.48	96.6	-0.12
Iron	µg/l	478 ± 9.93	517 ± 77.5	52.6	108	0.25
Lead	µg/l	49.3 ± 0.959	49.6 ± 7.44	4.93	101	0.02

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	790 ± 118	54.2	105	0.16
Nickel	µg/l	61 ± 1.26	59.7 ± 8.95	7.32	97.9	-0.07
Selenium	µg/l	19.4 ± 0.524	19.4 ± 2.92	2.33	100	0.00
Uranium	µg/l	2.13 ± 0.0419	2.25 ± 0.34	0.14	106	0.18
Zinc	µg/l	767 ± 23.6	670 ± 101	69.1	87.3	-0.48

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.11 ± 0.47	0.438	99.5	-0.02
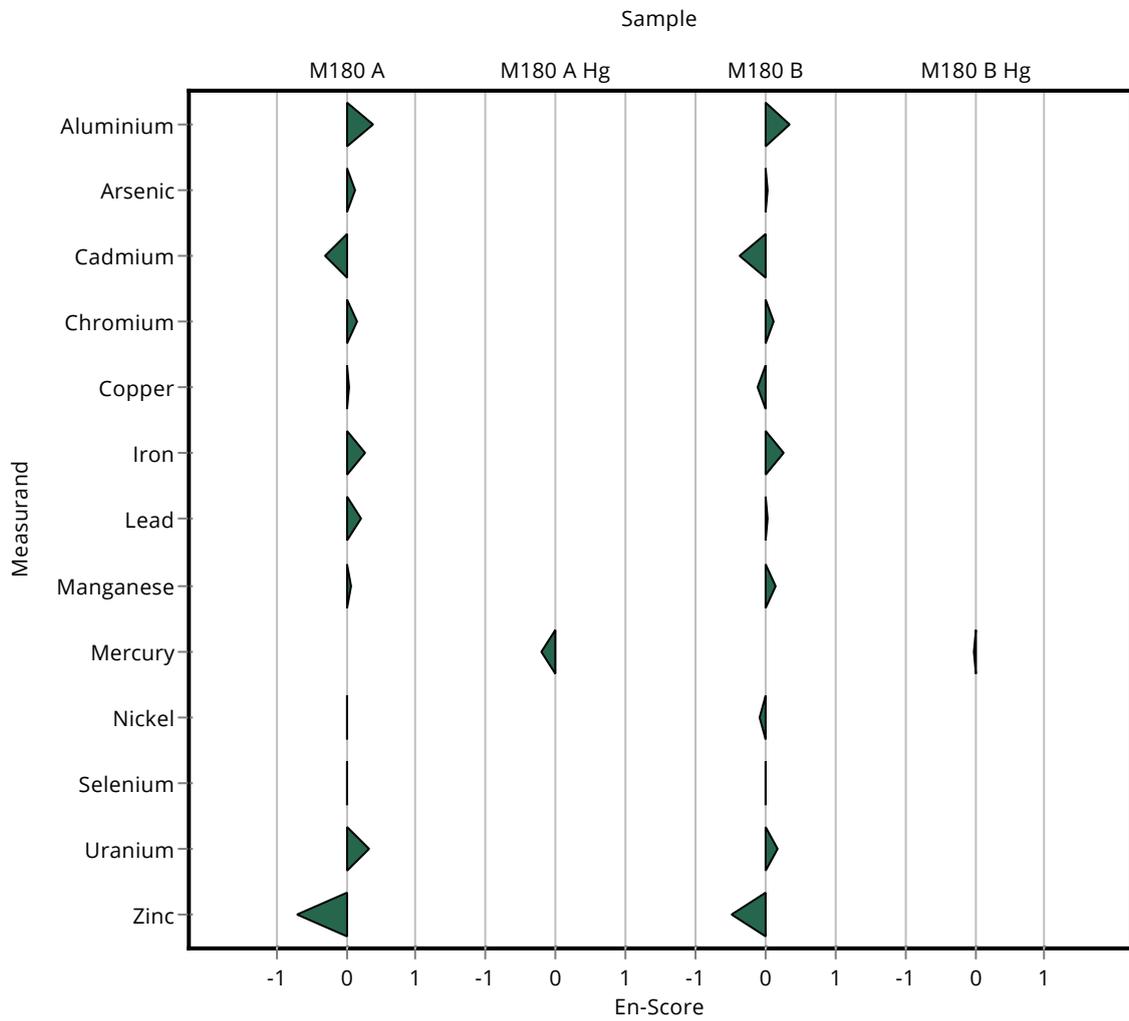
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	29.2 ± 2	3.03	96.3	-0.37
Arsenic	µg/l	5.19 ± 0.158	4.96 ± 0.35	0.675	95.5	-0.35
Cadmium	µg/l	0.644 ± 0.0142	0.638 ± 0.045	0.0644	99.1	-0.09
Chromium	µg/l	2.27 ± 0.0977	2.12 ± 0.15	0.213	93.4	-0.71
Copper	µg/l	12.5 ± 0.346	12 ± 0.8	1.13	95.9	-0.46
Iron	µg/l	66.6 ± 1.43	64.5 ± 4.5	7.33	96.8	-0.29
Lead	µg/l	2.16 ± 0.072	2.14 ± 0.15	0.216	99.2	-0.08
Manganese	µg/l	5.53 ± 0.158	5.29 ± 0.37	0.398	95.7	-0.60
Nickel	µg/l	3.91 ± 0.113	3.7 ± 0.26	0.47	94.5	-0.45
Selenium	µg/l	4.41 ± 0.169	2.84 ± 0.85	0.529	64.5	-2.96
Uranium	µg/l	1.2 ± 0.0488	1.22 ± 0.09	0.104	101	0.16
Zinc	µg/l	1150 ± 18.1	1127 ± 79	103	98	-0.22

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.83 ± 0.55	0.25	102	0.17

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	581 ± 41	61.8	94	-0.60
Arsenic	µg/l	87.5 ± 1.5	86.6 ± 6.1	11.4	99	-0.08
Cadmium	µg/l	6.24 ± 0.127	6.15 ± 0.43	0.624	98.5	-0.15
Chromium	µg/l	28.2 ± 0.401	27.8 ± 1.9	2.39	98.7	-0.15
Copper	µg/l	83.1 ± 1.3	78 ± 5.5	7.48	93.9	-0.68
Iron	µg/l	478 ± 9.93	375 ± 26	52.6	78.5	-1.96
Lead	µg/l	49.3 ± 0.959	47.9 ± 3.4	4.93	97.3	-0.27

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	703 ± 49	54.2	93.4	-0.92
Nickel	µg/l	61 ± 1.26	58.5 ± 4.1	7.32	96	-0.34
Selenium	µg/l	19.4 ± 0.524	12 ± 3.6	2.33	61.9	-3.18
Uranium	µg/l	2.13 ± 0.0419	2.18 ± 0.15	0.14	102	0.37
Zinc	µg/l	767 ± 23.6	757 ± 53	69.1	98.6	-0.15

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.24 ± 0.97	0.438	104	0.26
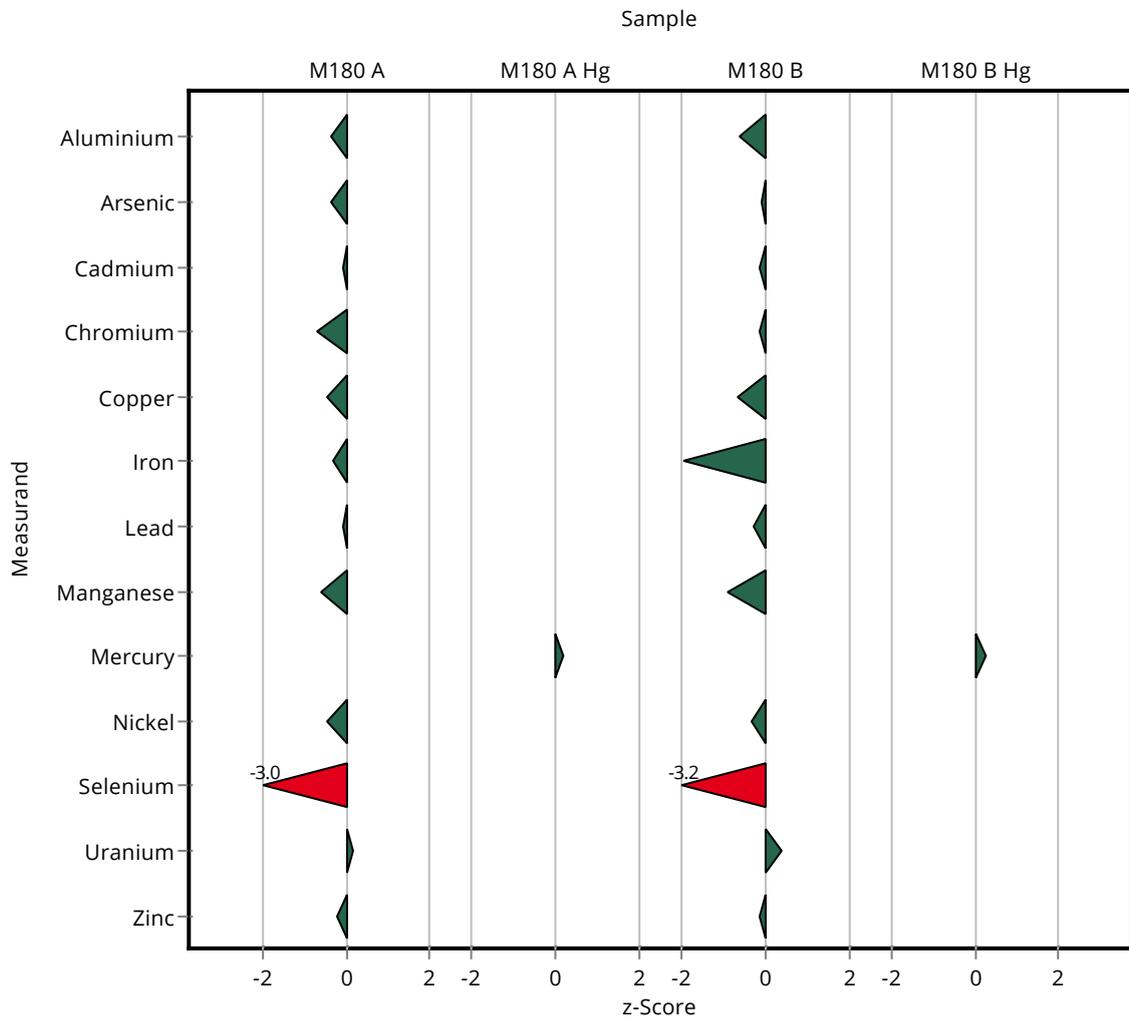
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	29.2 ± 2	3.03	96.3	-0.27
Arsenic	µg/l	5.19 ± 0.158	4.96 ± 0.35	0.675	95.5	-0.32
Cadmium	µg/l	0.644 ± 0.0142	0.638 ± 0.045	0.0644	99.1	-0.07
Chromium	µg/l	2.27 ± 0.0977	2.12 ± 0.15	0.213	93.4	-0.48
Copper	µg/l	12.5 ± 0.346	12 ± 0.8	1.13	95.9	-0.32
Iron	µg/l	66.6 ± 1.43	64.5 ± 4.5	7.33	96.8	-0.23
Lead	µg/l	2.16 ± 0.072	2.14 ± 0.15	0.216	99.2	-0.06
Manganese	µg/l	5.53 ± 0.158	5.29 ± 0.37	0.398	95.7	-0.32
Nickel	µg/l	3.91 ± 0.113	3.7 ± 0.26	0.47	94.5	-0.40
Selenium	µg/l	4.41 ± 0.169	2.84 ± 0.85	0.529	64.5	-0.92
Uranium	µg/l	1.2 ± 0.0488	1.22 ± 0.09	0.104	101	0.09
Zinc	µg/l	1150 ± 18.1	1127 ± 79	103	98	-0.14

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.83 ± 0.55	0.25	102	0.04

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	581 ± 41	61.8	94	-0.44
Arsenic	µg/l	87.5 ± 1.5	86.6 ± 6.1	11.4	99	-0.07
Cadmium	µg/l	6.24 ± 0.127	6.15 ± 0.43	0.624	98.5	-0.11
Chromium	µg/l	28.2 ± 0.401	27.8 ± 1.9	2.39	98.7	-0.09
Copper	µg/l	83.1 ± 1.3	78 ± 5.5	7.48	93.9	-0.46
Iron	µg/l	478 ± 9.93	375 ± 26	52.6	78.5	-1.94
Lead	µg/l	49.3 ± 0.959	47.9 ± 3.4	4.93	97.3	-0.20

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	703 ± 49	54.2	93.4	-0.50
Nickel	µg/l	61 ± 1.26	58.5 ± 4.1	7.32	96	-0.30
Selenium	µg/l	19.4 ± 0.524	12 ± 3.6	2.33	61.9	-1.02
Uranium	µg/l	2.13 ± 0.0419	2.18 ± 0.15	0.14	102	0.17
Zinc	µg/l	767 ± 23.6	757 ± 53	69.1	98.6	-0.10

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.24 ± 0.97	0.438	104	0.06
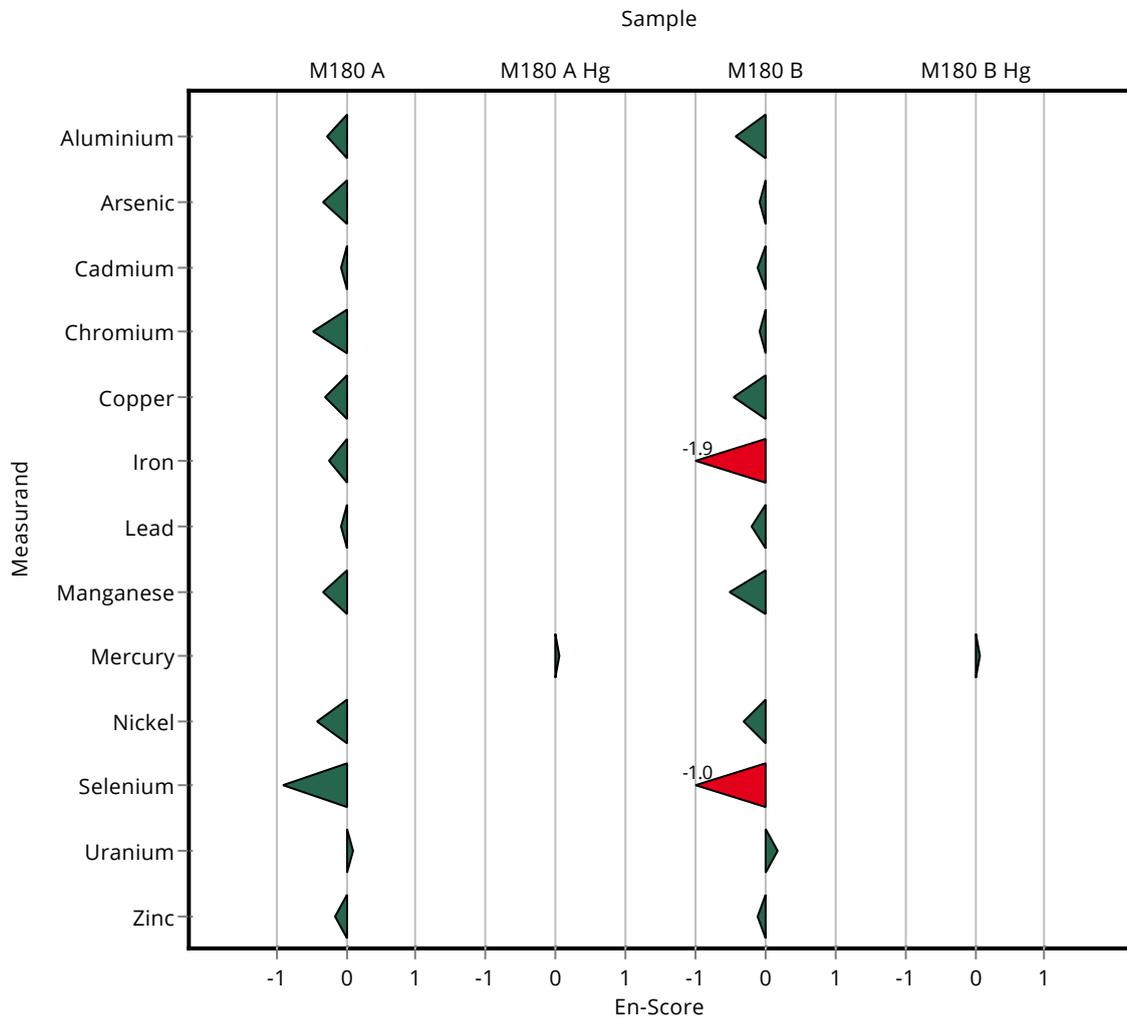
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	30 ± 6	3.03	98.9	-0.11
Arsenic	µg/l	5.19 ± 0.158	4.85 ± 0.97	0.675	93.4	-0.51
Cadmium	µg/l	0.644 ± 0.0142	0.6 ± 0.12	0.0644	93.2	-0.68
Chromium	µg/l	2.27 ± 0.0977	2.3 ± 0.46	0.213	101	0.14
Copper	µg/l	12.5 ± 0.346	13 ± 2.6	1.13	104	0.43
Iron	µg/l	66.6 ± 1.43	64.5 ± 13	7.33	96.8	-0.29
Lead	µg/l	2.16 ± 0.072	2.25 ± 0.45	0.216	104	0.43
Manganese	µg/l	5.53 ± 0.158	5.6 ± 1.1	0.398	101	0.18
Nickel	µg/l	3.91 ± 0.113	4 ± 0.8	0.47	102	0.18
Selenium	µg/l	4.41 ± 0.169	4.65 ± 0.93	0.529	106	0.46
Uranium	µg/l	1.2 ± 0.0488	1.2 ± 0.24	0.104	99.7	-0.04
Zinc	µg/l	1150 ± 18.1	1150 ± 230	103	100	0.00

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.7 ± 0.34	0.25	95.1	-0.35

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	625 ± 125	61.8	101	0.11
Arsenic	µg/l	87.5 ± 1.5	84.5 ± 17	11.4	96.6	-0.26
Cadmium	µg/l	6.24 ± 0.127	5.85 ± 1.2	0.624	93.7	-0.63
Chromium	µg/l	28.2 ± 0.401	28.5 ± 5.7	2.39	101	0.14
Copper	µg/l	83.1 ± 1.3	86.5 ± 17	7.48	104	0.46
Iron	µg/l	478 ± 9.93	455 ± 91	52.6	95.2	-0.43
Lead	µg/l	49.3 ± 0.959	51.5 ± 10	4.93	105	0.46

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	755 ± 151	54.2	100	0.04
Nickel	µg/l	61 ± 1.26	62.5 ± 12.5	7.32	103	0.21
Selenium	µg/l	19.4 ± 0.524	19.5 ± 3.9	2.33	101	0.05
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.44	0.14	103	0.51
Zinc	µg/l	767 ± 23.6	795 ± 159	69.1	104	0.40

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	2.95 ± 0.59	0.438	94.4	-0.40
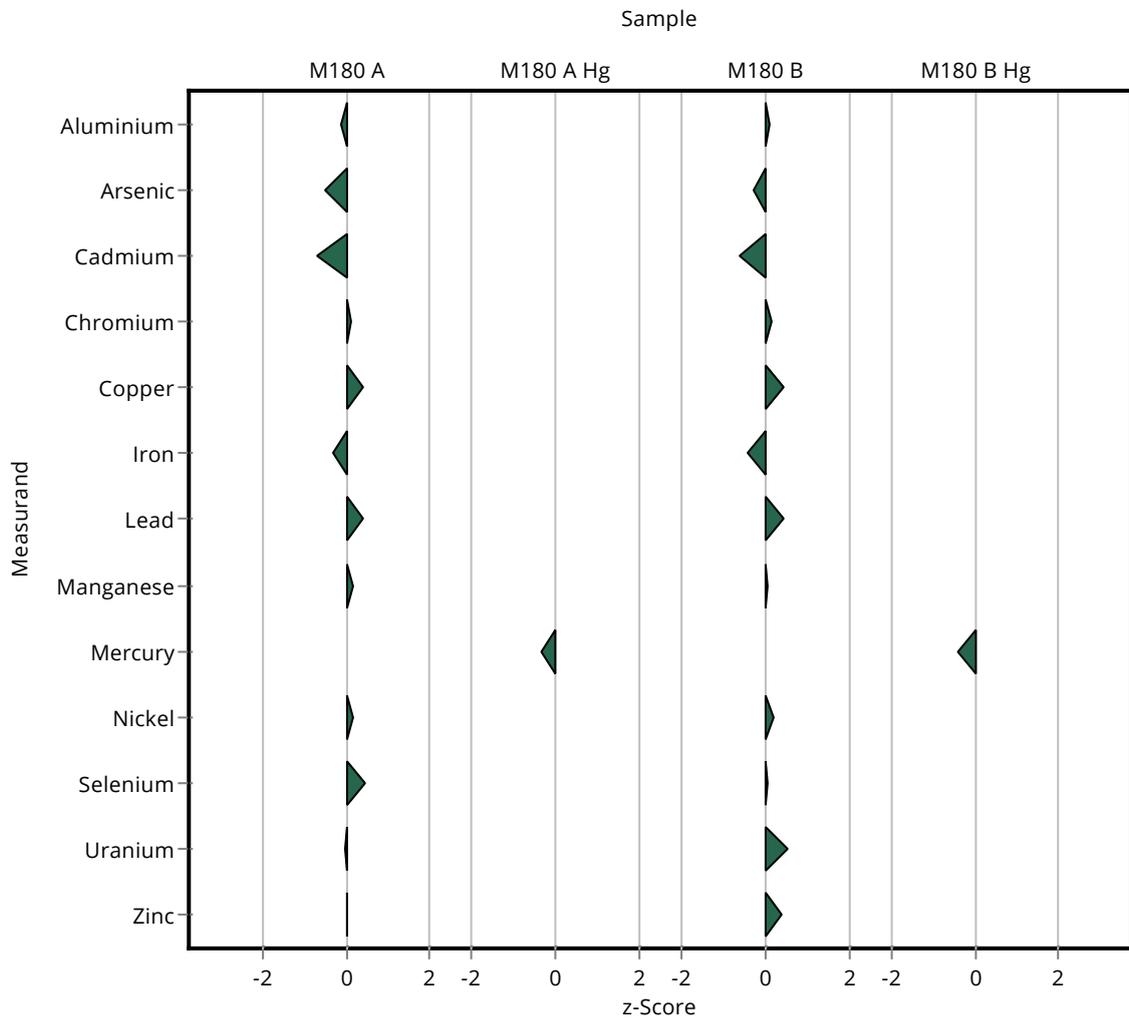
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	30 ± 6	3.03	98.9	-0.03
Arsenic	µg/l	5.19 ± 0.158	4.85 ± 0.97	0.675	93.4	-0.18
Cadmium	µg/l	0.644 ± 0.0142	0.6 ± 0.12	0.0644	93.2	-0.18
Chromium	µg/l	2.27 ± 0.0977	2.3 ± 0.46	0.213	101	0.03
Copper	µg/l	12.5 ± 0.346	13 ± 2.6	1.13	104	0.09
Iron	µg/l	66.6 ± 1.43	64.5 ± 13	7.33	96.8	-0.08
Lead	µg/l	2.16 ± 0.072	2.25 ± 0.45	0.216	104	0.10
Manganese	µg/l	5.53 ± 0.158	5.6 ± 1.1	0.398	101	0.03
Nickel	µg/l	3.91 ± 0.113	4 ± 0.8	0.47	102	0.05
Selenium	µg/l	4.41 ± 0.169	4.65 ± 0.93	0.529	106	0.13
Uranium	µg/l	1.2 ± 0.0488	1.2 ± 0.24	0.104	99.7	-0.01
Zinc	µg/l	1150 ± 18.1	1150 ± 230	103	100	0.00

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.7 ± 0.34	0.25	95.1	-0.13

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	625 ± 125	61.8	101	0.03
Arsenic	µg/l	87.5 ± 1.5	84.5 ± 17	11.4	96.6	-0.09
Cadmium	µg/l	6.24 ± 0.127	5.85 ± 1.2	0.624	93.7	-0.16
Chromium	µg/l	28.2 ± 0.401	28.5 ± 5.7	2.39	101	0.03
Copper	µg/l	83.1 ± 1.3	86.5 ± 17	7.48	104	0.10
Iron	µg/l	478 ± 9.93	455 ± 91	52.6	95.2	-0.13
Lead	µg/l	49.3 ± 0.959	51.5 ± 10	4.93	105	0.11

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	755 ± 151	54.2	100	0.01
Nickel	µg/l	61 ± 1.26	62.5 ± 12.5	7.32	103	0.06
Selenium	µg/l	19.4 ± 0.524	19.5 ± 3.9	2.33	101	0.01
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.44	0.14	103	0.08
Zinc	µg/l	767 ± 23.6	795 ± 159	69.1	104	0.09

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	2.95 ± 0.59	0.438	94.4	-0.15
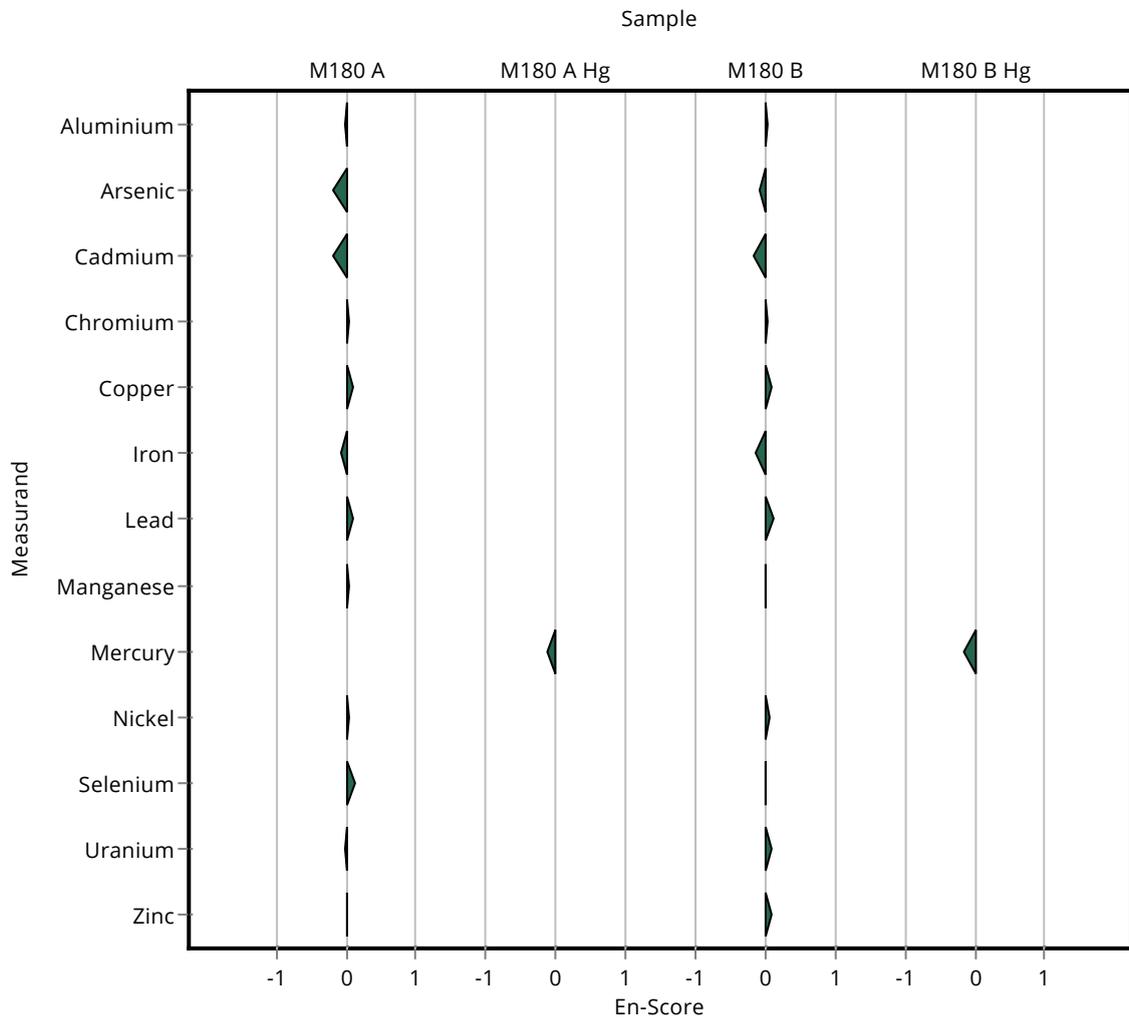
Sample

M180 A   M180 A Hg   M180 B   M180 B Hg

En-Score

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	30.1 ± 4.22	3.03	99.2	-0.08
Arsenic	µg/l	5.19 ± 0.158	5.27 ± 0.527	0.675	101	0.11
Cadmium	µg/l	0.644 ± 0.0142	0.645 ± 0.0645	0.0644	100	0.02
Chromium	µg/l	2.27 ± 0.0977	2.12 ± 0.254	0.213	93.4	-0.71
Copper	µg/l	12.5 ± 0.346	65.3 ± 7.83	1.13	522	46.86
Iron	µg/l	66.6 ± 1.43	12.8 ± 1.4	7.33	19.2	-7.34
Lead	µg/l	2.16 ± 0.072	2.38 ± 0.238	0.216	110	1.03
Manganese	µg/l	5.53 ± 0.158	5.31 ± 0.531	0.398	96	-0.55
Nickel	µg/l	3.91 ± 0.113	4.1 ± 0.452	0.47	105	0.40
Selenium	µg/l	4.41 ± 0.169	4.43 ± 0.532	0.529	101	0.05
Uranium	µg/l	1.2 ± 0.0488	1.21 ± 0.121	0.104	101	0.06
Zinc	µg/l	1150 ± 18.1	1170 ± 152	103	102	0.19

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.7 ± 0.34	0.25	95.1	-0.35

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	618 ± 86.5	61.8	100	0.00
Arsenic	µg/l	87.5 ± 1.5	89.2 ± 8.92	11.4	102	0.15
Cadmium	µg/l	6.24 ± 0.127	6.19 ± 0.619	0.624	99.1	-0.09
Chromium	µg/l	28.2 ± 0.401	26.7 ± 3.21	2.39	94.8	-0.61
Copper	µg/l	83.1 ± 1.3	471 ± 56.6	7.48	567	51.89
Iron	µg/l	478 ± 9.93	84.7 ± 9.32	52.6	17.7	-7.48
Lead	µg/l	49.3 ± 0.959	49.3 ± 4.93	4.93	100	0.01

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	739 ± 73.9	54.2	98.2	-0.26
Nickel	µg/l	61 ± 1.26	61.8 ± 6.79	7.32	101	0.11
Selenium	µg/l	19.4 ± 0.524	19.8 ± 2.38	2.33	102	0.18
Uranium	µg/l	2.13 ± 0.0419	2.13 ± 0.213	0.14	100	0.01
Zinc	µg/l	767 ± 23.6	768 ± 99.8	69.1	100	0.01

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.06 ± 0.613	0.438	97.9	-0.15
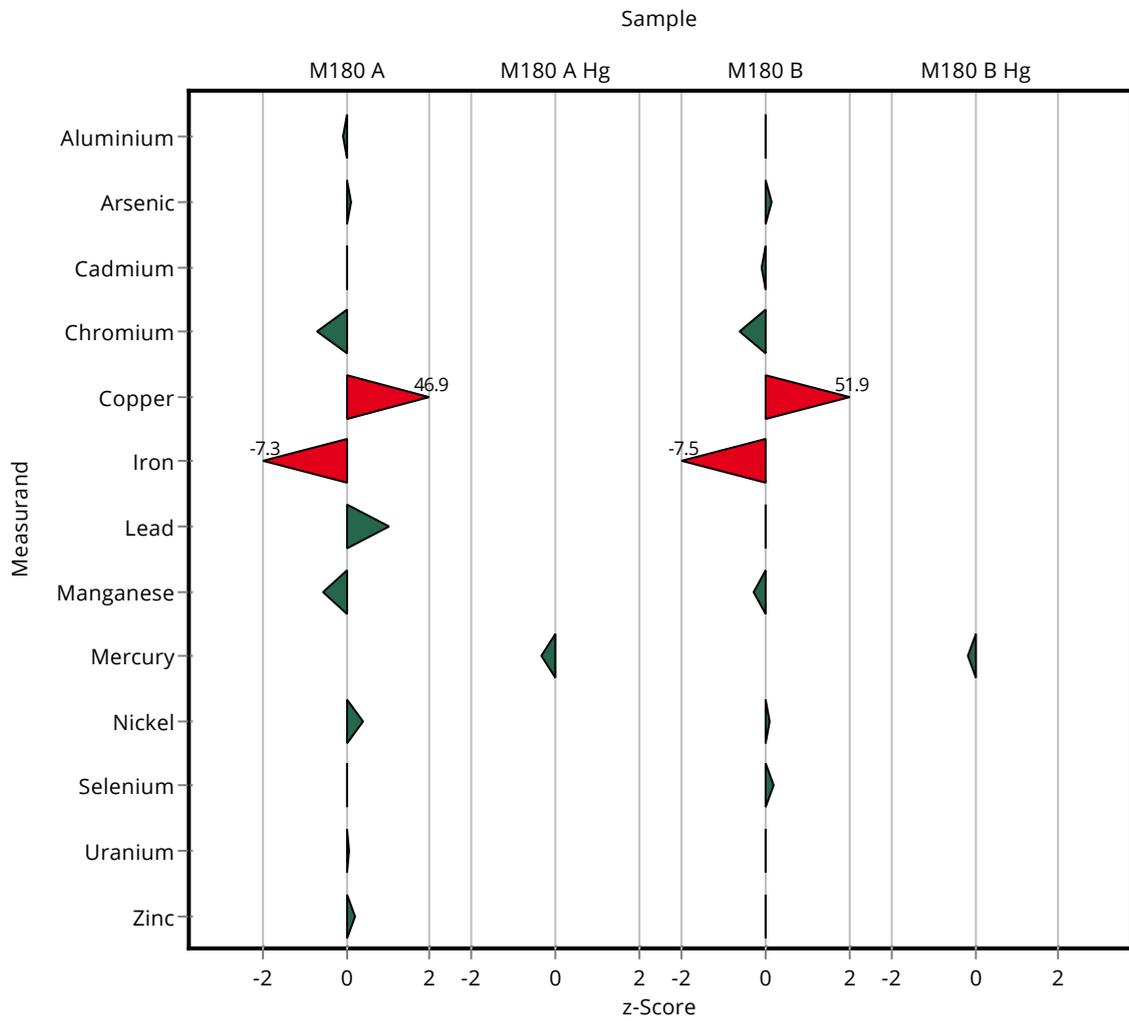
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	30.1 ± 4.22	3.03	99.2	-0.03
Arsenic	µg/l	5.19 ± 0.158	5.27 ± 0.527	0.675	101	0.07
Cadmium	µg/l	0.644 ± 0.0142	0.645 ± 0.0645	0.0644	100	0.01
Chromium	µg/l	2.27 ± 0.0977	2.12 ± 0.254	0.213	93.4	-0.29
Copper	µg/l	12.5 ± 0.346	65.3 ± 7.83	1.13	522	3.37
Iron	µg/l	66.6 ± 1.43	12.8 ± 1.4	7.33	19.2	-17.11
Lead	µg/l	2.16 ± 0.072	2.38 ± 0.238	0.216	110	0.46
Manganese	µg/l	5.53 ± 0.158	5.31 ± 0.531	0.398	96	-0.20
Nickel	µg/l	3.91 ± 0.113	4.1 ± 0.452	0.47	105	0.20
Selenium	µg/l	4.41 ± 0.169	4.43 ± 0.532	0.529	101	0.02
Uranium	µg/l	1.2 ± 0.0488	1.21 ± 0.121	0.104	101	0.03
Zinc	µg/l	1150 ± 18.1	1170 ± 152	103	102	0.07

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.7 ± 0.34	0.25	95.1	-0.13

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	618 ± 86.5	61.8	100	0.00
Arsenic	µg/l	87.5 ± 1.5	89.2 ± 8.92	11.4	102	0.10
Cadmium	µg/l	6.24 ± 0.127	6.19 ± 0.619	0.624	99.1	-0.04
Chromium	µg/l	28.2 ± 0.401	26.7 ± 3.21	2.39	94.8	-0.23
Copper	µg/l	83.1 ± 1.3	471 ± 56.6	7.48	567	3.43
Iron	µg/l	478 ± 9.93	84.7 ± 9.32	52.6	17.7	-18.61
Lead	µg/l	49.3 ± 0.959	49.3 ± 4.93	4.93	100	0.00

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	739 ± 73.9	54.2	98.2	-0.09
Nickel	µg/l	61 ± 1.26	61.8 ± 6.79	7.32	101	0.06
Selenium	µg/l	19.4 ± 0.524	19.8 ± 2.38	2.33	102	0.09
Uranium	µg/l	2.13 ± 0.0419	2.13 ± 0.213	0.14	100	0.00
Zinc	µg/l	767 ± 23.6	768 ± 99.8	69.1	100	0.00

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.06 ± 0.613	0.438	97.9	-0.05
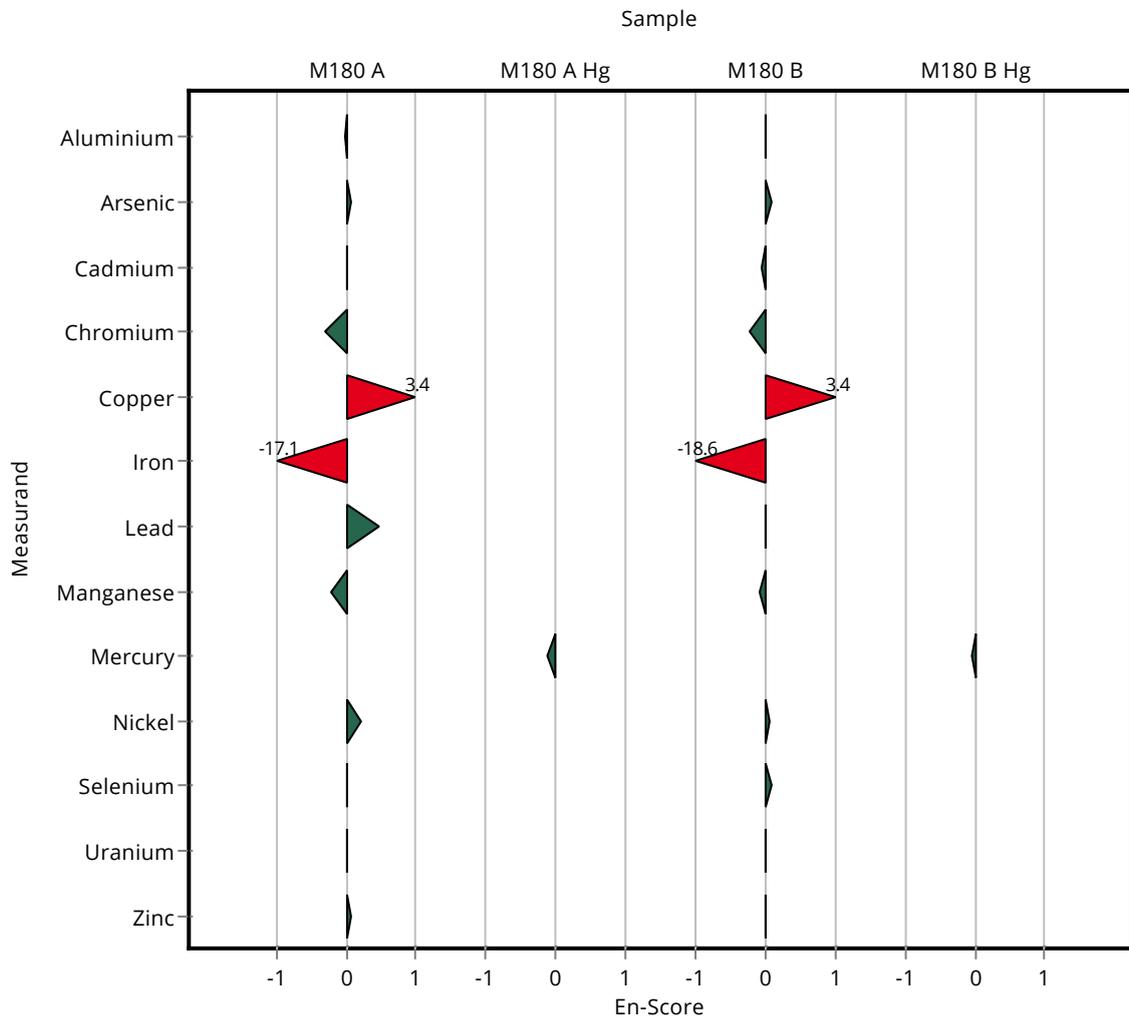
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	<100 ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	4.98 ± 0.448	0.675	95.9	-0.32
Cadmium	µg/l	0.644 ± 0.0142	0.612 ± 0.061	0.0644	95	-0.50
Chromium	µg/l	2.27 ± 0.0977	<5 (LOQ) ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	14.15 ± 2.12	1.13	113	1.45
Iron	µg/l	66.6 ± 1.43	59.42 ± 8.319	7.33	89.2	-0.98
Lead	µg/l	2.16 ± 0.072	2.22 ± 0.155	0.216	103	0.29
Manganese	µg/l	5.53 ± 0.158	<5 (LOQ) ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	<5 (LOQ) ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	5.63 ± 0.507	0.529	128	2.32
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1175.67 ± 141.1	103	102	0.25

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.733 ± 0.26	0.25	97	-0.21

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	592.8 ± 47.42	61.8	95.9	-0.41
Arsenic	µg/l	87.5 ± 1.5	84 ± 7.56	11.4	96	-0.30
Cadmium	µg/l	6.24 ± 0.127	7.86 ± 0.786	0.624	126	2.59
Chromium	µg/l	28.2 ± 0.401	27 ± 4.32	2.39	95.9	-0.48
Copper	µg/l	83.1 ± 1.3	82.1 ± 12.32	7.48	98.8	-0.13
Iron	µg/l	478 ± 9.93	497.7 ± 69.68	52.6	104	0.38
Lead	µg/l	49.3 ± 0.959	49.88 ± 3.492	4.93	101	0.13

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	789 ± 118.4	54.2	105	0.67
Nickel	µg/l	61 ± 1.26	59.6 ± 8.94	7.32	97.8	-0.19
Selenium	µg/l	19.4 ± 0.524	21.6 ± 1.94	2.33	111	0.95
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	815 ± 81.5	69.1	106	0.69

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.031 ± 0.4547	0.438	97	-0.22
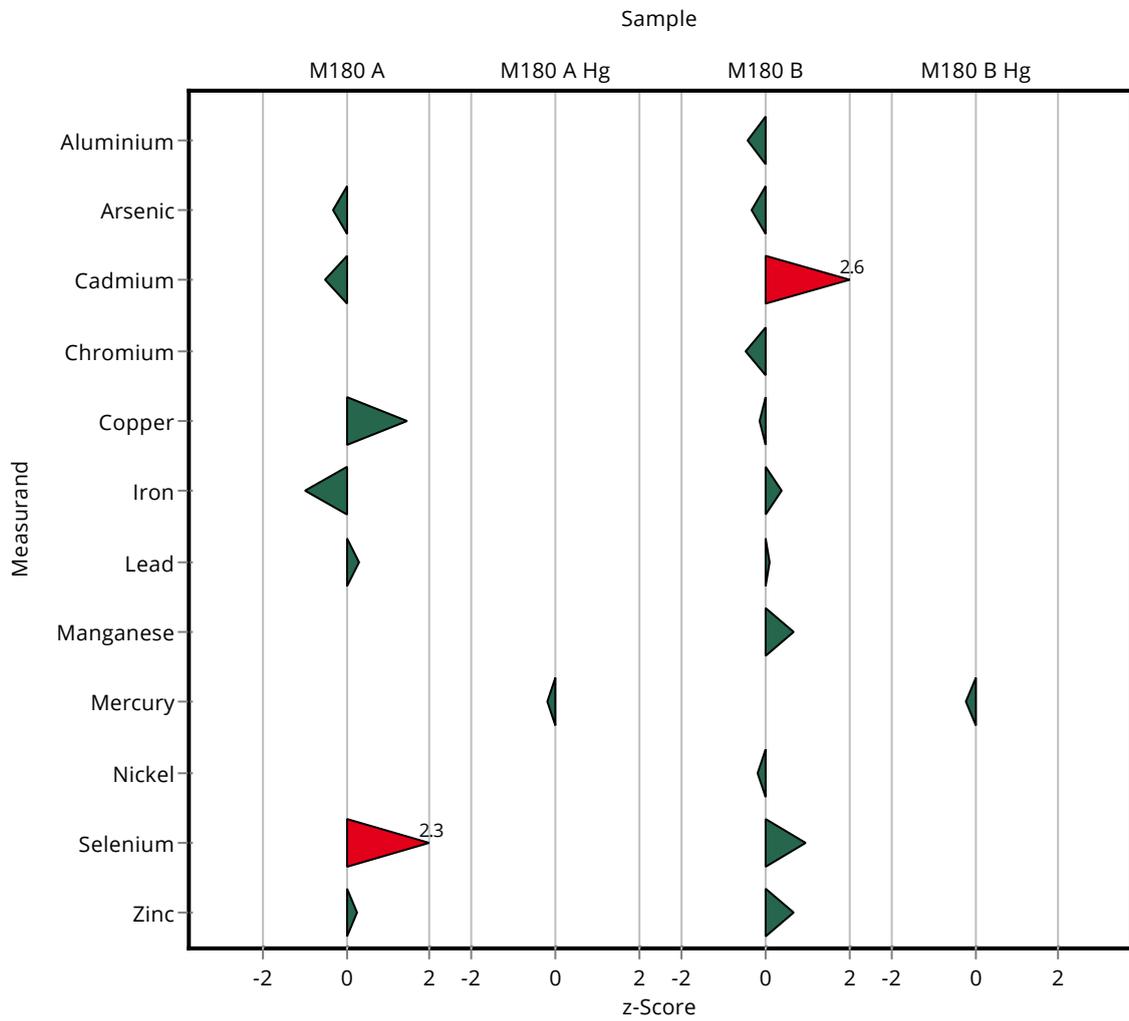
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	<100 ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	4.98 ± 0.448	0.675	95.9	-0.23
Cadmium	µg/l	0.644 ± 0.0142	0.612 ± 0.061	0.0644	95	-0.26
Chromium	µg/l	2.27 ± 0.0977	<5 (LOQ) ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	14.15 ± 2.12	1.13	113	0.38
Iron	µg/l	66.6 ± 1.43	59.42 ± 8.319	7.33	89.2	-0.43
Lead	µg/l	2.16 ± 0.072	2.22 ± 0.155	0.216	103	0.20
Manganese	µg/l	5.53 ± 0.158	<5 (LOQ) ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	<5 (LOQ) ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	5.63 ± 0.507	0.529	128	1.19
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1175.67 ± 141.1	103	102	0.09

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.733 ± 0.26	0.25	97	-0.10

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	592.8 ± 47.42	61.8	95.9	-0.26
Arsenic	µg/l	87.5 ± 1.5	84 ± 7.56	11.4	96	-0.23
Cadmium	µg/l	6.24 ± 0.127	7.86 ± 0.786	0.624	126	1.02
Chromium	µg/l	28.2 ± 0.401	27 ± 4.32	2.39	95.9	-0.13
Copper	µg/l	83.1 ± 1.3	82.1 ± 12.32	7.48	98.8	-0.04
Iron	µg/l	478 ± 9.93	497.7 ± 69.68	52.6	104	0.14
Lead	µg/l	49.3 ± 0.959	49.88 ± 3.492	4.93	101	0.09

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	789 ± 118.4	54.2	105	0.15
Nickel	µg/l	61 ± 1.26	59.6 ± 8.94	7.32	97.8	-0.08
Selenium	µg/l	19.4 ± 0.524	21.6 ± 1.94	2.33	111	0.56
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	815 ± 81.5	69.1	106	0.29

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.031 ± 0.4547	0.438	97	-0.10
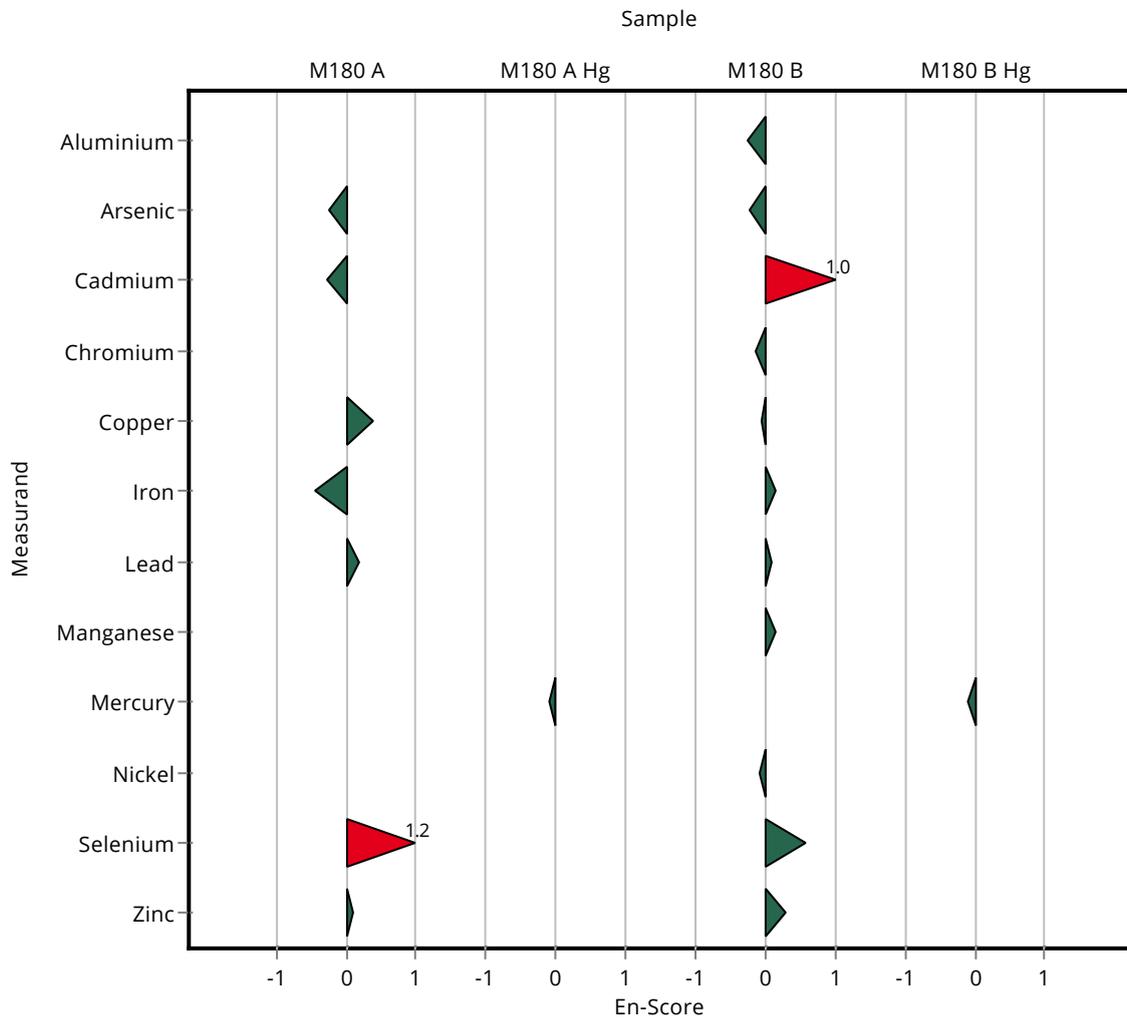
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	27.6 ± 2.8	3.03	91	-0.90
Arsenic	µg/l	5.19 ± 0.158	5.59 ± 0.56	0.675	108	0.59
Cadmium	µg/l	0.644 ± 0.0142	0.702 ± 0.07	0.0644	109	0.90
Chromium	µg/l	2.27 ± 0.0977	2.25 ± 0.23	0.213	99.1	-0.10
Copper	µg/l	12.5 ± 0.346	11 ± 1.1	1.13	87.9	-1.35
Iron	µg/l	66.6 ± 1.43	65.9 ± 6.6	7.33	98.9	-0.10
Lead	µg/l	2.16 ± 0.072	1.97 ± 0.2	0.216	91.3	-0.87
Manganese	µg/l	5.53 ± 0.158	5.12 ± 0.5	0.398	92.6	-1.03
Nickel	µg/l	3.91 ± 0.113	4.1 ± 0.41	0.47	105	0.40
Selenium	µg/l	4.41 ± 0.169	4.96 ± 0.5	0.529	113	1.05
Uranium	µg/l	1.2 ± 0.0488	1.28 ± 0.13	0.104	106	0.74
Zinc	µg/l	1150 ± 18.1	1210 ± 121	103	105	0.58

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.73 ± 0.17	0.25	96.8	-0.23

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	593 ± 59	61.8	96	-0.40
Arsenic	µg/l	87.5 ± 1.5	93.1 ± 9.3	11.4	106	0.50
Cadmium	µg/l	6.24 ± 0.127	6.82 ± 0.68	0.624	109	0.92
Chromium	µg/l	28.2 ± 0.401	27.6 ± 2.8	2.39	98	-0.23
Copper	µg/l	83.1 ± 1.3	84 ± 8.4	7.48	101	0.13
Iron	µg/l	478 ± 9.93	455 ± 45.5	52.6	95.2	-0.43
Lead	µg/l	49.3 ± 0.959	47.1 ± 4.7	4.93	95.6	-0.44

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	728 ± 72.8	54.2	96.7	-0.46
Nickel	µg/l	61 ± 1.26	61.5 ± 6.2	7.32	101	0.07
Selenium	µg/l	19.4 ± 0.524	22.7 ± 2.3	2.33	117	1.42
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.22	0.14	103	0.51
Zinc	µg/l	767 ± 23.6	849 ± 85	69.1	111	1.18

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	2.94 ± 0.29	0.438	94.1	-0.42
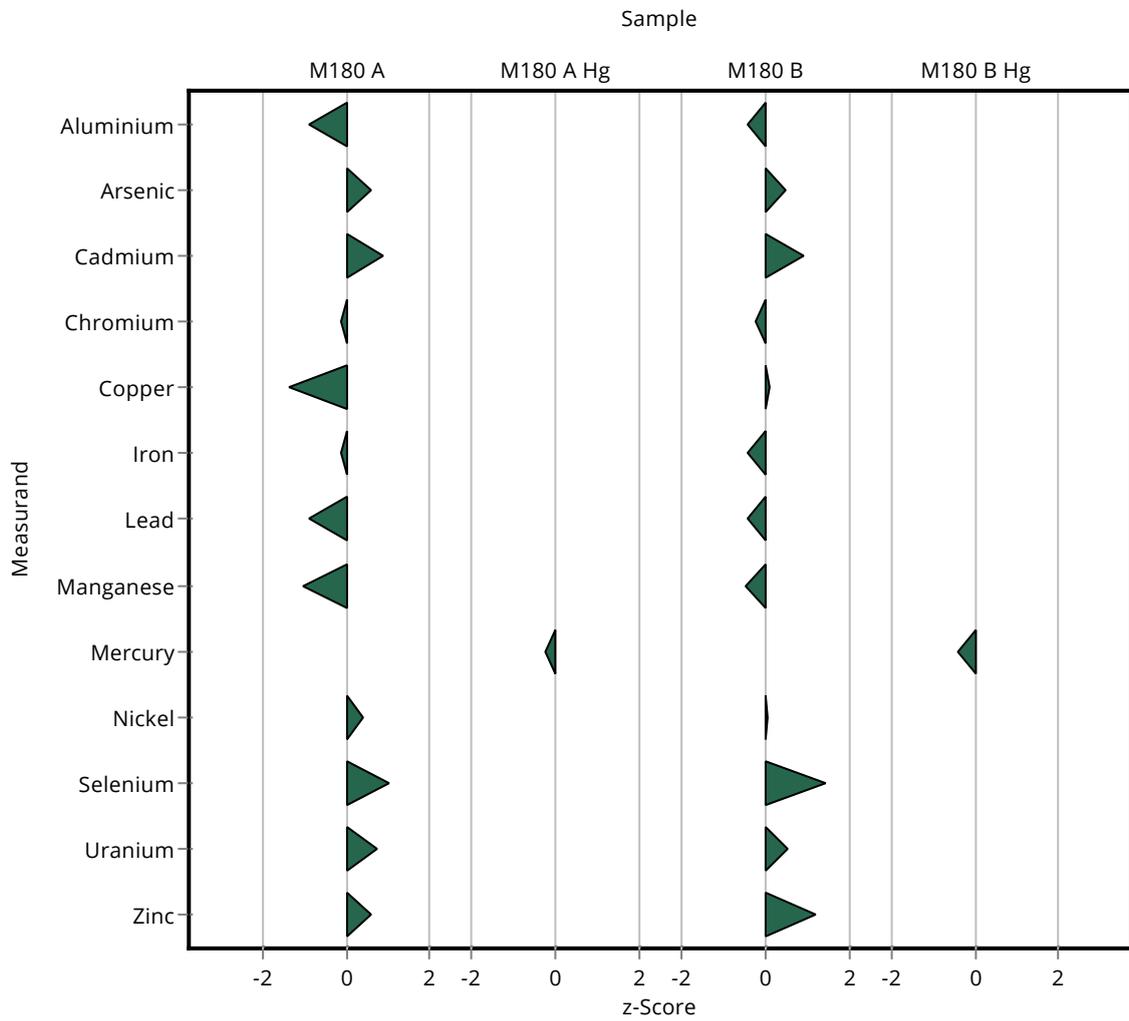
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	27.6 ± 2.8	3.03	91	-0.48
Arsenic	µg/l	5.19 ± 0.158	5.59 ± 0.56	0.675	108	0.35
Cadmium	µg/l	0.644 ± 0.0142	0.702 ± 0.07	0.0644	109	0.41
Chromium	µg/l	2.27 ± 0.0977	2.25 ± 0.23	0.213	99.1	-0.04
Copper	µg/l	12.5 ± 0.346	11 ± 1.1	1.13	87.9	-0.68
Iron	µg/l	66.6 ± 1.43	65.9 ± 6.6	7.33	98.9	-0.05
Lead	µg/l	2.16 ± 0.072	1.97 ± 0.2	0.216	91.3	-0.46
Manganese	µg/l	5.53 ± 0.158	5.12 ± 0.5	0.398	92.6	-0.40
Nickel	µg/l	3.91 ± 0.113	4.1 ± 0.41	0.47	105	0.23
Selenium	µg/l	4.41 ± 0.169	4.96 ± 0.5	0.529	113	0.55
Uranium	µg/l	1.2 ± 0.0488	1.28 ± 0.13	0.104	106	0.29
Zinc	µg/l	1150 ± 18.1	1210 ± 121	103	105	0.25

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.73 ± 0.17	0.25	96.8	-0.17

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	593 ± 59	61.8	96	-0.21
Arsenic	µg/l	87.5 ± 1.5	93.1 ± 9.3	11.4	106	0.30
Cadmium	µg/l	6.24 ± 0.127	6.82 ± 0.68	0.624	109	0.42
Chromium	µg/l	28.2 ± 0.401	27.6 ± 2.8	2.39	98	-0.10
Copper	µg/l	83.1 ± 1.3	84 ± 8.4	7.48	101	0.06
Iron	µg/l	478 ± 9.93	455 ± 45.5	52.6	95.2	-0.25
Lead	µg/l	49.3 ± 0.959	47.1 ± 4.7	4.93	95.6	-0.23

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	728 ± 72.8	54.2	96.7	-0.17
Nickel	µg/l	61 ± 1.26	61.5 ± 6.2	7.32	101	0.04
Selenium	µg/l	19.4 ± 0.524	22.7 ± 2.3	2.33	117	0.72
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.22	0.14	103	0.16
Zinc	µg/l	767 ± 23.6	849 ± 85	69.1	111	0.48

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	2.94 ± 0.29	0.438	94.1	-0.32
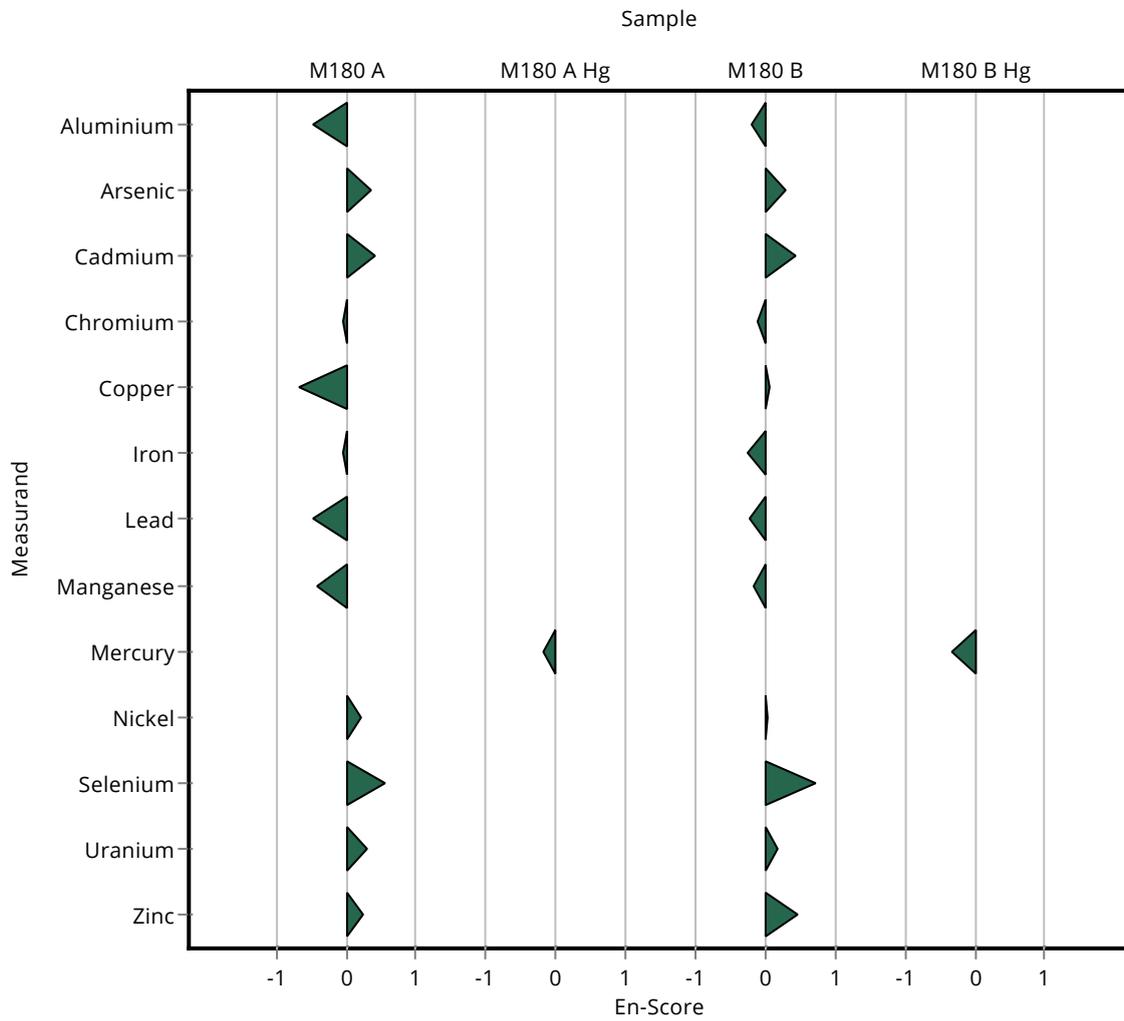
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	33.8 ± 6.8	3.03	111	1.14
Arsenic	µg/l	5.19 ± 0.158	5.25 ± 0.79	0.675	101	0.08
Cadmium	µg/l	0.644 ± 0.0142	0.674 ± 0.081	0.0644	105	0.47
Chromium	µg/l	2.27 ± 0.0977	2.27 ± 0.34	0.213	100	0.00
Copper	µg/l	12.5 ± 0.346	13 ± 1.6	1.13	104	0.43
Iron	µg/l	66.6 ± 1.43	68.7 ± 10	7.33	103	0.29
Lead	µg/l	2.16 ± 0.072	2.54 ± 0.3	0.216	118	1.77
Manganese	µg/l	5.53 ± 0.158	<10 ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	4.27 ± 0.47	0.47	109	0.76
Selenium	µg/l	4.41 ± 0.169	4.38 ± 0.66	0.529	99.4	-0.05
Uranium	µg/l	1.2 ± 0.0488	1.23 ± 0.18	0.104	102	0.25
Zinc	µg/l	1150 ± 18.1	1170 ± 176	103	102	0.19

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.91 ± 0.42	0.25	107	0.49

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	566 ± 113	61.8	91.6	-0.84
Arsenic	µg/l	87.5 ± 1.5	91.6 ± 14	11.4	105	0.36
Cadmium	µg/l	6.24 ± 0.127	6.64 ± 0.8	0.624	106	0.63
Chromium	µg/l	28.2 ± 0.401	28.3 ± 4.2	2.39	101	0.06
Copper	µg/l	83.1 ± 1.3	86.5 ± 10	7.48	104	0.46
Iron	µg/l	478 ± 9.93	494 ± 74	52.6	103	0.31
Lead	µg/l	49.3 ± 0.959	51.7 ± 6.2	4.93	105	0.50

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	772 ± 93	54.2	103	0.35
Nickel	µg/l	61 ± 1.26	65.1 ± 7.2	7.32	107	0.57
Selenium	µg/l	19.4 ± 0.524	20 ± 3	2.33	103	0.26
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.33	0.14	103	0.51
Zinc	µg/l	767 ± 23.6	848 ± 127	69.1	111	1.17

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.91 ± 0.86	0.438	125	1.79
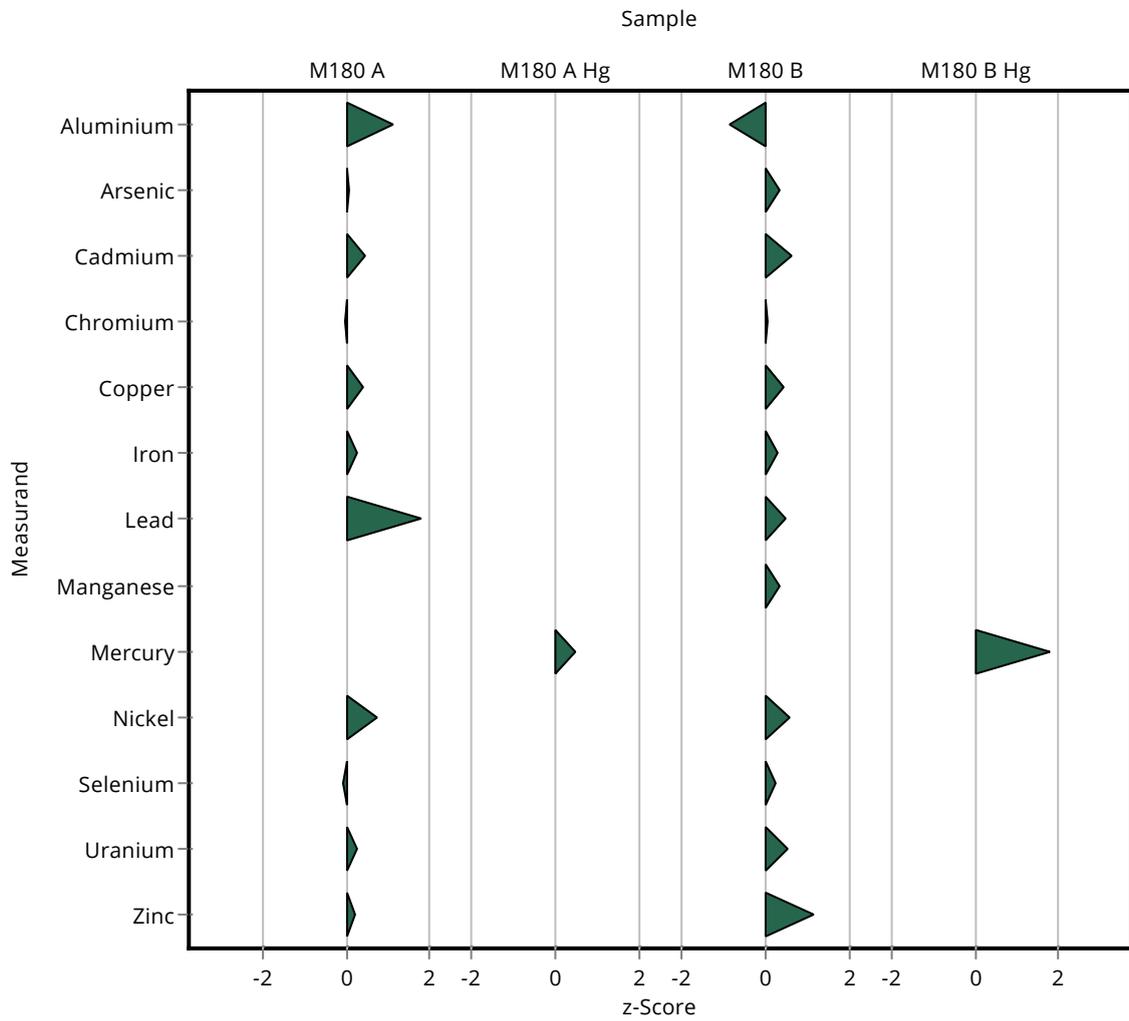
UMWELT
BUNDES
AMT

Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	33.8 ± 6.8	3.03	111	0.25
Arsenic	µg/l	5.19 ± 0.158	5.25 ± 0.79	0.675	101	0.04
Cadmium	µg/l	0.644 ± 0.0142	0.674 ± 0.081	0.0644	105	0.18
Chromium	µg/l	2.27 ± 0.0977	2.27 ± 0.34	0.213	100	0.00
Copper	µg/l	12.5 ± 0.346	13 ± 1.6	1.13	104	0.15
Iron	µg/l	66.6 ± 1.43	68.7 ± 10	7.33	103	0.10
Lead	µg/l	2.16 ± 0.072	2.54 ± 0.3	0.216	118	0.63
Manganese	µg/l	5.53 ± 0.158	<10 ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	4.27 ± 0.47	0.47	109	0.38
Selenium	µg/l	4.41 ± 0.169	4.38 ± 0.66	0.529	99.4	-0.02
Uranium	µg/l	1.2 ± 0.0488	1.23 ± 0.18	0.104	102	0.07
Zinc	µg/l	1150 ± 18.1	1170 ± 176	103	102	0.06

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.91 ± 0.42	0.25	107	0.15

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	566 ± 113	61.8	91.6	-0.23
Arsenic	µg/l	87.5 ± 1.5	91.6 ± 14	11.4	105	0.15
Cadmium	µg/l	6.24 ± 0.127	6.64 ± 0.8	0.624	106	0.25
Chromium	µg/l	28.2 ± 0.401	28.3 ± 4.2	2.39	101	0.02
Copper	µg/l	83.1 ± 1.3	86.5 ± 10	7.48	104	0.17
Iron	µg/l	478 ± 9.93	494 ± 74	52.6	103	0.11
Lead	µg/l	49.3 ± 0.959	51.7 ± 6.2	4.93	105	0.20

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	772 ± 93	54.2	103	0.10
Nickel	µg/l	61 ± 1.26	65.1 ± 7.2	7.32	107	0.29
Selenium	µg/l	19.4 ± 0.524	20 ± 3	2.33	103	0.10
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.33	0.14	103	0.11
Zinc	µg/l	767 ± 23.6	848 ± 127	69.1	111	0.32

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.91 ± 0.86	0.438	125	0.46
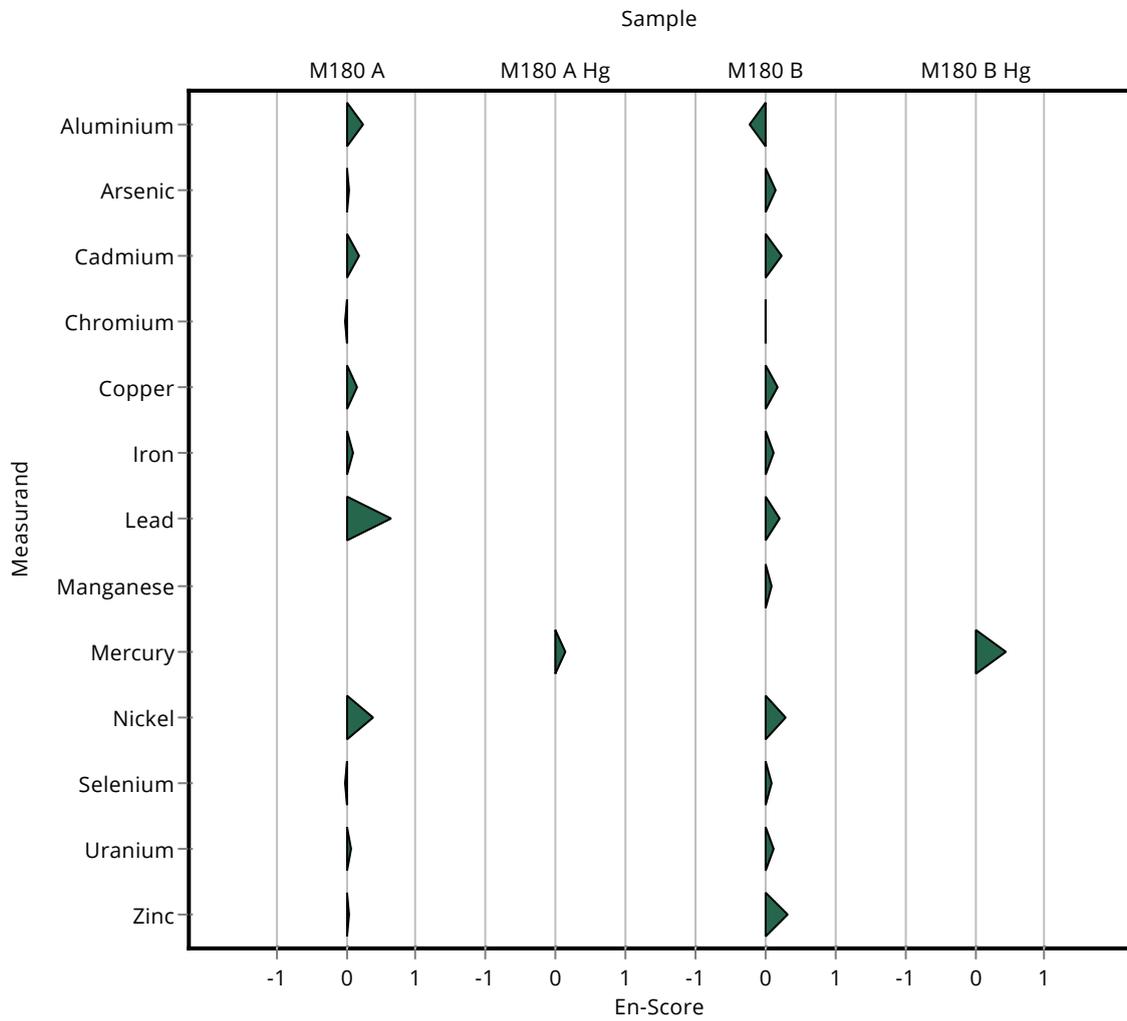
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	31.94 ± 3.194	3.03	105	0.53
Arsenic	µg/l	5.19 ± 0.158	5.28 ± 0.528	0.675	102	0.13
Cadmium	µg/l	0.644 ± 0.0142	0.65 ± 0.081	0.0644	101	0.09
Chromium	µg/l	2.27 ± 0.0977	<5 (LOQ) ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	<50 ± -	1.13	-	-
Iron	µg/l	66.6 ± 1.43	69.11 ± 6.911	7.33	104	0.34
Lead	µg/l	2.16 ± 0.072	2.15 ± 0.215	0.216	99.6	-0.04
Manganese	µg/l	5.53 ± 0.158	5.61 ± 0.561	0.398	101	0.20
Nickel	µg/l	3.91 ± 0.113	3.9 ± 0.39	0.47	99.7	-0.03
Selenium	µg/l	4.41 ± 0.169	3.94 ± 0.591	0.529	89.4	-0.88
Uranium	µg/l	1.2 ± 0.0488	<3 (LOQ) ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1112 ± 83.4	103	96.7	-0.37

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.47 ± 0.11	0.25	82.3	-1.27

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	645.3 ± 48.398	61.8	104	0.44
Arsenic	µg/l	87.5 ± 1.5	90.72 ± 9.072	11.4	104	0.29
Cadmium	µg/l	6.24 ± 0.127	6.46 ± 0.485	0.624	103	0.34
Chromium	µg/l	28.2 ± 0.401	29.69 ± 2.227	2.39	105	0.64
Copper	µg/l	83.1 ± 1.3	87.54 ± 13.131	7.48	105	0.60
Iron	µg/l	478 ± 9.93	494.8 ± 37.11	52.6	104	0.32
Lead	µg/l	49.3 ± 0.959	51.28 ± 3.846	4.93	104	0.41

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	763.7 ± 57.278	54.2	101	0.20
Nickel	µg/l	61 ± 1.26	62 ± 4.65	7.32	102	0.14
Selenium	µg/l	19.4 ± 0.524	17.49 ± 2.186	2.33	90.2	-0.82
Uranium	µg/l	2.13 ± 0.0419	2.16 ± 0.216	0.14	102	0.23
Zinc	µg/l	767 ± 23.6	800.1 ± 60.008	69.1	104	0.47

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	2.92 ± 0.219	0.438	93.4	-0.47
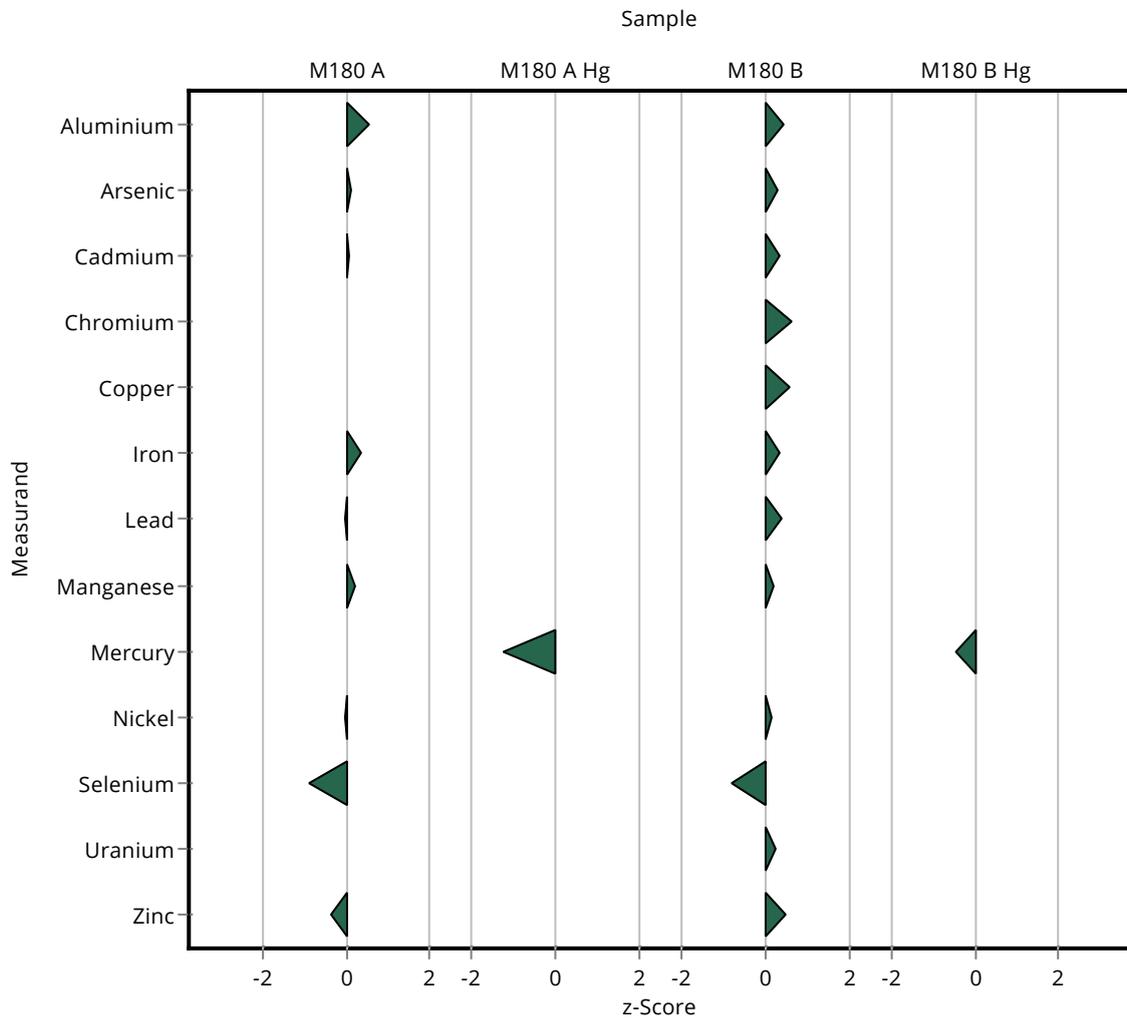
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	31.94 ± 3.194	3.03	105	0.25
Arsenic	µg/l	5.19 ± 0.158	5.28 ± 0.528	0.675	102	0.08
Cadmium	µg/l	0.644 ± 0.0142	0.65 ± 0.081	0.0644	101	0.04
Chromium	µg/l	2.27 ± 0.0977	<5 (LOQ) ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	<50 ± -	1.13	-	-
Iron	µg/l	66.6 ± 1.43	69.11 ± 6.911	7.33	104	0.18
Lead	µg/l	2.16 ± 0.072	2.15 ± 0.215	0.216	99.6	-0.02
Manganese	µg/l	5.53 ± 0.158	5.61 ± 0.561	0.398	101	0.07
Nickel	µg/l	3.91 ± 0.113	3.9 ± 0.39	0.47	99.7	-0.02
Selenium	µg/l	4.41 ± 0.169	3.94 ± 0.591	0.529	89.4	-0.39
Uranium	µg/l	1.2 ± 0.0488	<3 (LOQ) ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1112 ± 83.4	103	96.7	-0.23

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.47 ± 0.11	0.25	82.3	-1.41

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	645.3 ± 48.398	61.8	104	0.28
Arsenic	µg/l	87.5 ± 1.5	90.72 ± 9.072	11.4	104	0.18
Cadmium	µg/l	6.24 ± 0.127	6.46 ± 0.485	0.624	103	0.22
Chromium	µg/l	28.2 ± 0.401	29.69 ± 2.227	2.39	105	0.34
Copper	µg/l	83.1 ± 1.3	87.54 ± 13.131	7.48	105	0.17
Iron	µg/l	478 ± 9.93	494.8 ± 37.11	52.6	104	0.23
Lead	µg/l	49.3 ± 0.959	51.28 ± 3.846	4.93	104	0.26

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	763.7 ± 57.278	54.2	101	0.09
Nickel	µg/l	61 ± 1.26	62 ± 4.65	7.32	102	0.11
Selenium	µg/l	19.4 ± 0.524	17.49 ± 2.186	2.33	90.2	-0.43
Uranium	µg/l	2.13 ± 0.0419	2.16 ± 0.216	0.14	102	0.07
Zinc	µg/l	767 ± 23.6	800.1 ± 60.008	69.1	104	0.27

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	2.92 ± 0.219	0.438	93.4	-0.46
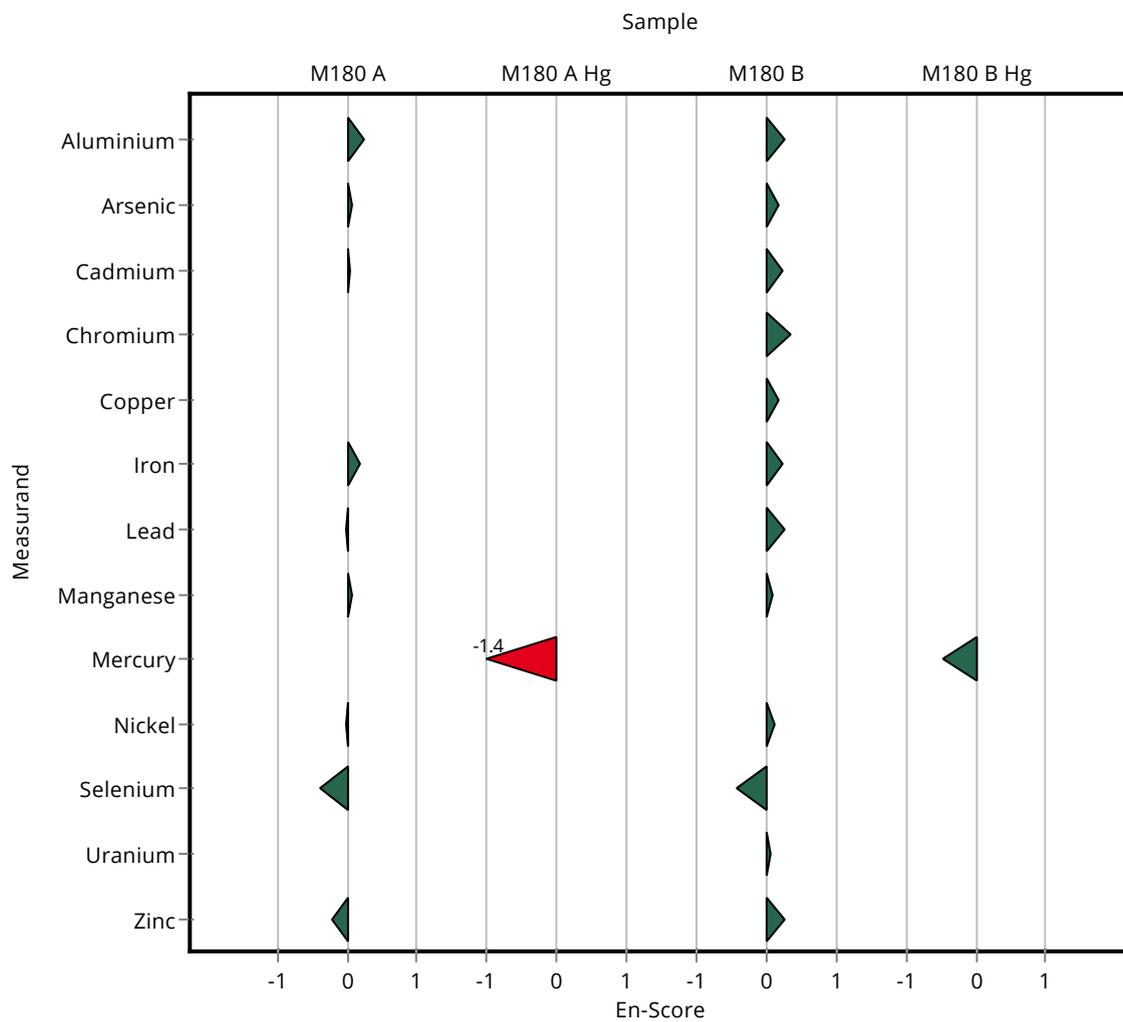
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	5.72 ± 1.1	0.675	110	0.78
Cadmium	µg/l	0.644 ± 0.0142	0.661 ± 0.13	0.0644	103	0.26
Chromium	µg/l	2.27 ± 0.0977	2.09 ± 0.42	0.213	92	-0.85
Copper	µg/l	12.5 ± 0.346	12.7 ± 2.5	1.13	101	0.16
Iron	µg/l	66.6 ± 1.43	- ± -	7.33	-	-
Lead	µg/l	2.16 ± 0.072	1.95 ± 0.39	0.216	90.4	-0.96
Manganese	µg/l	5.53 ± 0.158	- ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	3.69 ± 0.74	0.47	94.3	-0.48
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	- ± -	103	-	-

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	93.4 ± 19	11.4	107	0.52
Cadmium	µg/l	6.24 ± 0.127	7.19 ± 1.4	0.624	115	1.51
Chromium	µg/l	28.2 ± 0.401	27 ± 5.4	2.39	95.9	-0.48
Copper	µg/l	83.1 ± 1.3	104 ± 21	7.48	125	2.80
Iron	µg/l	478 ± 9.93	- ± -	52.6	-	-
Lead	µg/l	49.3 ± 0.959	46.4 ± 9.3	4.93	94.2	-0.58

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	- ± -	54.2	-	-
Nickel	µg/l	61 ± 1.26	55.3 ± 11	7.32	90.7	-0.77
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	- ± -	69.1	-	-

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-

Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	5.72 ± 1.1	0.675	110	0.24
Cadmium	µg/l	0.644 ± 0.0142	0.661 ± 0.13	0.0644	103	0.07
Chromium	µg/l	2.27 ± 0.0977	2.09 ± 0.42	0.213	92	-0.21
Copper	µg/l	12.5 ± 0.346	12.7 ± 2.5	1.13	101	0.04
Iron	µg/l	66.6 ± 1.43	- ± -	7.33	-	-
Lead	µg/l	2.16 ± 0.072	1.95 ± 0.39	0.216	90.4	-0.27
Manganese	µg/l	5.53 ± 0.158	- ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	3.69 ± 0.74	0.47	94.3	-0.15
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	- ± -	103	-	-

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	93.4 ± 19	11.4	107	0.16
Cadmium	µg/l	6.24 ± 0.127	7.19 ± 1.4	0.624	115	0.34
Chromium	µg/l	28.2 ± 0.401	27 ± 5.4	2.39	95.9	-0.11
Copper	µg/l	83.1 ± 1.3	104 ± 21	7.48	125	0.50
Iron	µg/l	478 ± 9.93	- ± -	52.6	-	-
Lead	µg/l	49.3 ± 0.959	46.4 ± 9.3	4.93	94.2	-0.15

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	- ± -	54.2	-	-
Nickel	µg/l	61 ± 1.26	55.3 ± 11	7.32	90.7	-0.26
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	- ± -	69.1	-	-

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-

Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	- ± -	0.675	-	-
Cadmium	µg/l	0.644 ± 0.0142	0.353 ± 0.071	0.0644	54.8	-4.52
Chromium	µg/l	2.27 ± 0.0977	2.76 ± 0.552	0.213	122	2.29
Copper	µg/l	12.5 ± 0.346	9.6 ± 1.92	1.13	76.7	-2.59
Iron	µg/l	66.6 ± 1.43	- ± -	7.33	-	-
Lead	µg/l	2.16 ± 0.072	1.35 ± 0.27	0.216	62.6	-3.74
Manganese	µg/l	5.53 ± 0.158	5.52 ± 1.104	0.398	99.8	-0.02
Nickel	µg/l	3.91 ± 0.113	3.35 ± 0.67	0.47	85.6	-1.20
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	671.3 ± 13.4	103	58.4	-4.63

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	0.757 ± 0.151	0.25	42.4	-4.12

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	- ± -	11.4	-	-
Cadmium	µg/l	6.24 ± 0.127	5.68 ± 1.136	0.624	91	-0.90
Chromium	µg/l	28.2 ± 0.401	54.1 ± 5.82	2.39	192	10.84
Copper	µg/l	83.1 ± 1.3	76.3 ± 5.26	7.48	91.9	-0.90
Iron	µg/l	478 ± 9.93	- ± -	52.6	-	-
Lead	µg/l	49.3 ± 0.959	59.2 ± 2.84	4.93	120	2.02

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	738.5 ± 23.83	54.2	98.1	-0.27
Nickel	µg/l	61 ± 1.26	42.8 ± 8.76	7.32	70.2	-2.48
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	638.2 ± 27.64	69.1	83.2	-1.87

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	2.053 ± 0.411	0.438	65.7	-2.45
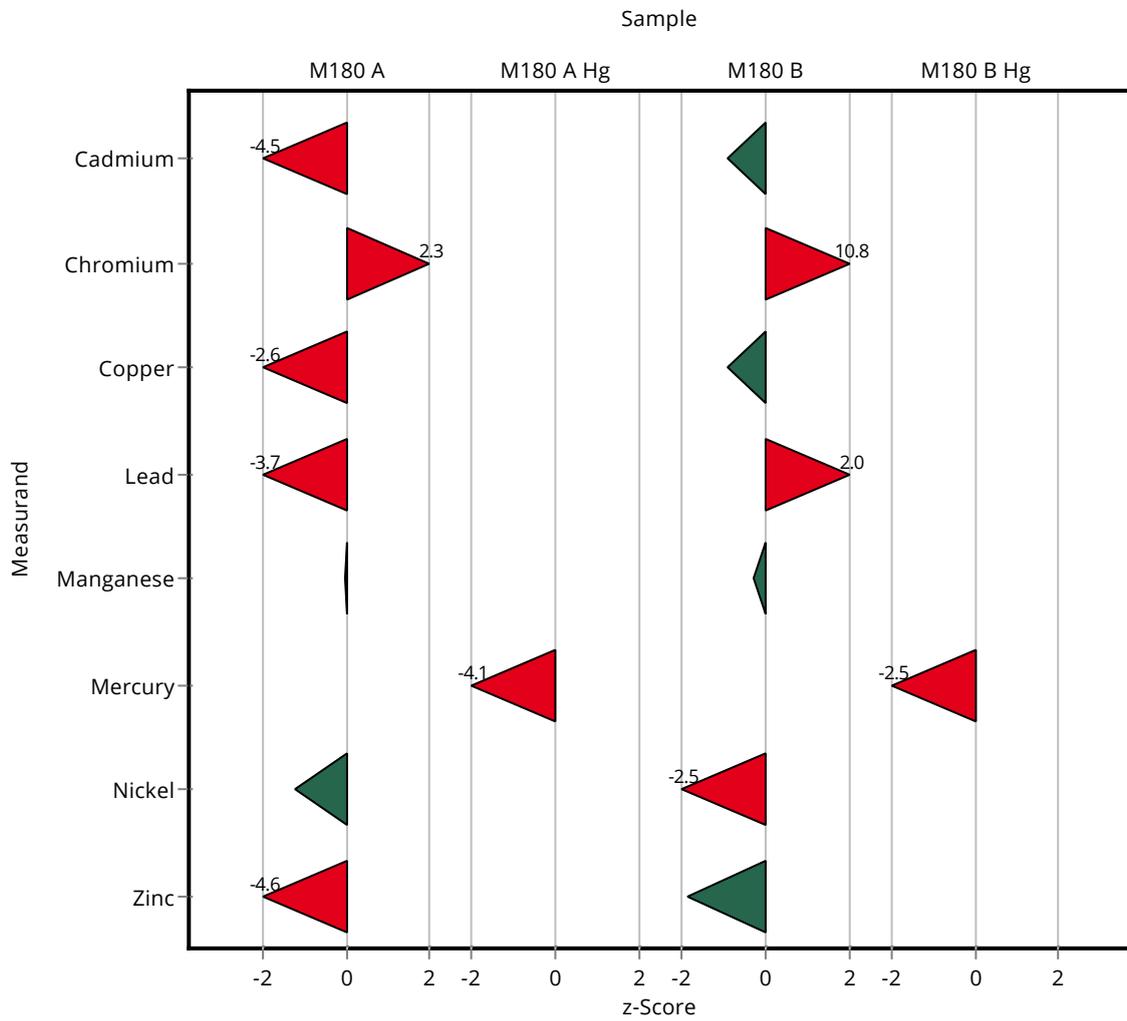
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	- ± -	0.675	-	-
Cadmium	µg/l	0.644 ± 0.0142	0.353 ± 0.071	0.0644	54.8	-2.04
Chromium	µg/l	2.27 ± 0.0977	2.76 ± 0.552	0.213	122	0.44
Copper	µg/l	12.5 ± 0.346	9.6 ± 1.92	1.13	76.7	-0.76
Iron	µg/l	66.6 ± 1.43	- ± -	7.33	-	-
Lead	µg/l	2.16 ± 0.072	1.35 ± 0.27	0.216	62.6	-1.48
Manganese	µg/l	5.53 ± 0.158	5.52 ± 1.104	0.398	99.8	0.00
Nickel	µg/l	3.91 ± 0.113	3.35 ± 0.67	0.47	85.6	-0.42
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	671.3 ± 13.4	103	58.4	-14.80

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	0.757 ± 0.151	0.25	42.4	-3.38

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	- ± -	11.4	-	-
Cadmium	µg/l	6.24 ± 0.127	5.68 ± 1.136	0.624	91	-0.25
Chromium	µg/l	28.2 ± 0.401	54.1 ± 5.82	2.39	192	2.23
Copper	µg/l	83.1 ± 1.3	76.3 ± 5.26	7.48	91.9	-0.64
Iron	µg/l	478 ± 9.93	- ± -	52.6	-	-
Lead	µg/l	49.3 ± 0.959	59.2 ± 2.84	4.93	120	1.73

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	738.5 ± 23.83	54.2	98.1	-0.29
Nickel	µg/l	61 ± 1.26	42.8 ± 8.76	7.32	70.2	-1.03
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	638.2 ± 27.64	69.1	83.2	-2.15

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	2.053 ± 0.411	0.438	65.7	-1.30
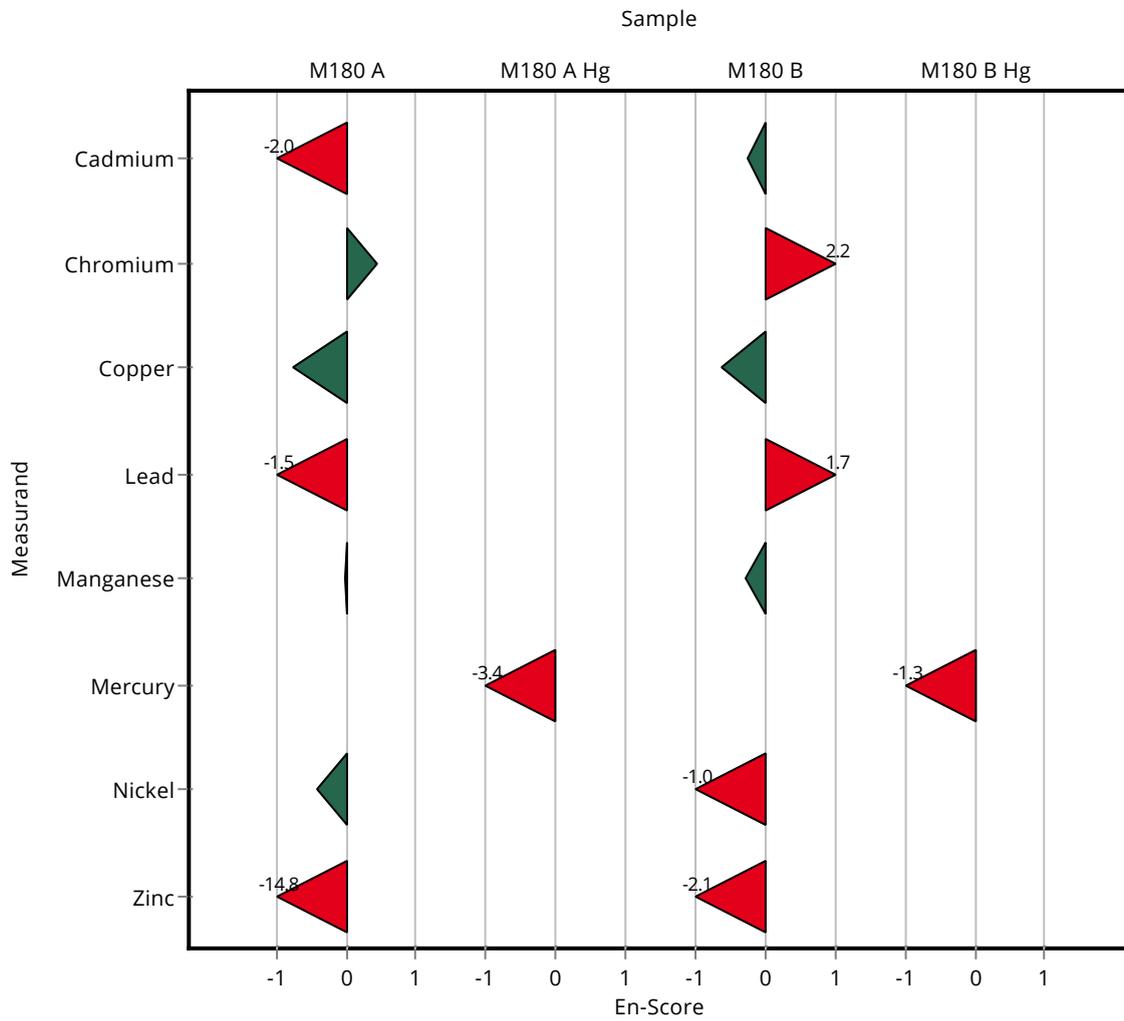
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	28.3 ± 2.12	3.03	93.3	-0.67
Arsenic	µg/l	5.19 ± 0.158	5.15 ± 0.365	0.675	99.2	-0.06
Cadmium	µg/l	0.644 ± 0.0142	0.627 ± 0.0446	0.0644	97.4	-0.26
Chromium	µg/l	2.27 ± 0.0977	2.29 ± 0.158	0.213	101	0.09
Copper	µg/l	12.5 ± 0.346	12.1 ± 0.83	1.13	96.7	-0.37
Iron	µg/l	66.6 ± 1.43	81.8 ± 5.17	7.33	123	2.07
Lead	µg/l	2.16 ± 0.072	2.27 ± 0.158	0.216	105	0.52
Manganese	µg/l	5.53 ± 0.158	5.49 ± 0.302	0.398	99.3	-0.10
Nickel	µg/l	3.91 ± 0.113	3.75 ± 0.287	0.47	95.8	-0.35
Selenium	µg/l	4.41 ± 0.169	4.12 ± 0.305	0.529	93.5	-0.54
Uranium	µg/l	1.2 ± 0.0488	1.32 ± 0.0925	0.104	110	1.12
Zinc	µg/l	1150 ± 18.1	1160 ± 51.7	103	101	0.10

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.99 ± 0.146	0.25	111	0.81

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	618 ± 46.2	61.8	100	0.00
Arsenic	µg/l	87.5 ± 1.5	88 ± 6.23	11.4	101	0.05
Cadmium	µg/l	6.24 ± 0.127	6.12 ± 0.435	0.624	98	-0.20
Chromium	µg/l	28.2 ± 0.401	29.1 ± 2	2.39	103	0.39
Copper	µg/l	83.1 ± 1.3	85.2 ± 5.85	7.48	103	0.29
Iron	µg/l	478 ± 9.93	490 ± 30.9	52.6	103	0.23
Lead	µg/l	49.3 ± 0.959	51.9 ± 3.6	4.93	105	0.54

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	758 ± 41.7	54.2	101	0.09
Nickel	µg/l	61 ± 1.26	61.4 ± 4.69	7.32	101	0.06
Selenium	µg/l	19.4 ± 0.524	19.6 ± 1.45	2.33	101	0.09
Uranium	µg/l	2.13 ± 0.0419	2.24 ± 0.157	0.14	105	0.80
Zinc	µg/l	767 ± 23.6	793 ± 35.3	69.1	103	0.37

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.35 ± 0.245	0.438	107	0.51
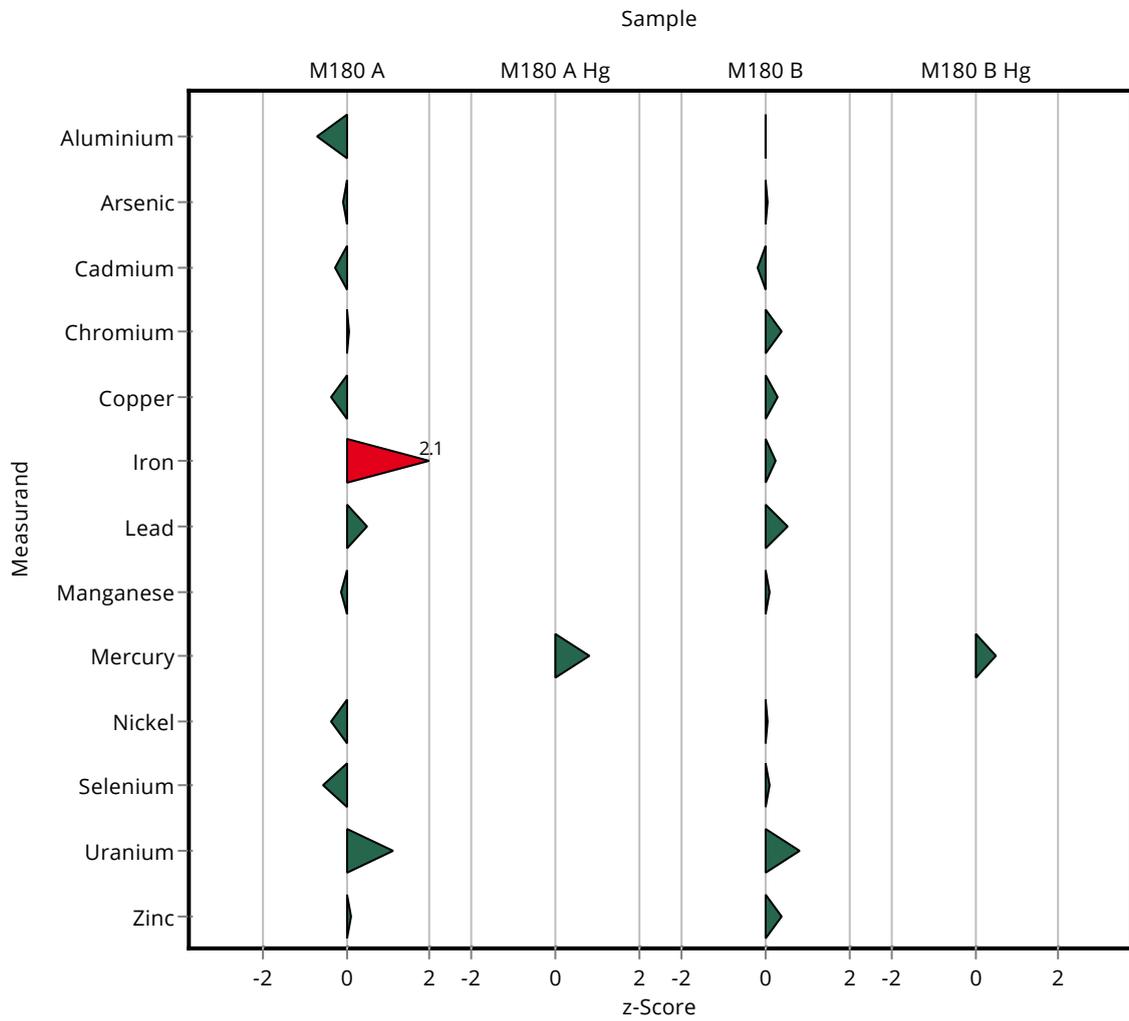
Summary of results Metals and trace elements M180 - En-Score   Labcode: LC0012

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	28.3 ± 2.12	3.03	93.3	-0.47
Arsenic	µg/l	5.19 ± 0.158	5.15 ± 0.365	0.675	99.2	-0.06
Cadmium	µg/l	0.644 ± 0.0142	0.627 ± 0.0446	0.0644	97.4	-0.19
Chromium	µg/l	2.27 ± 0.0977	2.29 ± 0.158	0.213	101	0.06
Copper	µg/l	12.5 ± 0.346	12.1 ± 0.83	1.13	96.7	-0.25
Iron	µg/l	66.6 ± 1.43	81.8 ± 5.17	7.33	123	1.46
Lead	µg/l	2.16 ± 0.072	2.27 ± 0.158	0.216	105	0.35
Manganese	µg/l	5.53 ± 0.158	5.49 ± 0.302	0.398	99.3	-0.06
Nickel	µg/l	3.91 ± 0.113	3.75 ± 0.287	0.47	95.8	-0.28
Selenium	µg/l	4.41 ± 0.169	4.12 ± 0.305	0.529	93.5	-0.45
Uranium	µg/l	1.2 ± 0.0488	1.32 ± 0.0925	0.104	110	0.61
Zinc	µg/l	1150 ± 18.1	1160 ± 51.7	103	101	0.10

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.99 ± 0.146	0.25	111	0.69

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	618 ± 46.2	61.8	100	0.00
Arsenic	µg/l	87.5 ± 1.5	88 ± 6.23	11.4	101	0.04
Cadmium	µg/l	6.24 ± 0.127	6.12 ± 0.435	0.624	98	-0.14
Chromium	µg/l	28.2 ± 0.401	29.1 ± 2	2.39	103	0.23
Copper	µg/l	83.1 ± 1.3	85.2 ± 5.85	7.48	103	0.18
Iron	µg/l	478 ± 9.93	490 ± 30.9	52.6	103	0.19
Lead	µg/l	49.3 ± 0.959	51.9 ± 3.6	4.93	105	0.36

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	758 ± 41.7	54.2	101	0.06
Nickel	µg/l	61 ± 1.26	61.4 ± 4.69	7.32	101	0.05
Selenium	µg/l	19.4 ± 0.524	19.6 ± 1.45	2.33	101	0.07
Uranium	µg/l	2.13 ± 0.0419	2.24 ± 0.157	0.14	105	0.35
Zinc	µg/l	767 ± 23.6	793 ± 35.3	69.1	103	0.34

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.35 ± 0.245	0.438	107	0.45
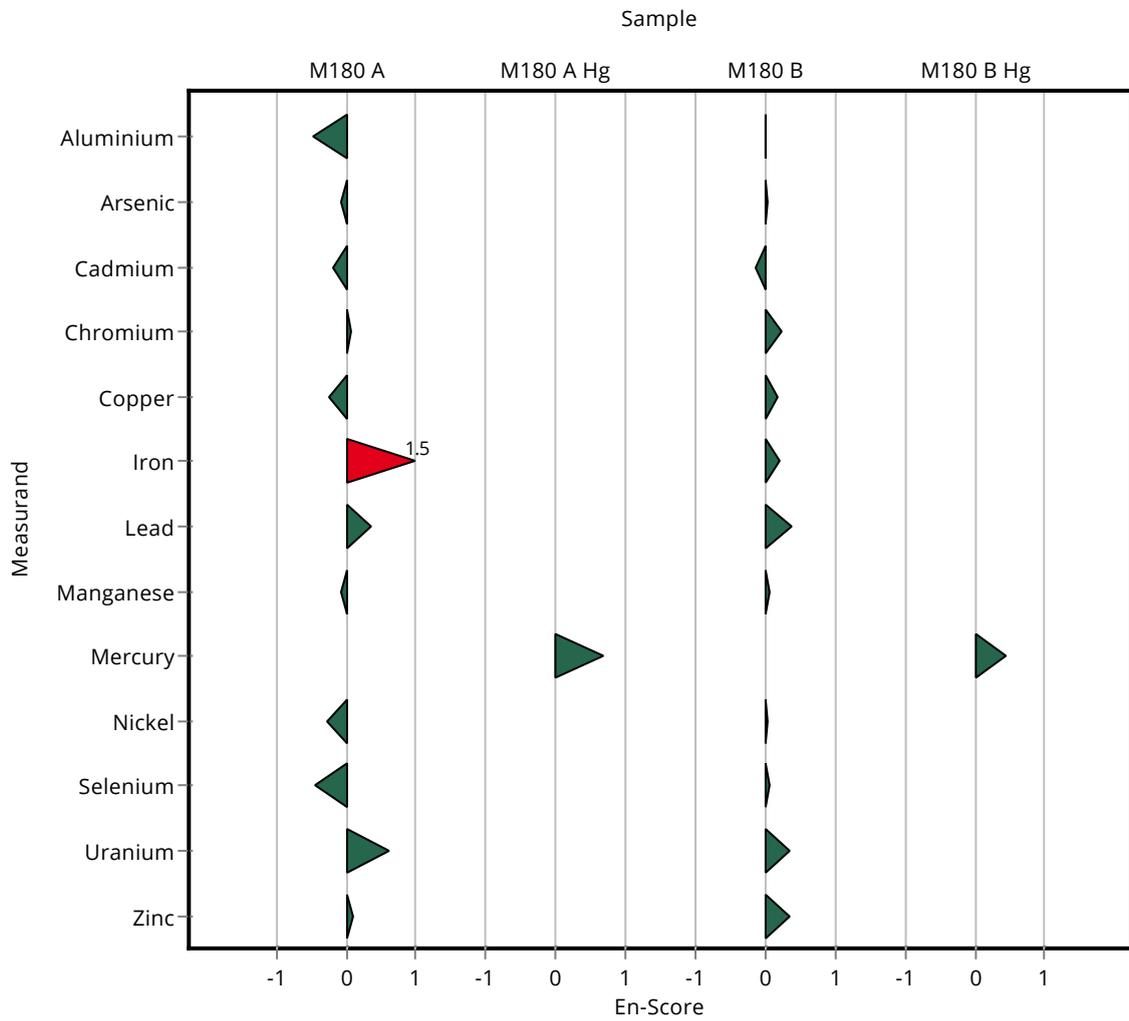
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	28.5 ± 1.43	3.03	94	-0.60
Arsenic	µg/l	5.19 ± 0.158	4.72 ± 0.283	0.675	90.9	-0.70
Cadmium	µg/l	0.644 ± 0.0142	0.585 ± 0.0234	0.0644	90.8	-0.92
Chromium	µg/l	2.27 ± 0.0977	2.13 ± 0.192	0.213	93.8	-0.66
Copper	µg/l	12.5 ± 0.346	11.4 ± 0.684	1.13	91.1	-0.99
Iron	µg/l	66.6 ± 1.43	68.7 ± 3.44	7.33	103	0.29
Lead	µg/l	2.16 ± 0.072	1.91 ± 0.172	0.216	88.5	-1.15
Manganese	µg/l	5.53 ± 0.158	5.14 ± 0.308	0.398	93	-0.98
Nickel	µg/l	3.91 ± 0.113	3.64 ± 0.182	0.47	93	-0.58
Selenium	µg/l	4.41 ± 0.169	3.87 ± 0.426	0.529	87.8	-1.01
Uranium	µg/l	1.2 ± 0.0488	1.14 ± 0.057	0.104	94.7	-0.62
Zinc	µg/l	1150 ± 18.1	966 ± 48.3	103	84	-1.78

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.81 ± 0.145	0.25	101	0.09

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	580 ± 29	61.8	93.8	-0.62
Arsenic	µg/l	87.5 ± 1.5	82.5 ± 4.95	11.4	94.3	-0.44
Cadmium	µg/l	6.24 ± 0.127	5.86 ± 0.234	0.624	93.8	-0.62
Chromium	µg/l	28.2 ± 0.401	26.8 ± 2.41	2.39	95.2	-0.57
Copper	µg/l	83.1 ± 1.3	77.8 ± 4.67	7.48	93.7	-0.70
Iron	µg/l	478 ± 9.93	442 ± 22.1	52.6	92.5	-0.68
Lead	µg/l	49.3 ± 0.959	45 ± 4.05	4.93	91.4	-0.86

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	712 ± 42.7	54.2	94.6	-0.75
Nickel	µg/l	61 ± 1.26	57.3 ± 2.87	7.32	94	-0.50
Selenium	µg/l	19.4 ± 0.524	18.4 ± 2.02	2.33	94.9	-0.43
Uranium	µg/l	2.13 ± 0.0419	2.03 ± 0.102	0.14	95.4	-0.70
Zinc	µg/l	767 ± 23.6	689 ± 34.5	69.1	89.8	-1.13

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.08 ± 0.246	0.438	98.6	-0.10
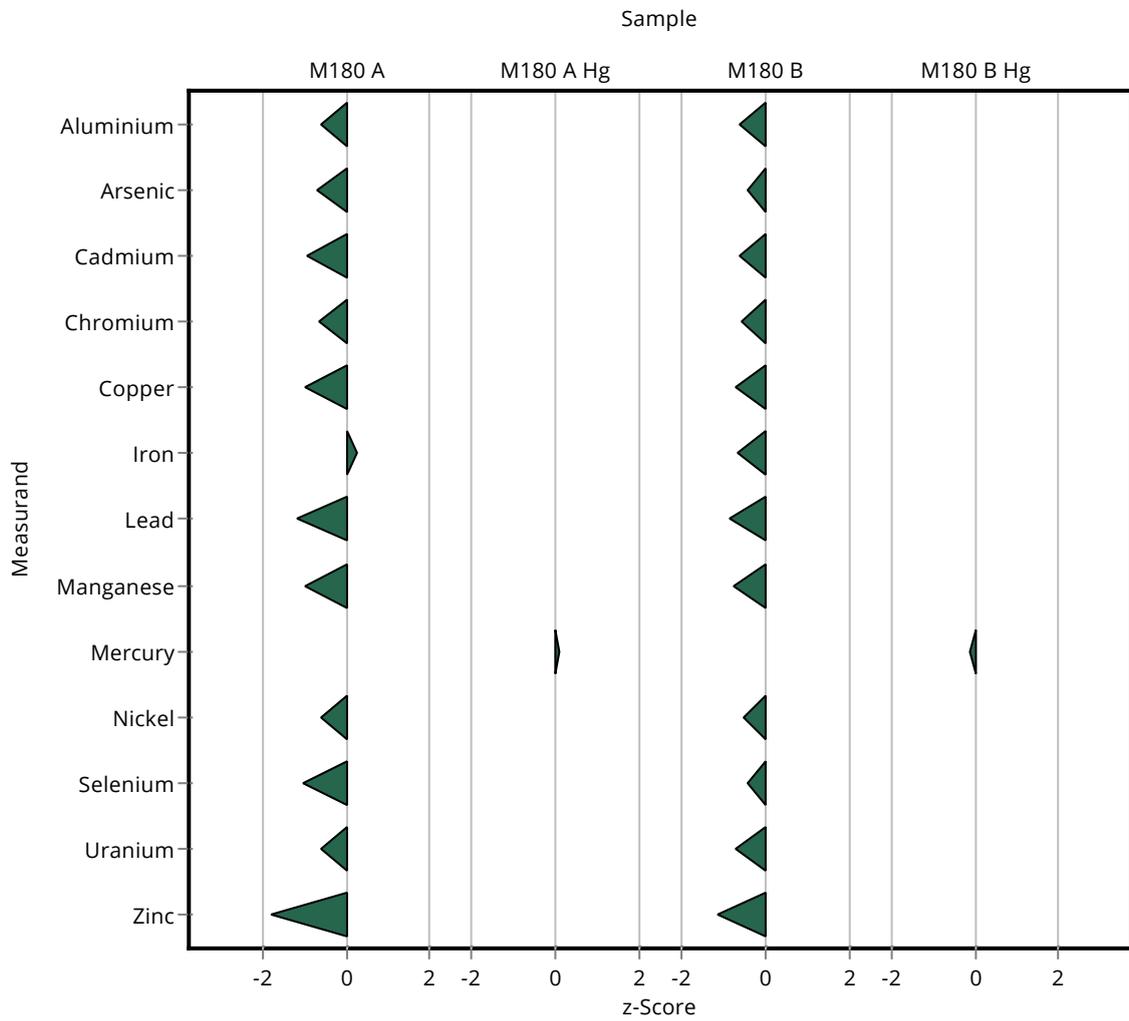
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	28.5 ± 1.43	3.03	94	-0.60
Arsenic	µg/l	5.19 ± 0.158	4.72 ± 0.283	0.675	90.9	-0.80
Cadmium	µg/l	0.644 ± 0.0142	0.585 ± 0.0234	0.0644	90.8	-1.21
Chromium	µg/l	2.27 ± 0.0977	2.13 ± 0.192	0.213	93.8	-0.35
Copper	µg/l	12.5 ± 0.346	11.4 ± 0.684	1.13	91.1	-0.79
Iron	µg/l	66.6 ± 1.43	68.7 ± 3.44	7.33	103	0.30
Lead	µg/l	2.16 ± 0.072	1.91 ± 0.172	0.216	88.5	-0.70
Manganese	µg/l	5.53 ± 0.158	5.14 ± 0.308	0.398	93	-0.61
Nickel	µg/l	3.91 ± 0.113	3.64 ± 0.182	0.47	93	-0.72
Selenium	µg/l	4.41 ± 0.169	3.87 ± 0.426	0.529	87.8	-0.62
Uranium	µg/l	1.2 ± 0.0488	1.14 ± 0.057	0.104	94.7	-0.51
Zinc	µg/l	1150 ± 18.1	966 ± 48.3	103	84	-1.87

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.81 ± 0.145	0.25	101	0.08

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	580 ± 29	61.8	93.8	-0.62
Arsenic	µg/l	87.5 ± 1.5	82.5 ± 4.95	11.4	94.3	-0.50
Cadmium	µg/l	6.24 ± 0.127	5.86 ± 0.234	0.624	93.8	-0.79
Chromium	µg/l	28.2 ± 0.401	26.8 ± 2.41	2.39	95.2	-0.28
Copper	µg/l	83.1 ± 1.3	77.8 ± 4.67	7.48	93.7	-0.56
Iron	µg/l	478 ± 9.93	442 ± 22.1	52.6	92.5	-0.79
Lead	µg/l	49.3 ± 0.959	45 ± 4.05	4.93	91.4	-0.52

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	712 ± 42.7	54.2	94.6	-0.47
Nickel	µg/l	61 ± 1.26	57.3 ± 2.87	7.32	94	-0.62
Selenium	µg/l	19.4 ± 0.524	18.4 ± 2.02	2.33	94.9	-0.24
Uranium	µg/l	2.13 ± 0.0419	2.03 ± 0.102	0.14	95.4	-0.47
Zinc	µg/l	767 ± 23.6	689 ± 34.5	69.1	89.8	-1.07

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.08 ± 0.246	0.438	98.6	-0.09
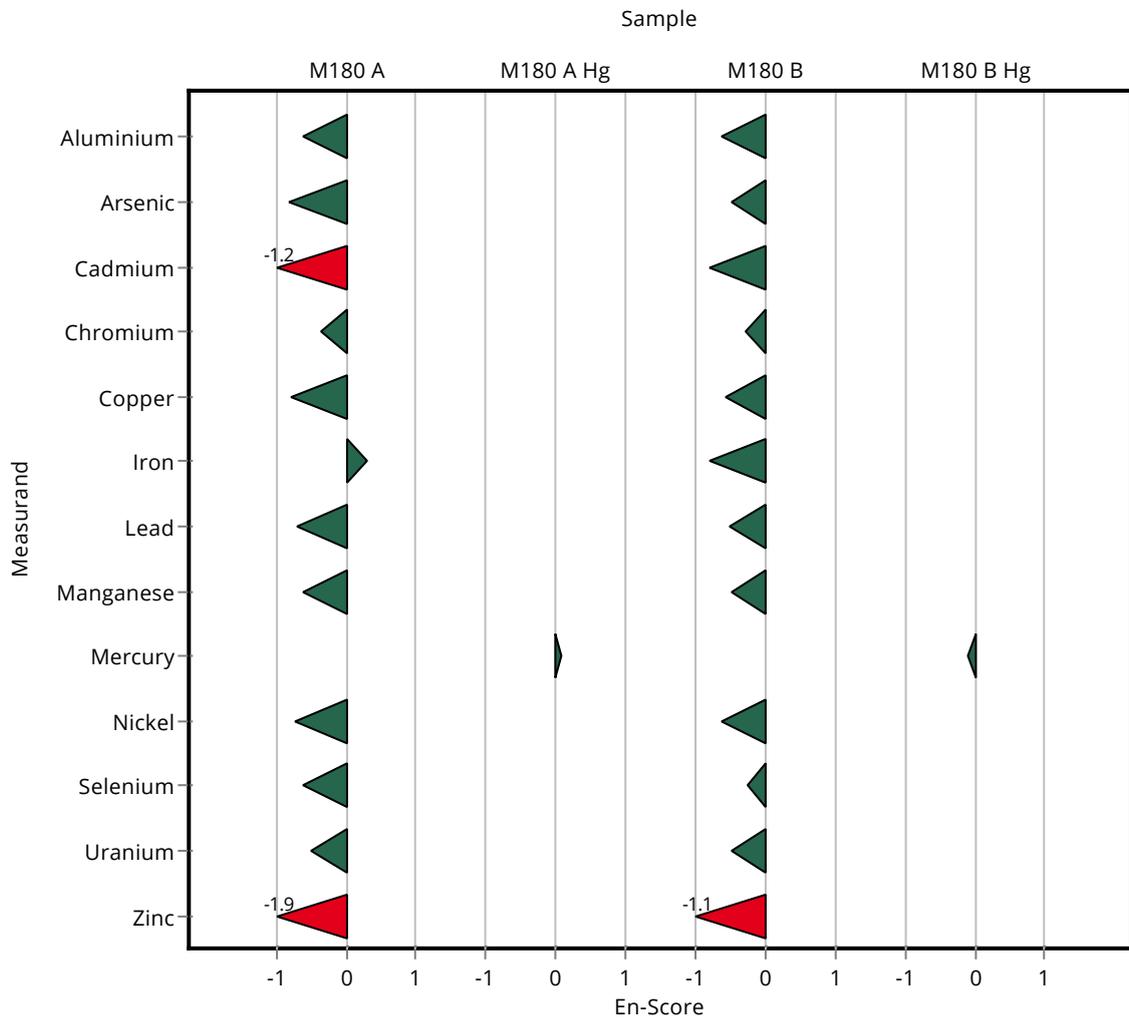
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	29.73 ± 5.17	3.03	98	-0.20
Arsenic	µg/l	5.19 ± 0.158	4.93 ± 0.85	0.675	94.9	-0.39
Cadmium	µg/l	0.644 ± 0.0142	0.65 ± 0.08	0.0644	101	0.09
Chromium	µg/l	2.27 ± 0.0977	2.19 ± 0.27	0.213	96.5	-0.38
Copper	µg/l	12.5 ± 0.346	12.92 ± 1.71	1.13	103	0.36
Iron	µg/l	66.6 ± 1.43	67.62 ± 9.4	7.33	102	0.14
Lead	µg/l	2.16 ± 0.072	2.17 ± 0.32	0.216	101	0.06
Manganese	µg/l	5.53 ± 0.158	5.71 ± 0.67	0.398	103	0.45
Nickel	µg/l	3.91 ± 0.113	3.98 ± 0.31	0.47	102	0.14
Selenium	µg/l	4.41 ± 0.169	4.16 ± 0.77	0.529	94.4	-0.46
Uranium	µg/l	1.2 ± 0.0488	1.25 ± 0.25	0.104	104	0.45
Zinc	µg/l	1150 ± 18.1	1117 ± 136	103	97.1	-0.32

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.72 ± 0.22	0.25	96.3	-0.27

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	603 ± 105	61.8	97.6	-0.24
Arsenic	µg/l	87.5 ± 1.5	83.6 ± 14.4	11.4	95.6	-0.34
Cadmium	µg/l	6.24 ± 0.127	6.19 ± 0.74	0.624	99.1	-0.09
Chromium	µg/l	28.2 ± 0.401	28.62 ± 3.5	2.39	102	0.19
Copper	µg/l	83.1 ± 1.3	85.13 ± 11.2	7.48	102	0.28
Iron	µg/l	478 ± 9.93	475 ± 66	52.6	99.4	-0.05
Lead	µg/l	49.3 ± 0.959	50.26 ± 7.34	4.93	102	0.20

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	741 ± 86.7	54.2	98.4	-0.22
Nickel	µg/l	61 ± 1.26	64.4 ± 5.02	7.32	106	0.47
Selenium	µg/l	19.4 ± 0.524	18.33 ± 3.41	2.33	94.5	-0.46
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.43	0.14	103	0.51
Zinc	µg/l	767 ± 23.6	762.5 ± 93	69.1	99.4	-0.07

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.068 ± 0.4	0.438	98.2	-0.13
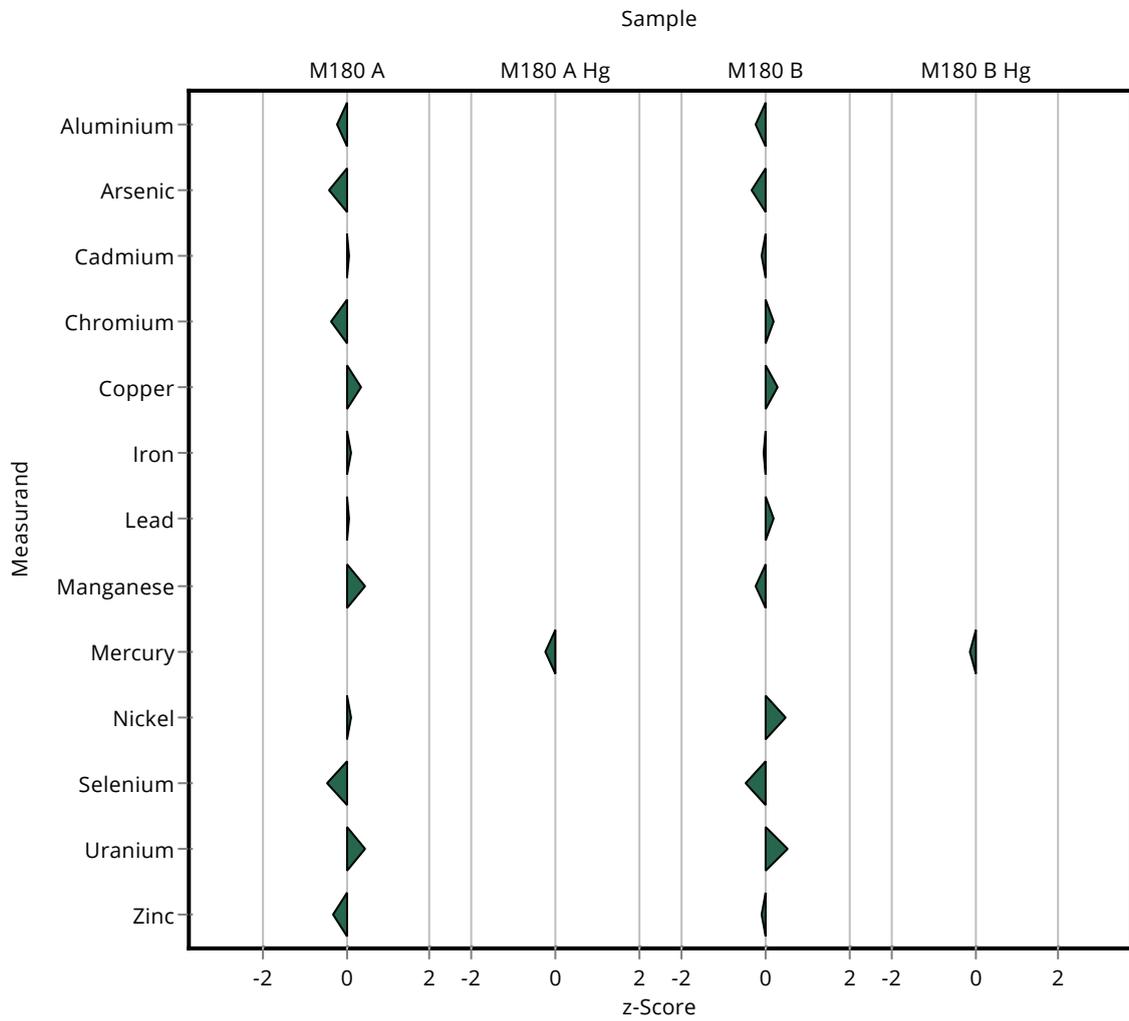
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	29.73 ± 5.17	3.03	98	-0.06
Arsenic	µg/l	5.19 ± 0.158	4.93 ± 0.85	0.675	94.9	-0.15
Cadmium	µg/l	0.644 ± 0.0142	0.65 ± 0.08	0.0644	101	0.04
Chromium	µg/l	2.27 ± 0.0977	2.19 ± 0.27	0.213	96.5	-0.15
Copper	µg/l	12.5 ± 0.346	12.92 ± 1.71	1.13	103	0.12
Iron	µg/l	66.6 ± 1.43	67.62 ± 9.4	7.33	102	0.05
Lead	µg/l	2.16 ± 0.072	2.17 ± 0.32	0.216	101	0.02
Manganese	µg/l	5.53 ± 0.158	5.71 ± 0.67	0.398	103	0.13
Nickel	µg/l	3.91 ± 0.113	3.98 ± 0.31	0.47	102	0.11
Selenium	µg/l	4.41 ± 0.169	4.16 ± 0.77	0.529	94.4	-0.16
Uranium	µg/l	1.2 ± 0.0488	1.25 ± 0.25	0.104	104	0.09
Zinc	µg/l	1150 ± 18.1	1117 ± 136	103	97.1	-0.12

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.72 ± 0.22	0.25	96.3	-0.15

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	603 ± 105	61.8	97.6	-0.07
Arsenic	µg/l	87.5 ± 1.5	83.6 ± 14.4	11.4	95.6	-0.13
Cadmium	µg/l	6.24 ± 0.127	6.19 ± 0.74	0.624	99.1	-0.04
Chromium	µg/l	28.2 ± 0.401	28.62 ± 3.5	2.39	102	0.07
Copper	µg/l	83.1 ± 1.3	85.13 ± 11.2	7.48	102	0.09
Iron	µg/l	478 ± 9.93	475 ± 66	52.6	99.4	-0.02
Lead	µg/l	49.3 ± 0.959	50.26 ± 7.34	4.93	102	0.07

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	741 ± 86.7	54.2	98.4	-0.07
Nickel	µg/l	61 ± 1.26	64.4 ± 5.02	7.32	106	0.34
Selenium	µg/l	19.4 ± 0.524	18.33 ± 3.41	2.33	94.5	-0.15
Uranium	µg/l	2.13 ± 0.0419	2.2 ± 0.43	0.14	103	0.08
Zinc	µg/l	767 ± 23.6	762.5 ± 93	69.1	99.4	-0.03

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.068 ± 0.4	0.438	98.2	-0.07
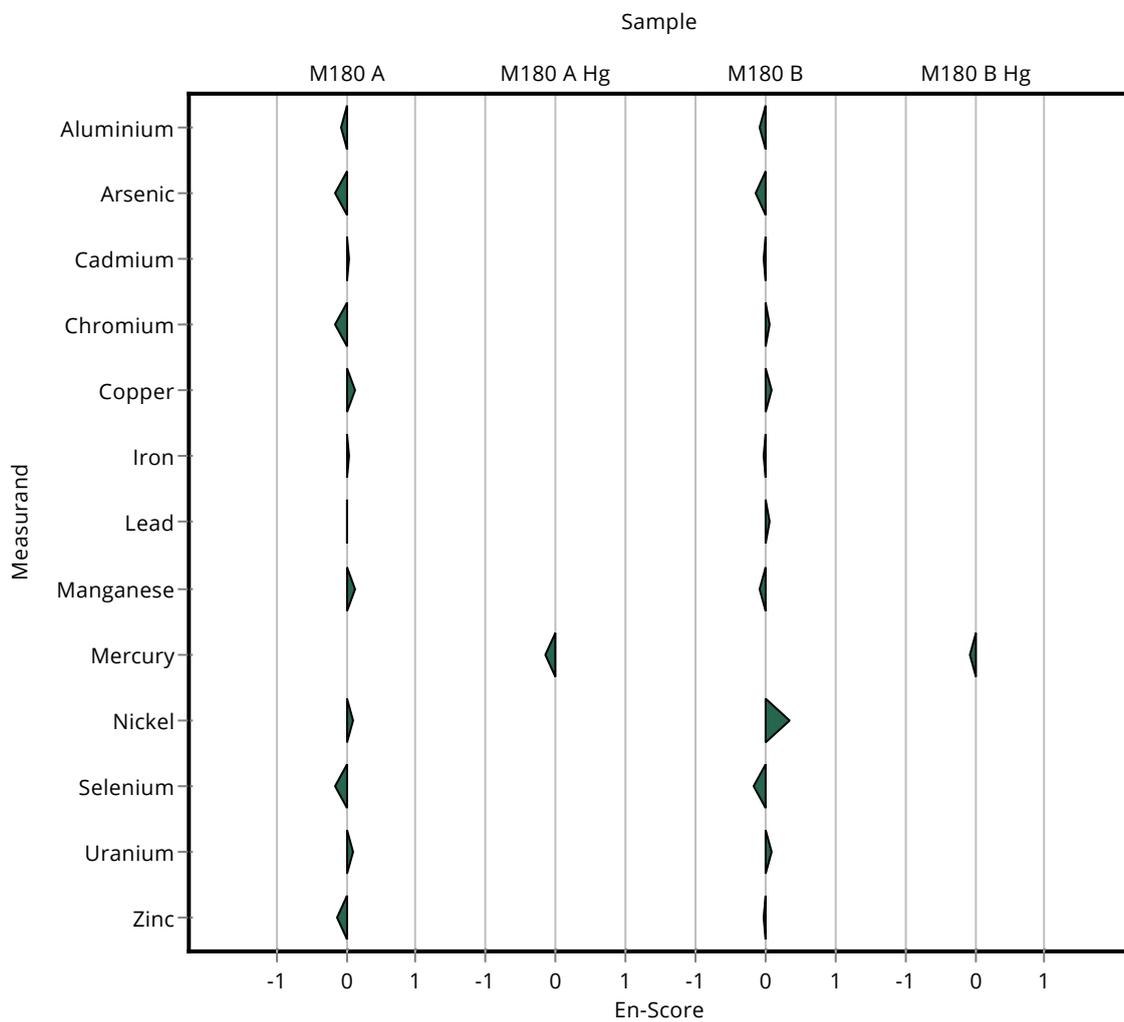
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	32 ± 4.53	3.03	105	0.55
Arsenic	µg/l	5.19 ± 0.158	- ± -	0.675	-	-
Cadmium	µg/l	0.644 ± 0.0142	- ± -	0.0644	-	-
Chromium	µg/l	2.27 ± 0.0977	- ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	- ± -	1.13	-	-
Iron	µg/l	66.6 ± 1.43	66 ± 8.53	7.33	99.1	-0.08
Lead	µg/l	2.16 ± 0.072	- ± -	0.216	-	-
Manganese	µg/l	5.53 ± 0.158	4.5 ± 0.657	0.398	81.4	-2.59
Nickel	µg/l	3.91 ± 0.113	- ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	- ± -	103	-	-

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	616 ± 87.2	61.8	99.7	-0.03
Arsenic	µg/l	87.5 ± 1.5	- ± -	11.4	-	-
Cadmium	µg/l	6.24 ± 0.127	- ± -	0.624	-	-
Chromium	µg/l	28.2 ± 0.401	- ± -	2.39	-	-
Copper	µg/l	83.1 ± 1.3	- ± -	7.48	-	-
Iron	µg/l	478 ± 9.93	436 ± 56.4	52.6	91.3	-0.80
Lead	µg/l	49.3 ± 0.959	- ± -	4.93	-	-

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	692 ± 101	54.2	91.9	-1.12
Nickel	µg/l	61 ± 1.26	- ± -	7.32	-	-
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	- ± -	69.1	-	-

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-

Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	32 ± 4.53	3.03	105	0.18
Arsenic	µg/l	5.19 ± 0.158	- ± -	0.675	-	-
Cadmium	µg/l	0.644 ± 0.0142	- ± -	0.0644	-	-
Chromium	µg/l	2.27 ± 0.0977	- ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	- ± -	1.13	-	-
Iron	µg/l	66.6 ± 1.43	66 ± 8.53	7.33	99.1	-0.04
Lead	µg/l	2.16 ± 0.072	- ± -	0.216	-	-
Manganese	µg/l	5.53 ± 0.158	4.5 ± 0.657	0.398	81.4	-0.78
Nickel	µg/l	3.91 ± 0.113	- ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	- ± -	103	-	-

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	616 ± 87.2	61.8	99.7	-0.01
Arsenic	µg/l	87.5 ± 1.5	- ± -	11.4	-	-
Cadmium	µg/l	6.24 ± 0.127	- ± -	0.624	-	-
Chromium	µg/l	28.2 ± 0.401	- ± -	2.39	-	-
Copper	µg/l	83.1 ± 1.3	- ± -	7.48	-	-
Iron	µg/l	478 ± 9.93	436 ± 56.4	52.6	91.3	-0.37
Lead	µg/l	49.3 ± 0.959	- ± -	4.93	-	-

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	692 ± 101	54.2	91.9	-0.30
Nickel	µg/l	61 ± 1.26	- ± -	7.32	-	-
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	- ± -	69.1	-	-

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-

Sample

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Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	31.6 ± 3.2	3.03	104	0.42
Arsenic	µg/l	5.19 ± 0.158	4.93 ± 0.74	0.675	94.9	-0.39
Cadmium	µg/l	0.644 ± 0.0142	0.59 ± 0.06	0.0644	91.6	-0.84
Chromium	µg/l	2.27 ± 0.0977	2.07 ± 0.21	0.213	91.2	-0.94
Copper	µg/l	12.5 ± 0.346	11.99 ± 1.2	1.13	95.8	-0.47
Iron	µg/l	66.6 ± 1.43	66.8 ± 6.7	7.33	100	0.03
Lead	µg/l	2.16 ± 0.072	2.04 ± 0.2	0.216	94.5	-0.55
Manganese	µg/l	5.53 ± 0.158	5.23 ± 0.52	0.398	94.6	-0.75
Nickel	µg/l	3.91 ± 0.113	3.7 ± 0.37	0.47	94.5	-0.45
Selenium	µg/l	4.41 ± 0.169	4.46 ± 0.67	0.529	101	0.10
Uranium	µg/l	1.2 ± 0.0488	1.15 ± 0.12	0.104	95.5	-0.52
Zinc	µg/l	1150 ± 18.1	1088 ± 109	103	94.6	-0.60

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.72 ± 0.26	0.25	96.3	-0.27

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	739 ± 74	61.8	120	1.96
Arsenic	µg/l	87.5 ± 1.5	86.4 ± 13	11.4	98.8	-0.09
Cadmium	µg/l	6.24 ± 0.127	6.43 ± 0.64	0.624	103	0.30
Chromium	µg/l	28.2 ± 0.401	28.5 ± 2.9	2.39	101	0.14
Copper	µg/l	83.1 ± 1.3	84.4 ± 8.4	7.48	102	0.18
Iron	µg/l	478 ± 9.93	469 ± 47	52.6	98.2	-0.17
Lead	µg/l	49.3 ± 0.959	47.9 ± 4.8	4.93	97.3	-0.27

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	773 ± 77	54.2	103	0.37
Nickel	µg/l	61 ± 1.26	62.8 ± 6.3	7.32	103	0.25
Selenium	µg/l	19.4 ± 0.524	20.2 ± 3	2.33	104	0.35
Uranium	µg/l	2.13 ± 0.0419	2.06 ± 0.21	0.14	96.8	-0.48
Zinc	µg/l	767 ± 23.6	762 ± 76	69.1	99.3	-0.08

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	2.75 ± 0.41	0.438	88	-0.86
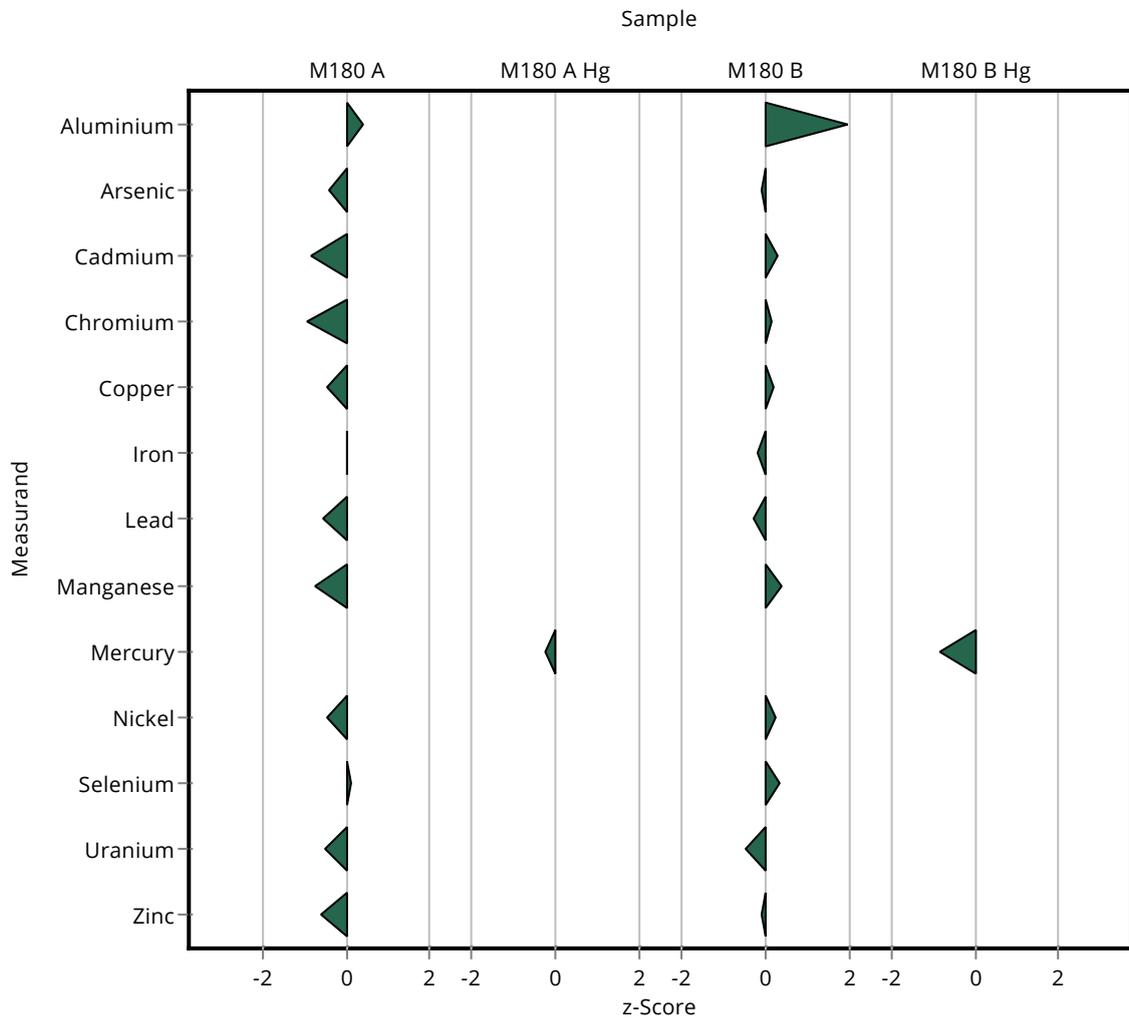
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	31.6 ± 3.2	3.03	104	0.20
Arsenic	µg/l	5.19 ± 0.158	4.93 ± 0.74	0.675	94.9	-0.18
Cadmium	µg/l	0.644 ± 0.0142	0.59 ± 0.06	0.0644	91.6	-0.45
Chromium	µg/l	2.27 ± 0.0977	2.07 ± 0.21	0.213	91.2	-0.47
Copper	µg/l	12.5 ± 0.346	11.99 ± 1.2	1.13	95.8	-0.22
Iron	µg/l	66.6 ± 1.43	66.8 ± 6.7	7.33	100	0.01
Lead	µg/l	2.16 ± 0.072	2.04 ± 0.2	0.216	94.5	-0.29
Manganese	µg/l	5.53 ± 0.158	5.23 ± 0.52	0.398	94.6	-0.28
Nickel	µg/l	3.91 ± 0.113	3.7 ± 0.37	0.47	94.5	-0.29
Selenium	µg/l	4.41 ± 0.169	4.46 ± 0.67	0.529	101	0.04
Uranium	µg/l	1.2 ± 0.0488	1.15 ± 0.12	0.104	95.5	-0.22
Zinc	µg/l	1150 ± 18.1	1088 ± 109	103	94.6	-0.28

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.72 ± 0.26	0.25	96.3	-0.13

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	739 ± 74	61.8	120	0.81
Arsenic	µg/l	87.5 ± 1.5	86.4 ± 13	11.4	98.8	-0.04
Cadmium	µg/l	6.24 ± 0.127	6.43 ± 0.64	0.624	103	0.14
Chromium	µg/l	28.2 ± 0.401	28.5 ± 2.9	2.39	101	0.06
Copper	µg/l	83.1 ± 1.3	84.4 ± 8.4	7.48	102	0.08
Iron	µg/l	478 ± 9.93	469 ± 47	52.6	98.2	-0.09
Lead	µg/l	49.3 ± 0.959	47.9 ± 4.8	4.93	97.3	-0.14

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	773 ± 77	54.2	103	0.13
Nickel	µg/l	61 ± 1.26	62.8 ± 6.3	7.32	103	0.15
Selenium	µg/l	19.4 ± 0.524	20.2 ± 3	2.33	104	0.13
Uranium	µg/l	2.13 ± 0.0419	2.06 ± 0.21	0.14	96.8	-0.16
Zinc	µg/l	767 ± 23.6	762 ± 76	69.1	99.3	-0.03

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	2.75 ± 0.41	0.438	88	-0.46
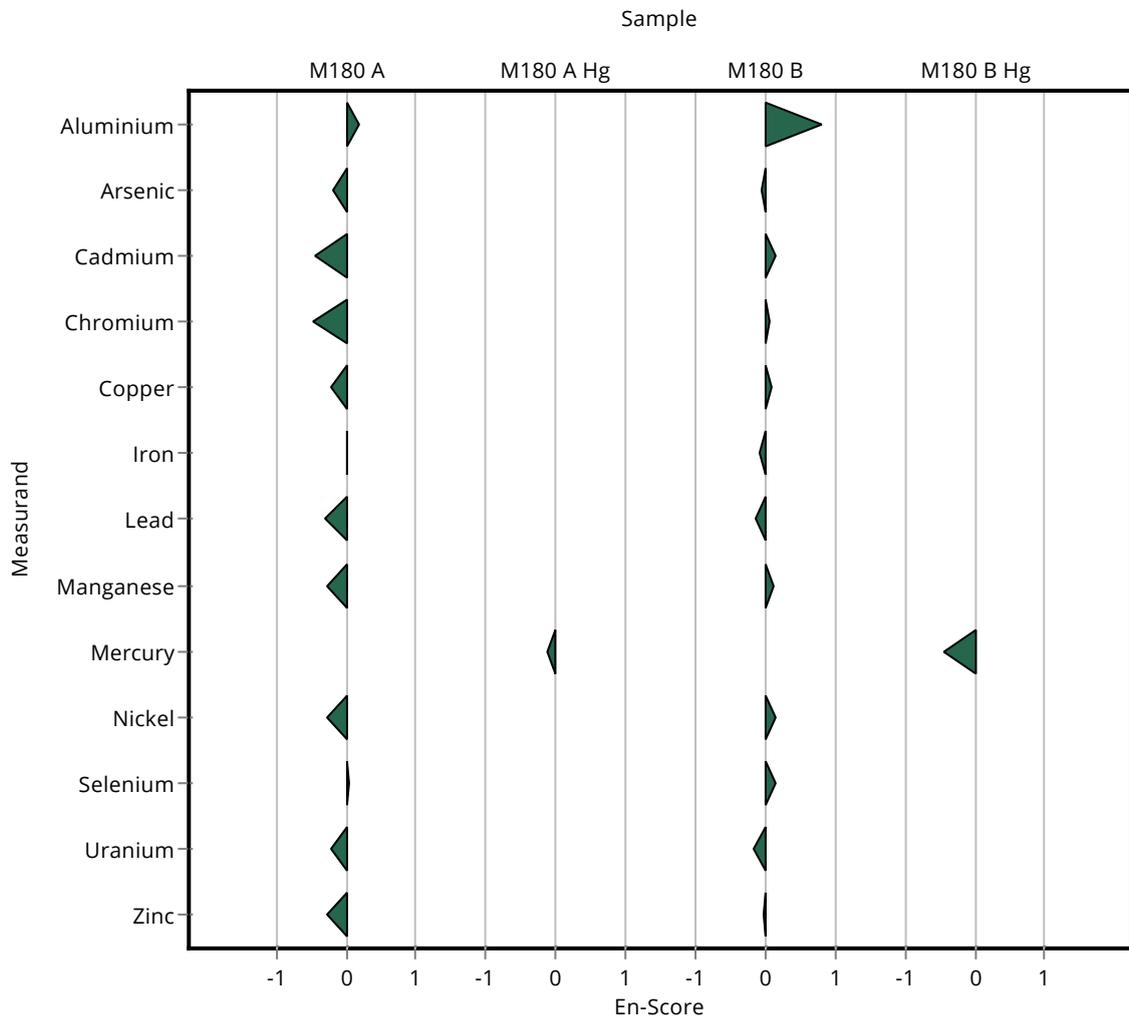
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	25.26 ± 0.586	3.03	83.3	-1.67
Arsenic	µg/l	5.19 ± 0.158	5.9 ± 0.052	0.675	114	1.05
Cadmium	µg/l	0.644 ± 0.0142	0.633 ± 0.008	0.0644	98.3	-0.17
Chromium	µg/l	2.27 ± 0.0977	4.38 ± 0.088	0.213	193	9.88
Copper	µg/l	12.5 ± 0.346	11.73 ± 0.184	1.13	93.7	-0.70
Iron	µg/l	66.6 ± 1.43	28.82 ± 1.022	7.33	43.3	-5.16
Lead	µg/l	2.16 ± 0.072	1.96 ± 0.051	0.216	90.8	-0.92
Manganese	µg/l	5.53 ± 0.158	5.63 ± 0.076	0.398	102	0.25
Nickel	µg/l	3.91 ± 0.113	6.23 ± 0.098	0.47	159	4.93
Selenium	µg/l	4.41 ± 0.169	5.26 ± 0.081	0.529	119	1.62
Uranium	µg/l	1.2 ± 0.0488	1.17 ± 0.013	0.104	97.2	-0.33
Zinc	µg/l	1150 ± 18.1	899.61 ± 14.386	103	78.2	-2.42

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	545.68 ± 1.662	61.8	88.3	-1.17
Arsenic	µg/l	87.5 ± 1.5	87.18 ± 0.449	11.4	99.7	-0.02
Cadmium	µg/l	6.24 ± 0.127	6.32 ± 0.0151	0.624	101	0.12
Chromium	µg/l	28.2 ± 0.401	26.79 ± 0.0616	2.39	95.1	-0.57
Copper	µg/l	83.1 ± 1.3	80.81 ± 0.388	7.48	97.3	-0.30
Iron	µg/l	478 ± 9.93	187.81 ± 0.887	52.6	39.3	-5.52
Lead	µg/l	49.3 ± 0.959	37.86 ± 0.381	4.93	76.9	-2.31

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	674.75 ± 1.363	54.2	89.6	-1.44
Nickel	µg/l	61 ± 1.26	55.063 ± 0.191	7.32	90.3	-0.81
Selenium	µg/l	19.4 ± 0.524	20.99 ± 0.133	2.33	108	0.69
Uranium	µg/l	2.13 ± 0.0419	2.053 ± 0.043	0.14	96.5	-0.53
Zinc	µg/l	767 ± 23.6	700.48 ± 1.171	69.1	91.3	-0.97

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-
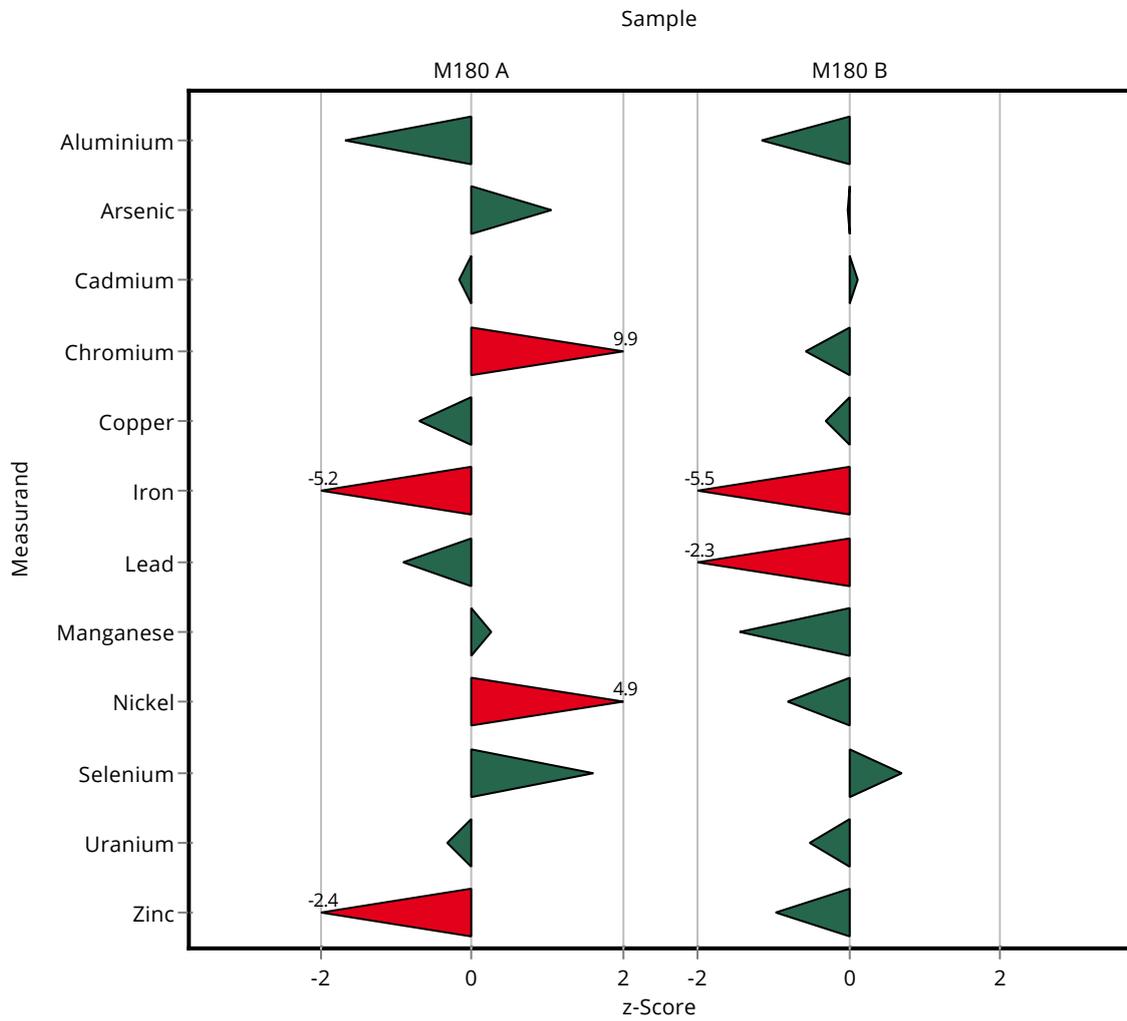
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	25.26 ± 0.586	3.03	83.3	-3.27
Arsenic	µg/l	5.19 ± 0.158	5.9 ± 0.052	0.675	114	3.74
Cadmium	µg/l	0.644 ± 0.0142	0.633 ± 0.008	0.0644	98.3	-0.51
Chromium	µg/l	2.27 ± 0.0977	4.38 ± 0.088	0.213	193	10.48
Copper	µg/l	12.5 ± 0.346	11.73 ± 0.184	1.13	93.7	-1.56
Iron	µg/l	66.6 ± 1.43	28.82 ± 1.022	7.33	43.3	-15.14
Lead	µg/l	2.16 ± 0.072	1.96 ± 0.051	0.216	90.8	-1.58
Manganese	µg/l	5.53 ± 0.158	5.63 ± 0.076	0.398	102	0.46
Nickel	µg/l	3.91 ± 0.113	6.23 ± 0.098	0.47	159	10.24
Selenium	µg/l	4.41 ± 0.169	5.26 ± 0.081	0.529	119	3.64
Uranium	µg/l	1.2 ± 0.0488	1.17 ± 0.013	0.104	97.2	-0.61
Zinc	µg/l	1150 ± 18.1	899.61 ± 14.386	103	78.2	-7.36

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	545.68 ± 1.662	61.8	88.3	-3.69
Arsenic	µg/l	87.5 ± 1.5	87.18 ± 0.449	11.4	99.7	-0.16
Cadmium	µg/l	6.24 ± 0.127	6.32 ± 0.0151	0.624	101	0.58
Chromium	µg/l	28.2 ± 0.401	26.79 ± 0.0616	2.39	95.1	-3.26
Copper	µg/l	83.1 ± 1.3	80.81 ± 0.388	7.48	97.3	-1.49
Iron	µg/l	478 ± 9.93	187.81 ± 0.887	52.6	39.3	-28.74
Lead	µg/l	49.3 ± 0.959	37.86 ± 0.381	4.93	76.9	-9.30

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	674.75 ± 1.363	54.2	89.6	-5.59
Nickel	µg/l	61 ± 1.26	55.063 ± 0.191	7.32	90.3	-4.49
Selenium	µg/l	19.4 ± 0.524	20.99 ± 0.133	2.33	108	2.72
Uranium	µg/l	2.13 ± 0.0419	2.053 ± 0.043	0.14	96.5	-0.78
Zinc	µg/l	767 ± 23.6	700.48 ± 1.171	69.1	91.3	-2.83

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-
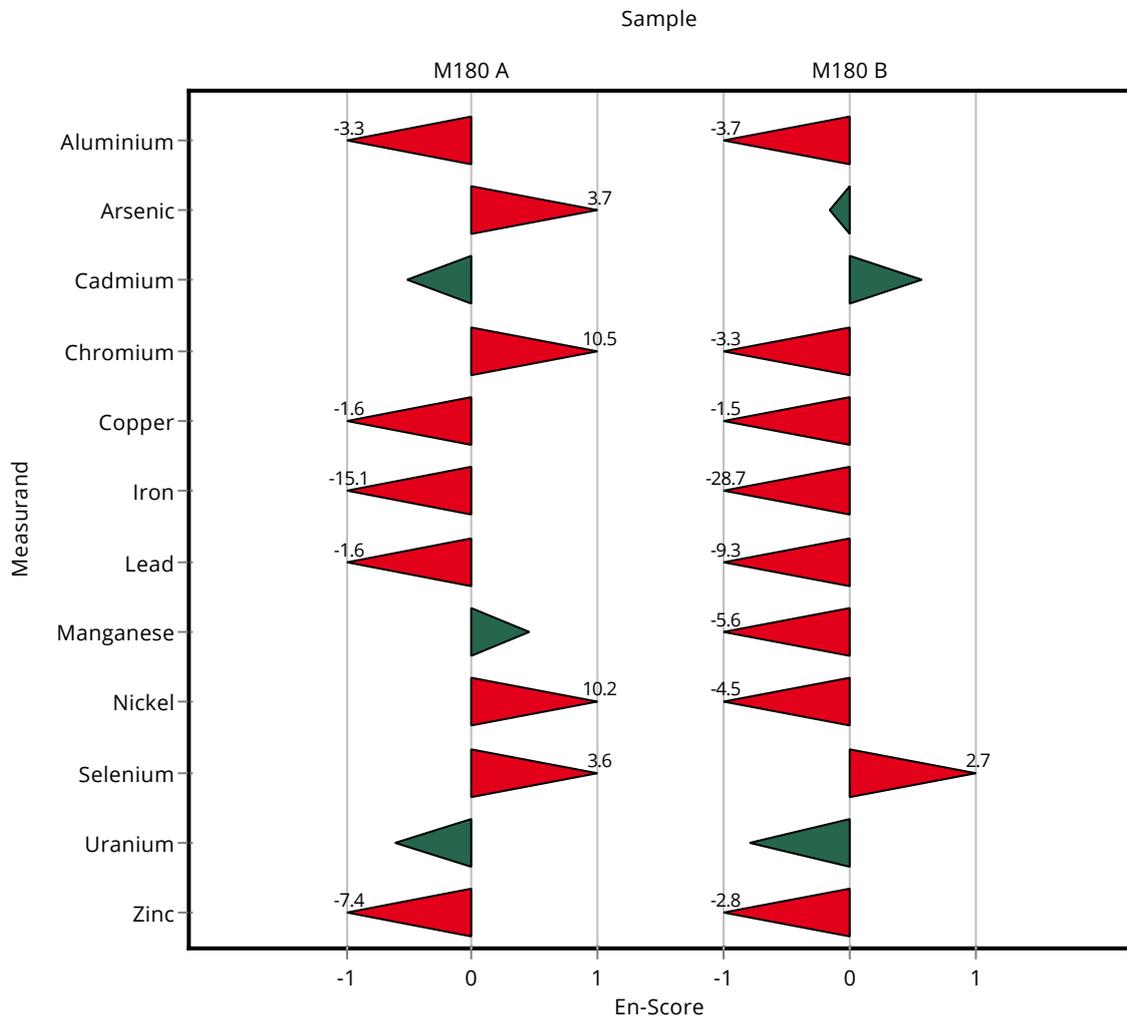
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	31.349 ± 3.135	3.03	103	0.33
Arsenic	µg/l	5.19 ± 0.158	4.427 ± 0.443	0.675	85.3	-1.13
Cadmium	µg/l	0.644 ± 0.0142	0.699 ± 0.072	0.0644	109	0.85
Chromium	µg/l	2.27 ± 0.0977	2.246 ± 0.225	0.213	98.9	-0.12
Copper	µg/l	12.5 ± 0.346	13.199 ± 1.32	1.13	105	0.61
Iron	µg/l	66.6 ± 1.43	51.05 ± 5.105	7.33	76.6	-2.12
Lead	µg/l	2.16 ± 0.072	1.904 ± 0.19	0.216	88.2	-1.18
Manganese	µg/l	5.53 ± 0.158	5.822 ± 0.582	0.398	105	0.73
Nickel	µg/l	3.91 ± 0.113	5.37 ± 0.537	0.47	137	3.10
Selenium	µg/l	4.41 ± 0.169	3.1479 ± 0.315	0.529	71.5	-2.38
Uranium	µg/l	1.2 ± 0.0488	1.032 ± 0.103	0.104	85.7	-1.66
Zinc	µg/l	1150 ± 18.1	1139.568 ± 113.957	103	99.1	-0.10

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	2.147 ± 0.215	0.25	120	1.44

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	699.034 ± 69.903	61.8	113	1.31
Arsenic	µg/l	87.5 ± 1.5	80.044 ± 8.004	11.4	91.5	-0.65
Cadmium	µg/l	6.24 ± 0.127	6.516 ± 0.652	0.624	104	0.43
Chromium	µg/l	28.2 ± 0.401	28.856 ± 2.886	2.39	102	0.29
Copper	µg/l	83.1 ± 1.3	84.879 ± 8.488	7.48	102	0.24
Iron	µg/l	478 ± 9.93	467.732 ± 46.773	52.6	97.9	-0.19
Lead	µg/l	49.3 ± 0.959	45.866 ± 4.587	4.93	93.1	-0.69

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	761.676 ± 76.168	54.2	101	0.16
Nickel	µg/l	61 ± 1.26	62.869 ± 6.287	7.32	103	0.26
Selenium	µg/l	19.4 ± 0.524	16.846 ± 1.685	2.33	86.9	-1.09
Uranium	µg/l	2.13 ± 0.0419	1.959 ± 0.196	0.14	92.1	-1.20
Zinc	µg/l	767 ± 23.6	791.523 ± 79.152	69.1	103	0.35

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.523 ± 0.352	0.438	113	0.91
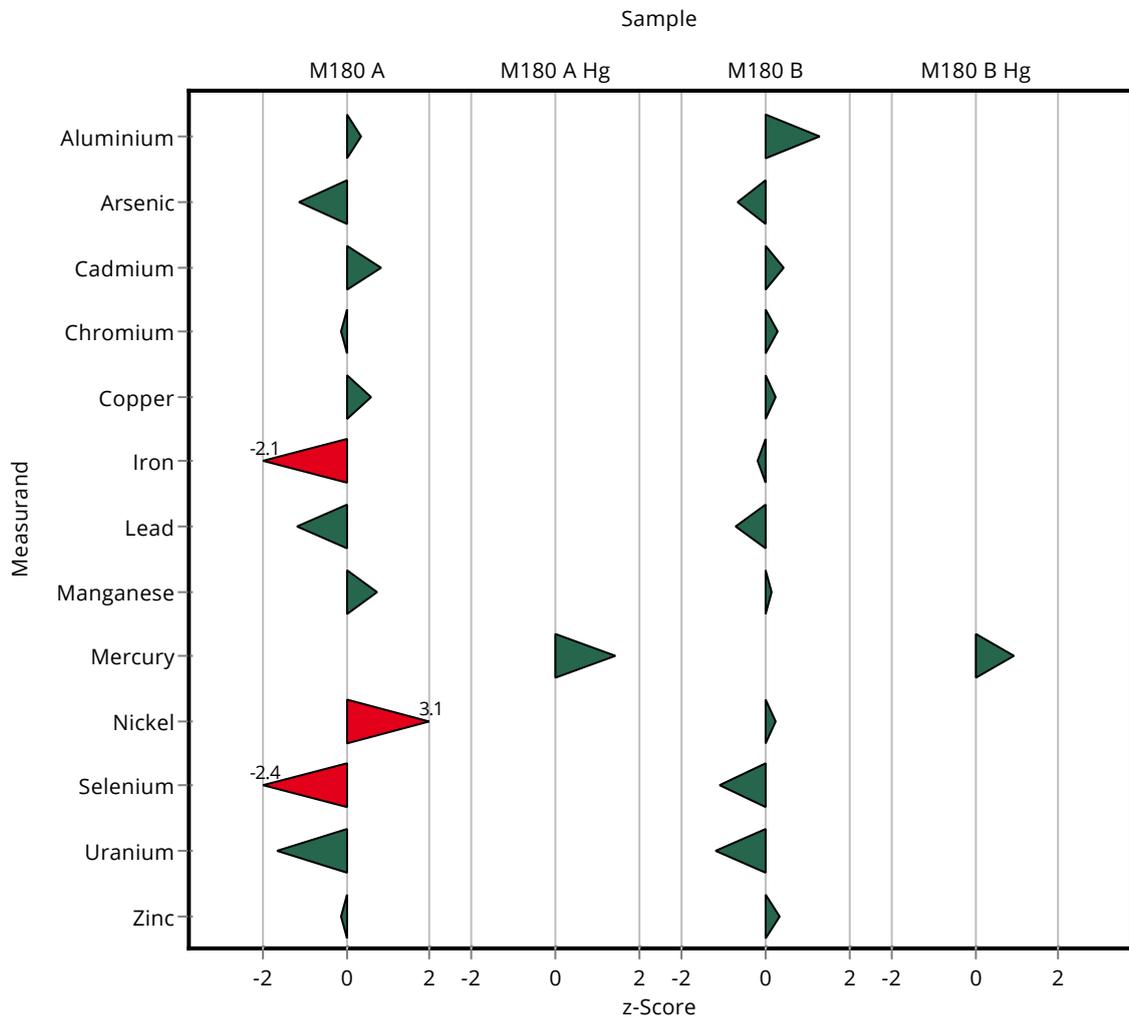
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	31.349 ± 3.135	3.03	103	0.16
Arsenic	µg/l	5.19 ± 0.158	4.427 ± 0.443	0.675	85.3	-0.85
Cadmium	µg/l	0.644 ± 0.0142	0.699 ± 0.072	0.0644	109	0.38
Chromium	µg/l	2.27 ± 0.0977	2.246 ± 0.225	0.213	98.9	-0.05
Copper	µg/l	12.5 ± 0.346	13.199 ± 1.32	1.13	105	0.26
Iron	µg/l	66.6 ± 1.43	51.05 ± 5.105	7.33	76.6	-1.51
Lead	µg/l	2.16 ± 0.072	1.904 ± 0.19	0.216	88.2	-0.66
Manganese	µg/l	5.53 ± 0.158	5.822 ± 0.582	0.398	105	0.25
Nickel	µg/l	3.91 ± 0.113	5.37 ± 0.537	0.47	137	1.35
Selenium	µg/l	4.41 ± 0.169	3.1479 ± 0.315	0.529	71.5	-1.93
Uranium	µg/l	1.2 ± 0.0488	1.032 ± 0.103	0.104	85.7	-0.81
Zinc	µg/l	1150 ± 18.1	1139.568 ± 113.957	103	99.1	-0.05

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	2.147 ± 0.215	0.25	120	0.83

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	699.034 ± 69.903	61.8	113	0.57
Arsenic	µg/l	87.5 ± 1.5	80.044 ± 8.004	11.4	91.5	-0.46
Cadmium	µg/l	6.24 ± 0.127	6.516 ± 0.652	0.624	104	0.21
Chromium	µg/l	28.2 ± 0.401	28.856 ± 2.886	2.39	102	0.12
Copper	µg/l	83.1 ± 1.3	84.879 ± 8.488	7.48	102	0.11
Iron	µg/l	478 ± 9.93	467.732 ± 46.773	52.6	97.9	-0.11
Lead	µg/l	49.3 ± 0.959	45.866 ± 4.587	4.93	93.1	-0.37

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	761.676 ± 76.168	54.2	101	0.06
Nickel	µg/l	61 ± 1.26	62.869 ± 6.287	7.32	103	0.15
Selenium	µg/l	19.4 ± 0.524	16.846 ± 1.685	2.33	86.9	-0.75
Uranium	µg/l	2.13 ± 0.0419	1.959 ± 0.196	0.14	92.1	-0.43
Zinc	µg/l	767 ± 23.6	791.523 ± 79.152	69.1	103	0.15

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.523 ± 0.352	0.438	113	0.56
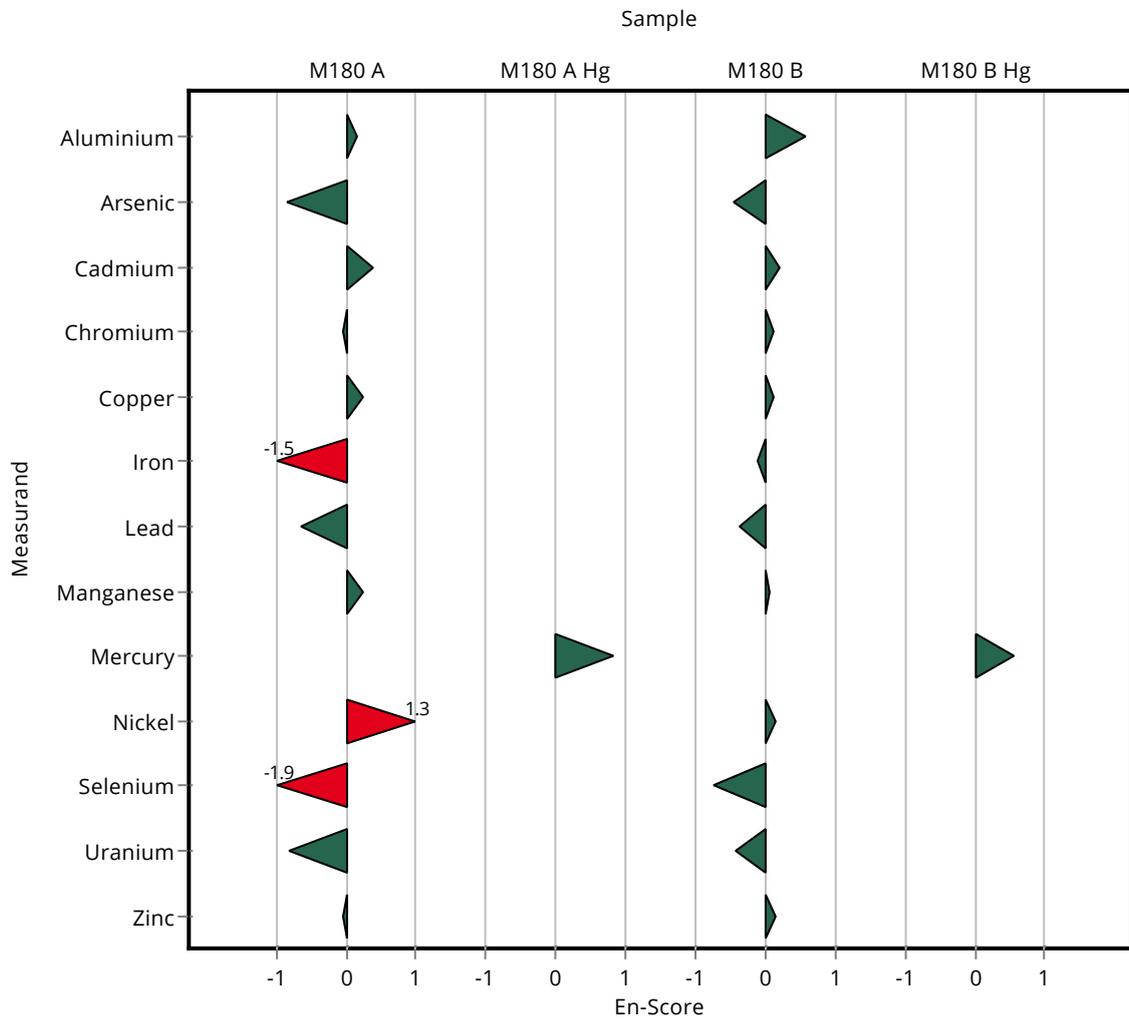
Summary of results Metals and trace elements M180

Labcode: LC0019

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	31.3 ± 4.7	3.03	103	0.32
Arsenic	µg/l	5.19 ± 0.158	4.9 ± 0.7	0.675	94.4	-0.43
Cadmium	µg/l	0.644 ± 0.0142	0.7 ± 0.1	0.0644	109	0.87
Chromium	µg/l	2.27 ± 0.0977	2.1 ± 0.3	0.213	92.5	-0.80
Copper	µg/l	12.5 ± 0.346	12.3 ± 1.8	1.13	98.3	-0.19
Iron	µg/l	66.6 ± 1.43	66.9 ± 10	7.33	100	0.04
Lead	µg/l	2.16 ± 0.072	2.2 ± 0.3	0.216	102	0.20
Manganese	µg/l	5.53 ± 0.158	5.5 ± 0.8	0.398	99.5	-0.07
Nickel	µg/l	3.91 ± 0.113	3.9 ± 0.6	0.47	99.7	-0.03
Selenium	µg/l	4.41 ± 0.169	4.6 ± 0.7	0.529	104	0.37
Uranium	µg/l	1.2 ± 0.0488	1.1 ± 0.2	0.104	91.4	-1.00
Zinc	µg/l	1150 ± 18.1	1147 ± 172.1	103	99.7	-0.03

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.7 ± 0.3	0.25	95.1	-0.35

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	623 ± 93.5	61.8	101	0.08
Arsenic	µg/l	87.5 ± 1.5	86.6 ± 13	11.4	99	-0.08
Cadmium	µg/l	6.24 ± 0.127	6.4 ± 1	0.624	102	0.25
Chromium	µg/l	28.2 ± 0.401	28.4 ± 4.3	2.39	101	0.10
Copper	µg/l	83.1 ± 1.3	84.1 ± 12.6	7.48	101	0.14
Iron	µg/l	478 ± 9.93	487 ± 73.1	52.6	102	0.18
Lead	µg/l	49.3 ± 0.959	48.2 ± 7.2	4.93	97.9	-0.21

M180 Ausgabe/Edition 1 - 12.03.2026

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Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	757 ± 113.6	54.2	101	0.08
Nickel	µg/l	61 ± 1.26	63.6 ± 9.5	7.32	104	0.36
Selenium	µg/l	19.4 ± 0.524	20 ± 3	2.33	103	0.26
Uranium	µg/l	2.13 ± 0.0419	2 ± 0.3	0.14	94	-0.91
Zinc	µg/l	767 ± 23.6	801 ± 120.2	69.1	104	0.49

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.2 ± 0.5	0.438	102	0.17
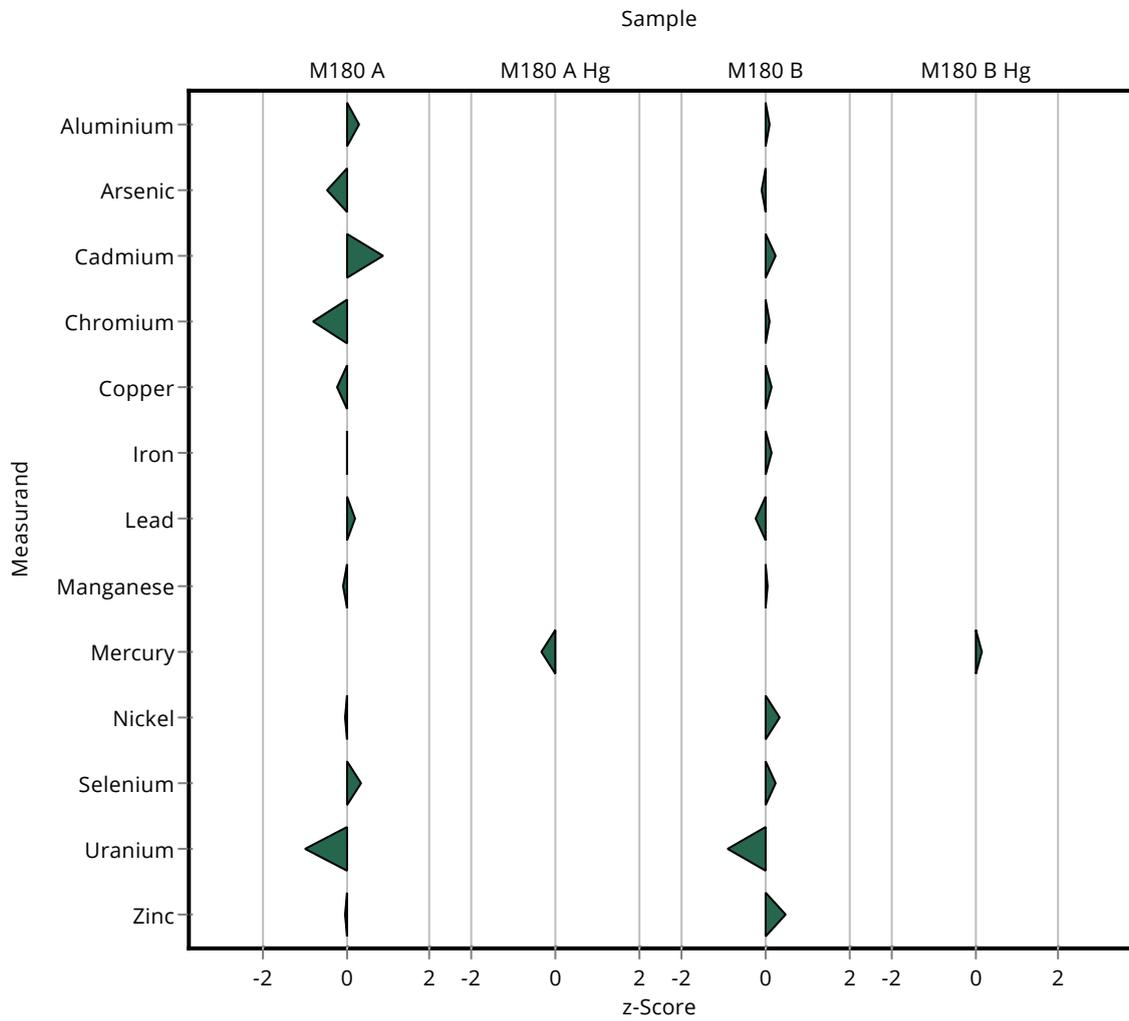
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	31.3 ± 4.7	3.03	103	0.10
Arsenic	µg/l	5.19 ± 0.158	4.9 ± 0.7	0.675	94.4	-0.21
Cadmium	µg/l	0.644 ± 0.0142	0.7 ± 0.1	0.0644	109	0.28
Chromium	µg/l	2.27 ± 0.0977	2.1 ± 0.3	0.213	92.5	-0.28
Copper	µg/l	12.5 ± 0.346	12.3 ± 1.8	1.13	98.3	-0.06
Iron	µg/l	66.6 ± 1.43	66.9 ± 10	7.33	100	0.01
Lead	µg/l	2.16 ± 0.072	2.2 ± 0.3	0.216	102	0.07
Manganese	µg/l	5.53 ± 0.158	5.5 ± 0.8	0.398	99.5	-0.02
Nickel	µg/l	3.91 ± 0.113	3.9 ± 0.6	0.47	99.7	-0.01
Selenium	µg/l	4.41 ± 0.169	4.6 ± 0.7	0.529	104	0.14
Uranium	µg/l	1.2 ± 0.0488	1.1 ± 0.2	0.104	91.4	-0.26
Zinc	µg/l	1150 ± 18.1	1147 ± 172.1	103	99.7	-0.01

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.7 ± 0.3	0.25	95.1	-0.14

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	623 ± 93.5	61.8	101	0.03
Arsenic	µg/l	87.5 ± 1.5	86.6 ± 13	11.4	99	-0.03
Cadmium	µg/l	6.24 ± 0.127	6.4 ± 1	0.624	102	0.08
Chromium	µg/l	28.2 ± 0.401	28.4 ± 4.3	2.39	101	0.03
Copper	µg/l	83.1 ± 1.3	84.1 ± 12.6	7.48	101	0.04
Iron	µg/l	478 ± 9.93	487 ± 73.1	52.6	102	0.06
Lead	µg/l	49.3 ± 0.959	48.2 ± 7.2	4.93	97.9	-0.07

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	757 ± 113.6	54.2	101	0.02
Nickel	µg/l	61 ± 1.26	63.6 ± 9.5	7.32	104	0.14
Selenium	µg/l	19.4 ± 0.524	20 ± 3	2.33	103	0.10
Uranium	µg/l	2.13 ± 0.0419	2 ± 0.3	0.14	94	-0.21
Zinc	µg/l	767 ± 23.6	801 ± 120.2	69.1	104	0.14

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.2 ± 0.5	0.438	102	0.07
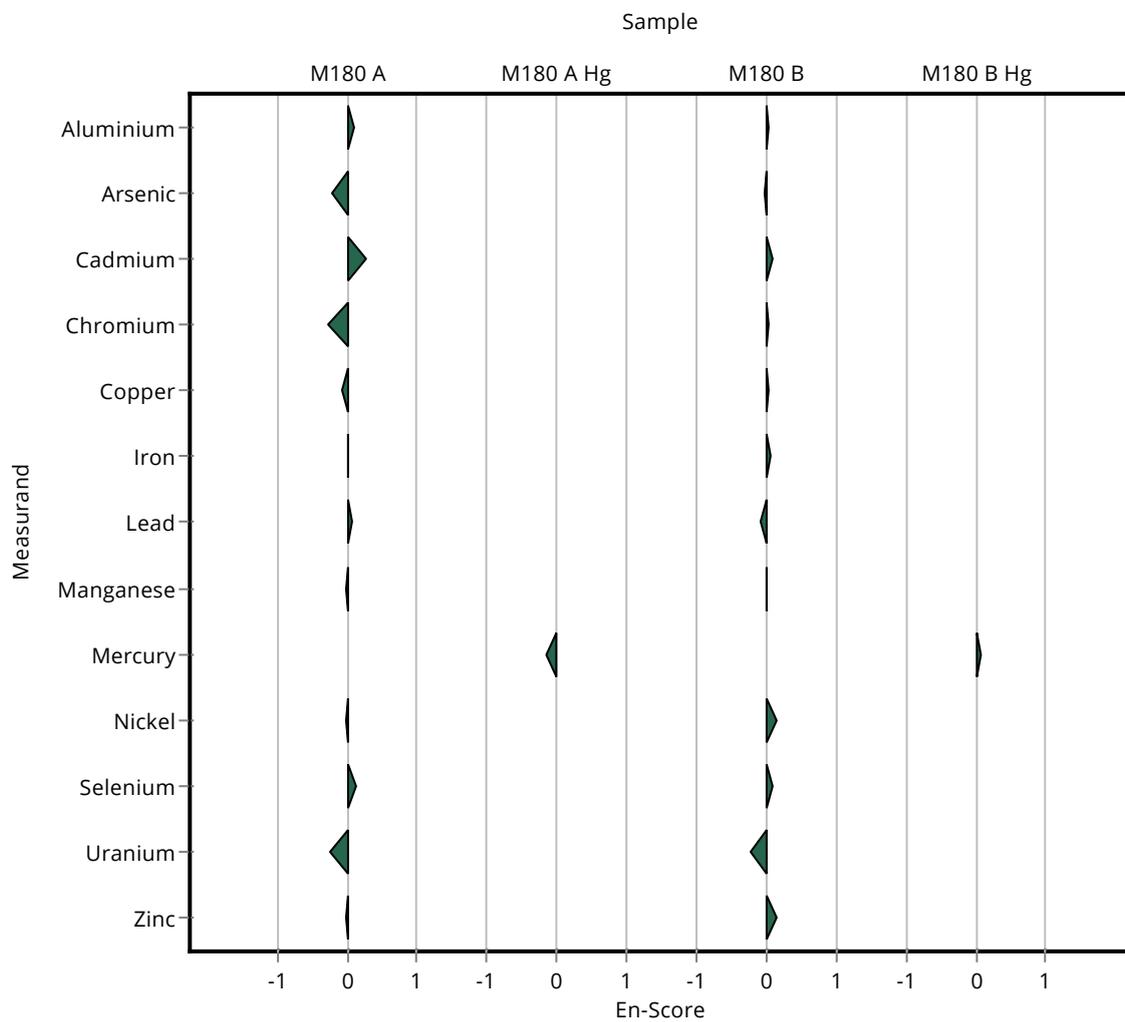
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	5.714 ± 0.4	0.675	110	0.77
Cadmium	µg/l	0.644 ± 0.0142	0.644 ± 0.0451	0.0644	100	0.00
Chromium	µg/l	2.27 ± 0.0977	2.67 ± 0.1762	0.213	118	1.87
Copper	µg/l	12.5 ± 0.346	12.621 ± 1.4009	1.13	101	0.09
Iron	µg/l	66.6 ± 1.43	- ± -	7.33	-	-
Lead	µg/l	2.16 ± 0.072	1.894 ± 0.142	0.216	87.8	-1.22
Manganese	µg/l	5.53 ± 0.158	- ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	4.262 ± 0.2387	0.47	109	0.74
Selenium	µg/l	4.41 ± 0.169	4.106 ± 0.505	0.529	93.2	-0.57
Uranium	µg/l	1.2 ± 0.0488	0.976 ± 0.2	0.104	81.1	-2.20
Zinc	µg/l	1150 ± 18.1	1194.095 ± 160.0087	103	104	0.43

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.907 ± 0.288	0.25	107	0.48

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	92.76 ± 6.4932	11.4	106	0.47
Cadmium	µg/l	6.24 ± 0.127	6.215 ± 0.4351	0.624	99.5	-0.05
Chromium	µg/l	28.2 ± 0.401	32.335 ± 2.1341	2.39	115	1.74
Copper	µg/l	83.1 ± 1.3	82.476 ± 9.1548	7.48	99.3	-0.08
Iron	µg/l	478 ± 9.93	- ± -	52.6	-	-
Lead	µg/l	49.3 ± 0.959	47.65 ± 3.5738	4.93	96.7	-0.33

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	- ± -	54.2	-	-
Nickel	µg/l	61 ± 1.26	64.639 ± 3.6198	7.32	106	0.50
Selenium	µg/l	19.4 ± 0.524	18.197 ± 2.2382	2.33	93.9	-0.51
Uranium	µg/l	2.13 ± 0.0419	1.98 ± 0.4059	0.14	93	-1.05
Zinc	µg/l	767 ± 23.6	829.494 ± 111.1522	69.1	108	0.90

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.313 ± 0.5003	0.438	106	0.43
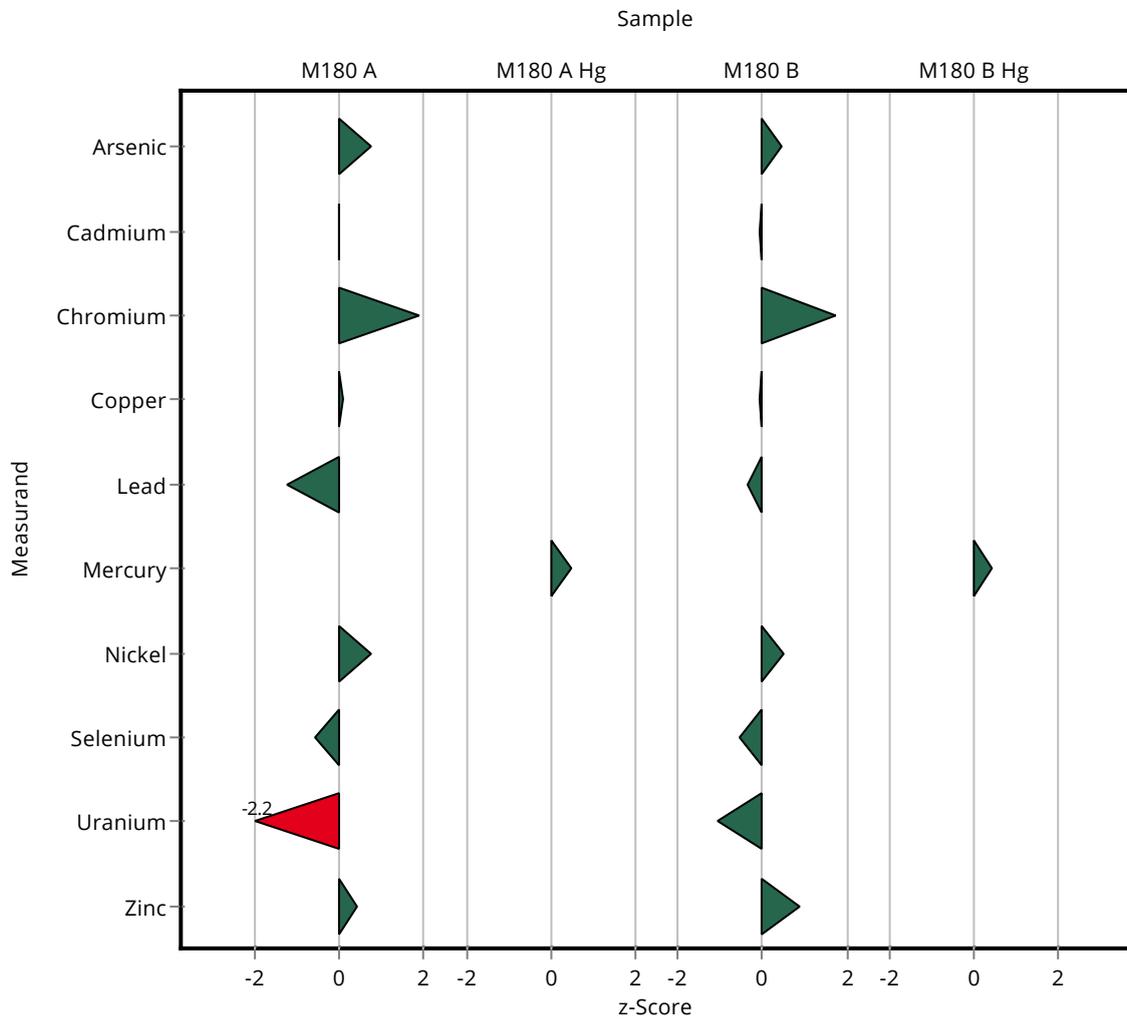
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	5.714 ± 0.4	0.675	110	0.64
Cadmium	µg/l	0.644 ± 0.0142	0.644 ± 0.0451	0.0644	100	0.00
Chromium	µg/l	2.27 ± 0.0977	2.67 ± 0.1762	0.213	118	1.09
Copper	µg/l	12.5 ± 0.346	12.621 ± 1.4009	1.13	101	0.04
Iron	µg/l	66.6 ± 1.43	- ± -	7.33	-	-
Lead	µg/l	2.16 ± 0.072	1.894 ± 0.142	0.216	87.8	-0.90
Manganese	µg/l	5.53 ± 0.158	- ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	4.262 ± 0.2387	0.47	109	0.71
Selenium	µg/l	4.41 ± 0.169	4.106 ± 0.505	0.529	93.2	-0.29
Uranium	µg/l	1.2 ± 0.0488	0.976 ± 0.2	0.104	81.1	-0.57
Zinc	µg/l	1150 ± 18.1	1194.095 ± 160.0087	103	104	0.14

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.907 ± 0.288	0.25	107	0.21

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	92.76 ± 6.4932	11.4	106	0.41
Cadmium	µg/l	6.24 ± 0.127	6.215 ± 0.4351	0.624	99.5	-0.03
Chromium	µg/l	28.2 ± 0.401	32.335 ± 2.1341	2.39	115	0.97
Copper	µg/l	83.1 ± 1.3	82.476 ± 9.1548	7.48	99.3	-0.03
Iron	µg/l	478 ± 9.93	- ± -	52.6	-	-
Lead	µg/l	49.3 ± 0.959	47.65 ± 3.5738	4.93	96.7	-0.22

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	- ± -	54.2	-	-
Nickel	µg/l	61 ± 1.26	64.639 ± 3.6198	7.32	106	0.50
Selenium	µg/l	19.4 ± 0.524	18.197 ± 2.2382	2.33	93.9	-0.26
Uranium	µg/l	2.13 ± 0.0419	1.98 ± 0.4059	0.14	93	-0.18
Zinc	µg/l	767 ± 23.6	829.494 ± 111.1522	69.1	108	0.28

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.313 ± 0.5003	0.438	106	0.19
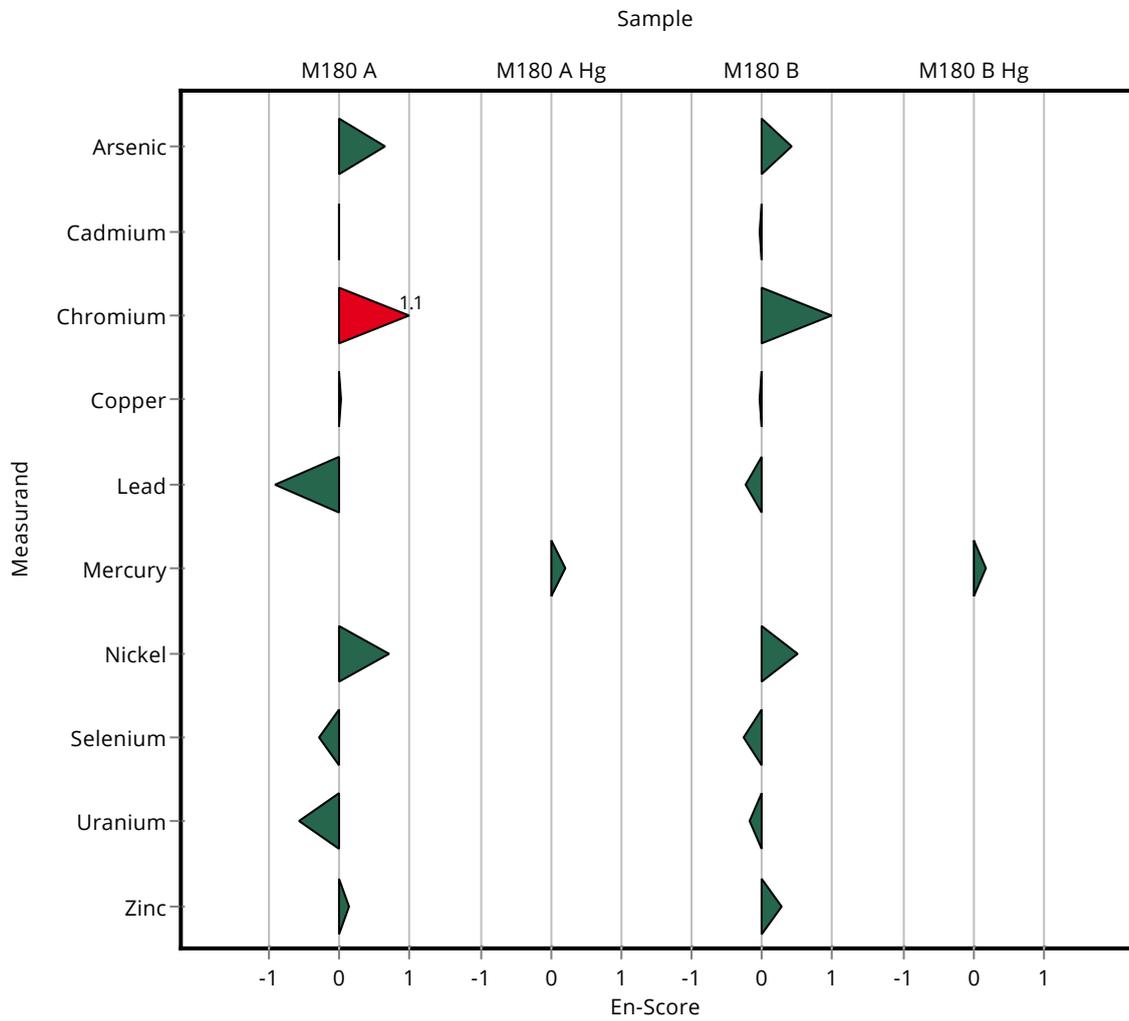
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	33 ± 4.95	3.03	109	0.88
Arsenic	µg/l	5.19 ± 0.158	5.4 ± 0.81	0.675	104	0.31
Cadmium	µg/l	0.644 ± 0.0142	0.67 ± 0.1005	0.0644	104	0.40
Chromium	µg/l	2.27 ± 0.0977	2.4 ± 0.36	0.213	106	0.61
Copper	µg/l	12.5 ± 0.346	13.2 ± 1.98	1.13	105	0.61
Iron	µg/l	66.6 ± 1.43	69 ± 17.94	7.33	104	0.33
Lead	µg/l	2.16 ± 0.072	2.4 ± 0.36	0.216	111	1.12
Manganese	µg/l	5.53 ± 0.158	6 ± 0.6	0.398	109	1.18
Nickel	µg/l	3.91 ± 0.113	4.1 ± 0.615	0.47	105	0.40
Selenium	µg/l	4.41 ± 0.169	4.52 ± 0.678	0.529	103	0.22
Uranium	µg/l	1.2 ± 0.0488	1.26 ± 0.189	0.104	105	0.54
Zinc	µg/l	1150 ± 18.1	1189 ± 178.35	103	103	0.38

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.794 ± 0.269	0.25	100	0.03

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	631 ± 94.65	61.8	102	0.21
Arsenic	µg/l	87.5 ± 1.5	86.3 ± 12.95	11.4	98.7	-0.10
Cadmium	µg/l	6.24 ± 0.127	6.42 ± 0.963	0.624	103	0.28
Chromium	µg/l	28.2 ± 0.401	29 ± 4.35	2.39	103	0.35
Copper	µg/l	83.1 ± 1.3	84 ± 12.6	7.48	101	0.13
Iron	µg/l	478 ± 9.93	499 ± 129.7	52.6	104	0.40
Lead	µg/l	49.3 ± 0.959	53.6 ± 8.04	4.93	109	0.88

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	746 ± 74.6	54.2	99.1	-0.13
Nickel	µg/l	61 ± 1.26	62.3 ± 9.345	7.32	102	0.18
Selenium	µg/l	19.4 ± 0.524	19.93 ± 2.99	2.33	103	0.23
Uranium	µg/l	2.13 ± 0.0419	2.22 ± 0.333	0.14	104	0.66
Zinc	µg/l	767 ± 23.6	771 ± 116	69.1	100	0.05

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.28 ± 0.492	0.438	105	0.35
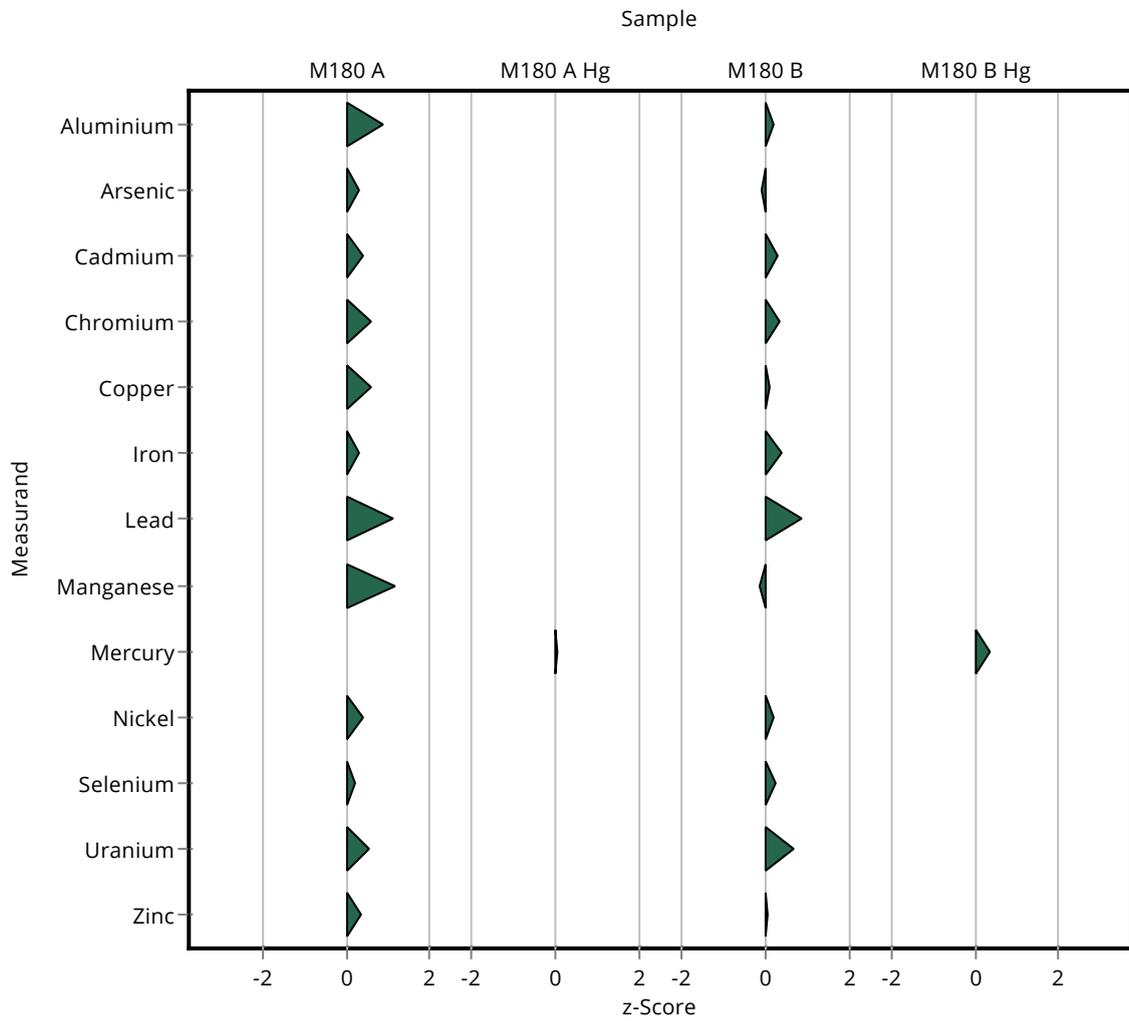
Summary of results Metals and trace elements M180 - En-Score   Labcode: LC0021

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	33 ± 4.95	3.03	109	0.27
Arsenic	µg/l	5.19 ± 0.158	5.4 ± 0.81	0.675	104	0.13
Cadmium	µg/l	0.644 ± 0.0142	0.67 ± 0.1005	0.0644	104	0.13
Chromium	µg/l	2.27 ± 0.0977	2.4 ± 0.36	0.213	106	0.18
Copper	µg/l	12.5 ± 0.346	13.2 ± 1.98	1.13	105	0.17
Iron	µg/l	66.6 ± 1.43	69 ± 17.94	7.33	104	0.07
Lead	µg/l	2.16 ± 0.072	2.4 ± 0.36	0.216	111	0.33
Manganese	µg/l	5.53 ± 0.158	6 ± 0.6	0.398	109	0.39
Nickel	µg/l	3.91 ± 0.113	4.1 ± 0.615	0.47	105	0.15
Selenium	µg/l	4.41 ± 0.169	4.52 ± 0.678	0.529	103	0.08
Uranium	µg/l	1.2 ± 0.0488	1.26 ± 0.189	0.104	105	0.15
Zinc	µg/l	1150 ± 18.1	1189 ± 178.35	103	103	0.11

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.794 ± 0.269	0.25	100	0.01

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	631 ± 94.65	61.8	102	0.07
Arsenic	µg/l	87.5 ± 1.5	86.3 ± 12.95	11.4	98.7	-0.04
Cadmium	µg/l	6.24 ± 0.127	6.42 ± 0.963	0.624	103	0.09
Chromium	µg/l	28.2 ± 0.401	29 ± 4.35	2.39	103	0.10
Copper	µg/l	83.1 ± 1.3	84 ± 12.6	7.48	101	0.04
Iron	µg/l	478 ± 9.93	499 ± 129.7	52.6	104	0.08
Lead	µg/l	49.3 ± 0.959	53.6 ± 8.04	4.93	109	0.27

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	746 ± 74.6	54.2	99.1	-0.05
Nickel	µg/l	61 ± 1.26	62.3 ± 9.345	7.32	102	0.07
Selenium	µg/l	19.4 ± 0.524	19.93 ± 2.99	2.33	103	0.09
Uranium	µg/l	2.13 ± 0.0419	2.22 ± 0.333	0.14	104	0.14
Zinc	µg/l	767 ± 23.6	771 ± 116	69.1	100	0.02

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.28 ± 0.492	0.438	105	0.16
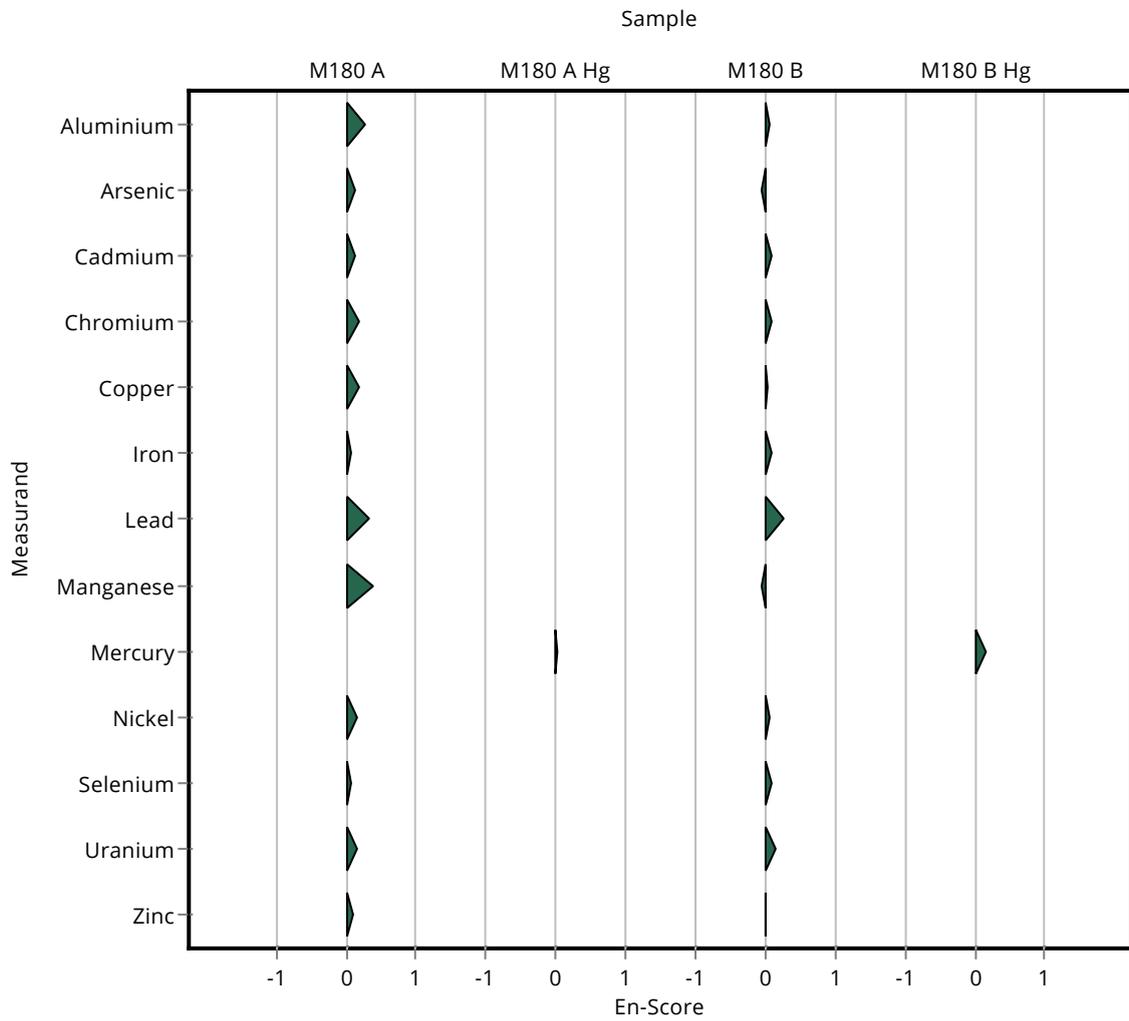
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	- ± -	0.675	-	-
Cadmium	µg/l	0.644 ± 0.0142	0.66 ± 0.018	0.0644	102	0.25
Chromium	µg/l	2.27 ± 0.0977	- ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	13.1 ± 0.77	1.13	105	0.52
Iron	µg/l	66.6 ± 1.43	69.5 ± 3.1	7.33	104	0.40
Lead	µg/l	2.16 ± 0.072	2.18 ± 0.11	0.216	101	0.10
Manganese	µg/l	5.53 ± 0.158	- ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	- ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1126 ± 49.5	103	97.9	-0.23

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	- ± -	11.4	-	-
Cadmium	µg/l	6.24 ± 0.127	6.16 ± 0.17	0.624	98.6	-0.14
Chromium	µg/l	28.2 ± 0.401	- ± -	2.39	-	-
Copper	µg/l	83.1 ± 1.3	83.3 ± 4.9	7.48	100	0.03
Iron	µg/l	478 ± 9.93	481 ± 2.2	52.6	101	0.06
Lead	µg/l	49.3 ± 0.959	48.7 ± 2.5	4.93	98.9	-0.11

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	- ± -	54.2	-	-
Nickel	µg/l	61 ± 1.26	- ± -	7.32	-	-
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	720 ± 31.7	69.1	93.8	-0.69

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-
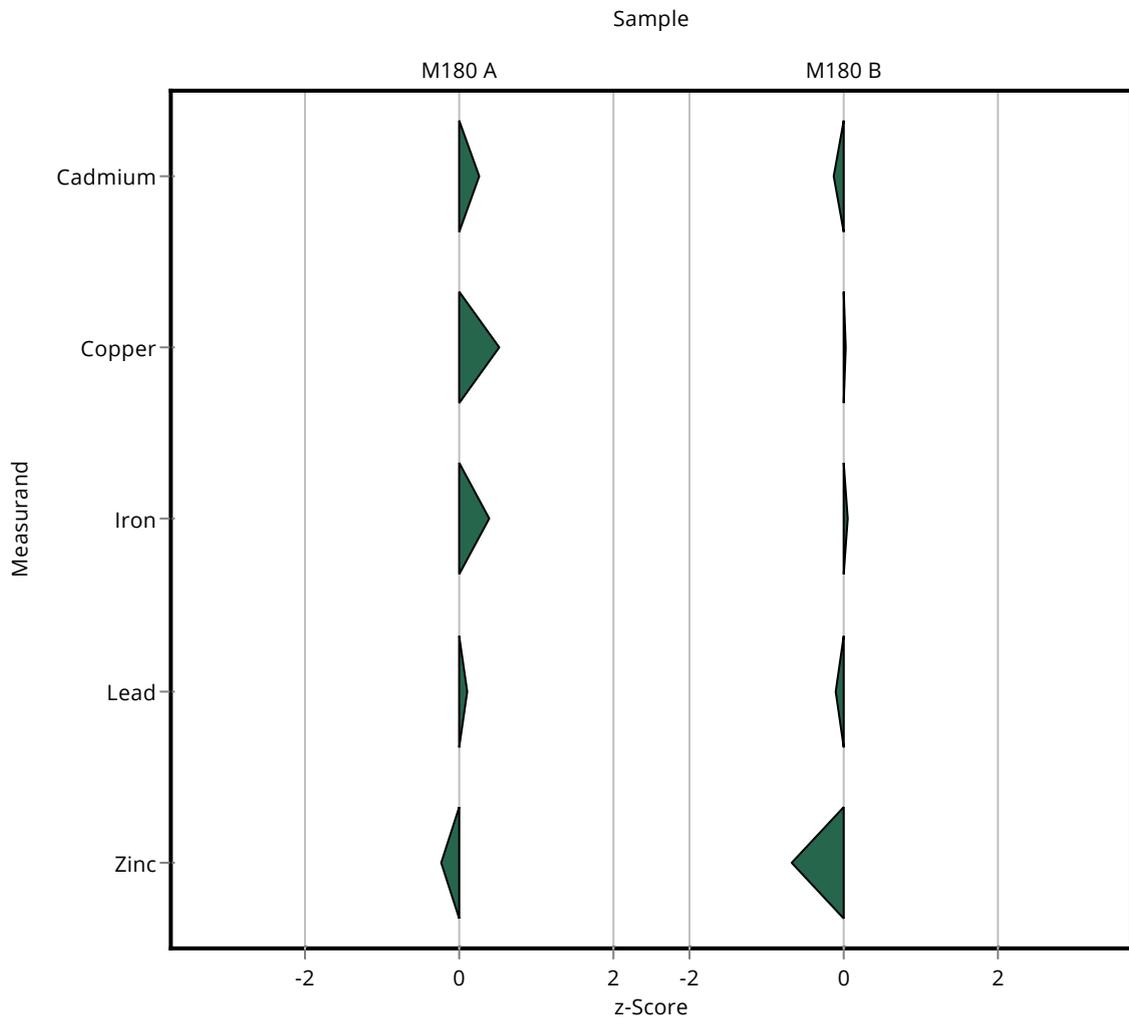
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	- ± -	3.03	-	-
Arsenic	µg/l	5.19 ± 0.158	- ± -	0.675	-	-
Cadmium	µg/l	0.644 ± 0.0142	0.66 ± 0.018	0.0644	102	0.41
Chromium	µg/l	2.27 ± 0.0977	- ± -	0.213	-	-
Copper	µg/l	12.5 ± 0.346	13.1 ± 0.77	1.13	105	0.37
Iron	µg/l	66.6 ± 1.43	69.5 ± 3.1	7.33	104	0.46
Lead	µg/l	2.16 ± 0.072	2.18 ± 0.11	0.216	101	0.10
Manganese	µg/l	5.53 ± 0.158	- ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	- ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	- ± -	0.529	-	-
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1126 ± 49.5	103	97.9	-0.24

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	- ± -	11.4	-	-
Cadmium	µg/l	6.24 ± 0.127	6.16 ± 0.17	0.624	98.6	-0.23
Chromium	µg/l	28.2 ± 0.401	- ± -	2.39	-	-
Copper	µg/l	83.1 ± 1.3	83.3 ± 4.9	7.48	100	0.02
Iron	µg/l	478 ± 9.93	481 ± 2.2	52.6	101	0.29
Lead	µg/l	49.3 ± 0.959	48.7 ± 2.5	4.93	98.9	-0.11

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	- ± -	54.2	-	-
Nickel	µg/l	61 ± 1.26	- ± -	7.32	-	-
Selenium	µg/l	19.4 ± 0.524	- ± -	2.33	-	-
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	720 ± 31.7	69.1	93.8	-0.70

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-
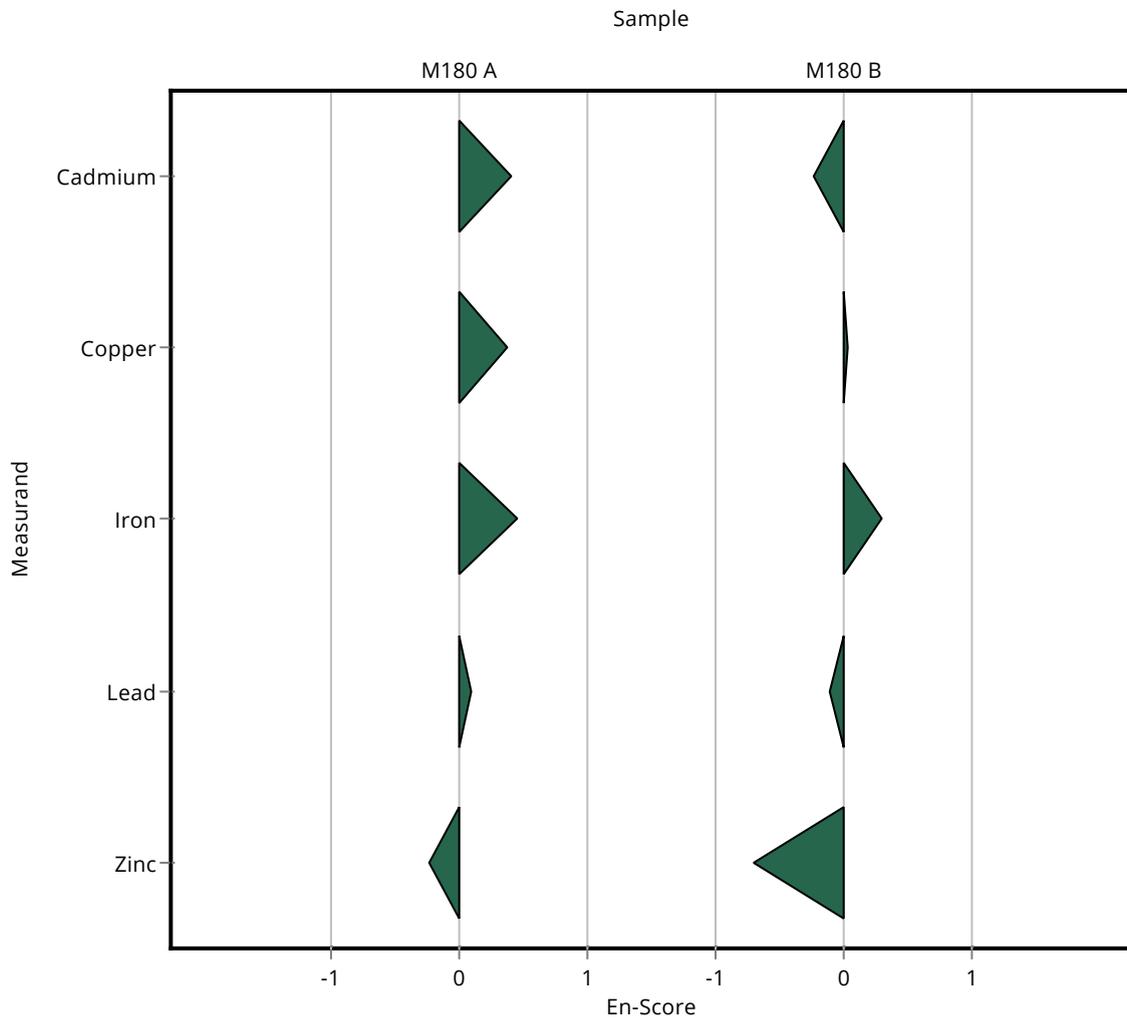
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	28.9 ± 0.63	3.03	95.3	-0.47
Arsenic	µg/l	5.19 ± 0.158	5.26 ± 0.139	0.675	101	0.10
Cadmium	µg/l	0.644 ± 0.0142	0.628 ± 0.00977	0.0644	97.5	-0.25
Chromium	µg/l	2.27 ± 0.0977	2.03 ± 0.127	0.213	89.4	-1.13
Copper	µg/l	12.5 ± 0.346	12.8 ± 0.363	1.13	102	0.25
Iron	µg/l	66.6 ± 1.43	65 ± 0.559	7.33	97.6	-0.22
Lead	µg/l	2.16 ± 0.072	2.32 ± 0.0513	0.216	108	0.75
Manganese	µg/l	5.53 ± 0.158	<10 ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	4 ± 0.0279	0.47	102	0.18
Selenium	µg/l	4.41 ± 0.169	4.38 ± 0.0542	0.529	99.4	-0.05
Uranium	µg/l	1.2 ± 0.0488	1.24 ± 0.0378	0.104	103	0.35
Zinc	µg/l	1150 ± 18.1	1219 ± 6.4	103	106	0.67

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.77 ± 0.00819	0.25	99.1	-0.07

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	700 ± 7.79	61.8	113	1.33
Arsenic	µg/l	87.5 ± 1.5	85 ± 1.49	11.4	97.2	-0.22
Cadmium	µg/l	6.24 ± 0.127	6.32 ± 0.0978	0.624	101	0.12
Chromium	µg/l	28.2 ± 0.401	29.4 ± 0.405	2.39	104	0.52
Copper	µg/l	83.1 ± 1.3	80.7 ± 0.332	7.48	97.2	-0.32
Iron	µg/l	478 ± 9.93	502 ± 3.37	52.6	105	0.46
Lead	µg/l	49.3 ± 0.959	50.3 ± 0.469	4.93	102	0.21

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	816 ± 3.34	54.2	108	1.16
Nickel	µg/l	61 ± 1.26	60.4 ± 0.274	7.32	99.1	-0.08
Selenium	µg/l	19.4 ± 0.524	19.9 ± 0.599	2.33	103	0.22
Uranium	µg/l	2.13 ± 0.0419	2.15 ± 0.0358	0.14	101	0.16
Zinc	µg/l	767 ± 23.6	820 ± 6.48	69.1	107	0.76

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.13 ± 0.0379	0.438	100	0.01
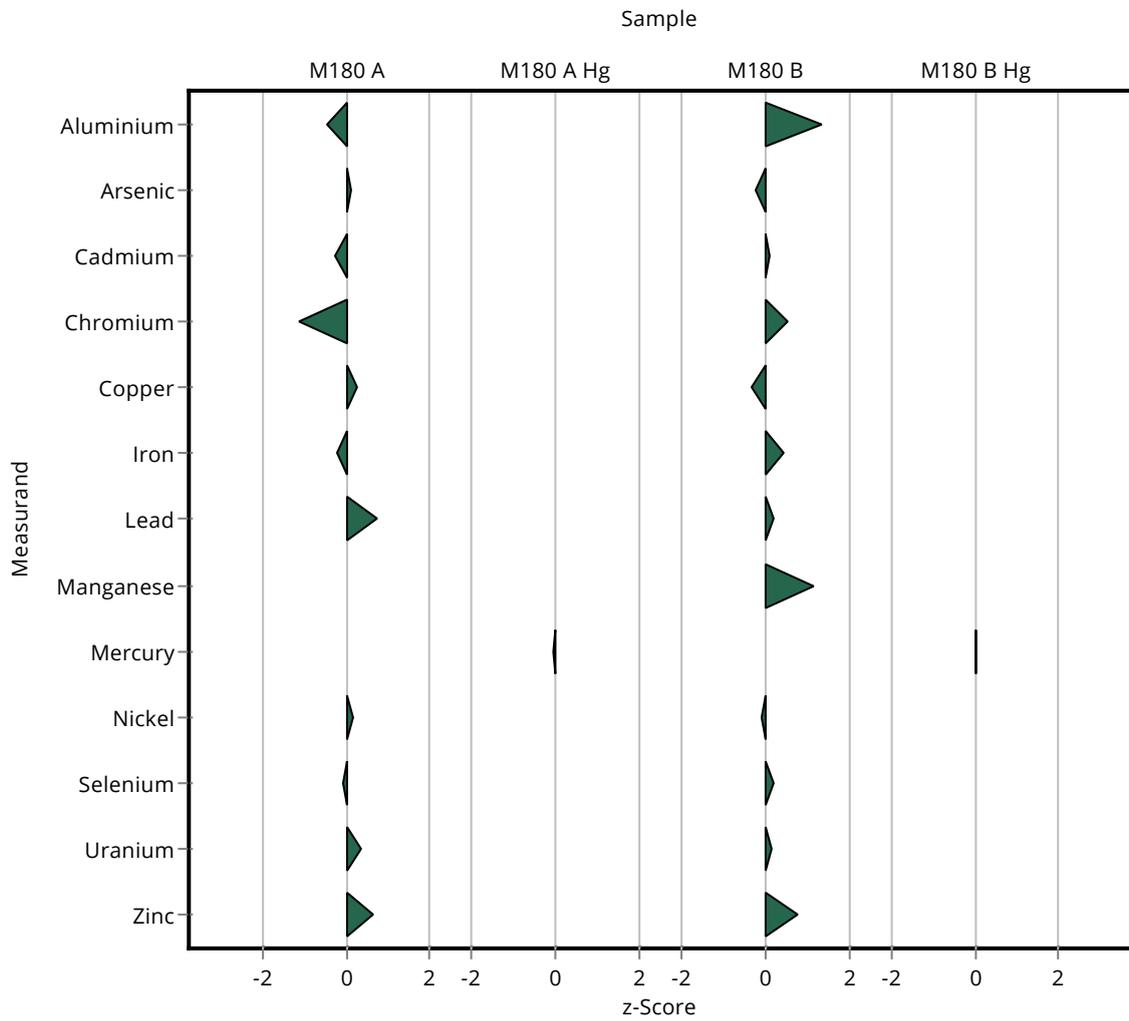
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	28.9 ± 0.63	3.03	95.3	-0.89
Arsenic	µg/l	5.19 ± 0.158	5.26 ± 0.139	0.675	101	0.21
Cadmium	µg/l	0.644 ± 0.0142	0.628 ± 0.00977	0.0644	97.5	-0.66
Chromium	µg/l	2.27 ± 0.0977	2.03 ± 0.127	0.213	89.4	-0.88
Copper	µg/l	12.5 ± 0.346	12.8 ± 0.363	1.13	102	0.35
Iron	µg/l	66.6 ± 1.43	65 ± 0.559	7.33	97.6	-0.88
Lead	µg/l	2.16 ± 0.072	2.32 ± 0.0513	0.216	108	1.29
Manganese	µg/l	5.53 ± 0.158	<10 ± -	0.398	-	-
Nickel	µg/l	3.91 ± 0.113	4 ± 0.0279	0.47	102	0.69
Selenium	µg/l	4.41 ± 0.169	4.38 ± 0.0542	0.529	99.4	-0.13
Uranium	µg/l	1.2 ± 0.0488	1.24 ± 0.0378	0.104	103	0.40
Zinc	µg/l	1150 ± 18.1	1219 ± 6.4	103	106	3.11

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.77 ± 0.00819	0.25	99.1	-0.36

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	700 ± 7.79	61.8	113	3.31
Arsenic	µg/l	87.5 ± 1.5	85 ± 1.49	11.4	97.2	-0.74
Cadmium	µg/l	6.24 ± 0.127	6.32 ± 0.0978	0.624	101	0.32
Chromium	µg/l	28.2 ± 0.401	29.4 ± 0.405	2.39	104	1.37
Copper	µg/l	83.1 ± 1.3	80.7 ± 0.332	7.48	97.2	-1.62
Iron	µg/l	478 ± 9.93	502 ± 3.37	52.6	105	2.02
Lead	µg/l	49.3 ± 0.959	50.3 ± 0.469	4.93	102	0.78

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	816 ± 3.34	54.2	108	4.14
Nickel	µg/l	61 ± 1.26	60.4 ± 0.274	7.32	99.1	-0.41
Selenium	µg/l	19.4 ± 0.524	19.9 ± 0.599	2.33	103	0.39
Uranium	µg/l	2.13 ± 0.0419	2.15 ± 0.0358	0.14	101	0.27
Zinc	µg/l	767 ± 23.6	820 ± 6.48	69.1	107	1.96

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.13 ± 0.0379	0.438	100	0.04
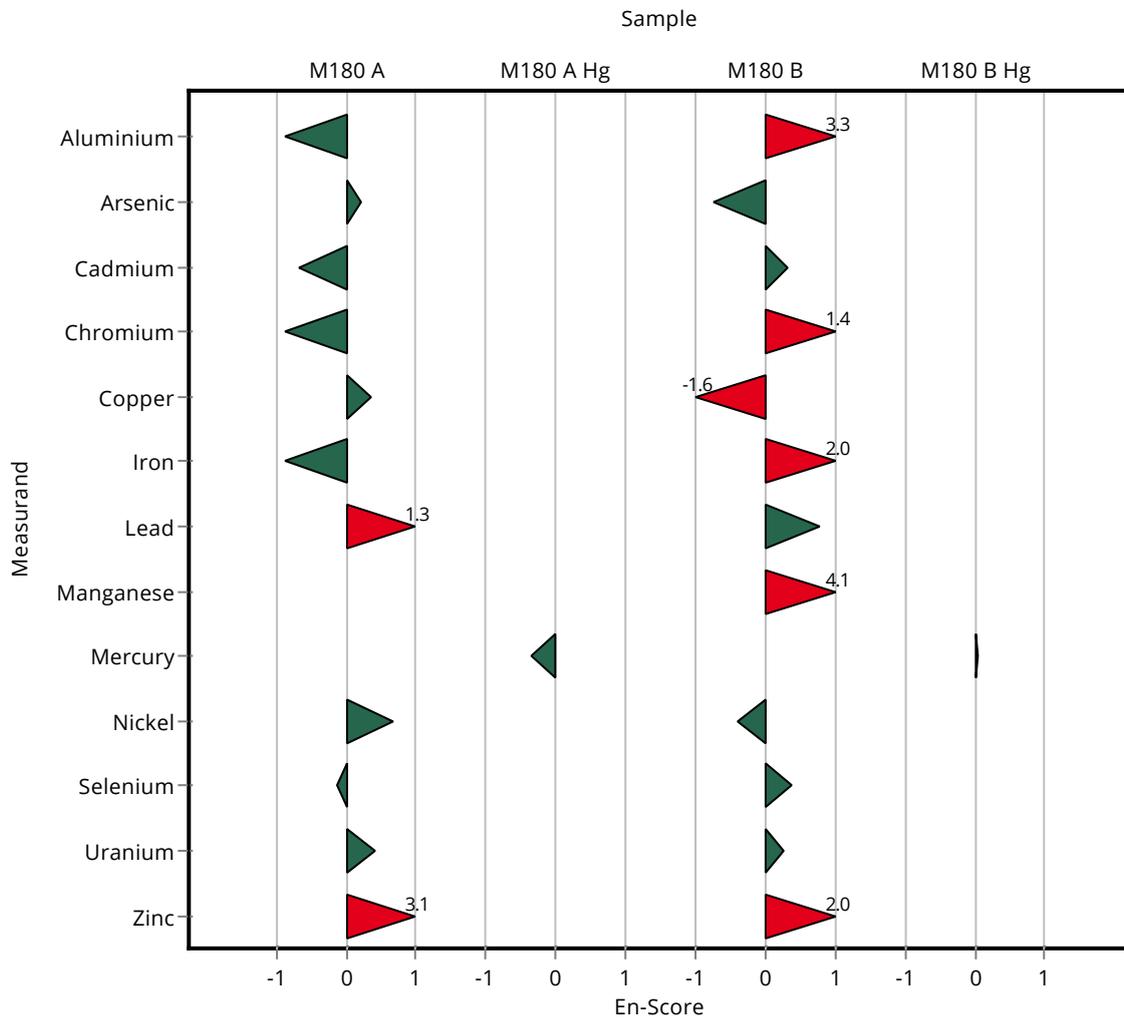
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	19.74 ± 0.4	3.03	65.1	-3.49
Arsenic	µg/l	5.19 ± 0.158	3.495 ± 0.055	0.675	67.3	-2.52
Cadmium	µg/l	0.644 ± 0.0142	0.67 ± 0.05	0.0644	104	0.40
Chromium	µg/l	2.27 ± 0.0977	2.625 ± 0.13	0.213	116	1.66
Copper	µg/l	12.5 ± 0.346	10.96 ± 0.37	1.13	87.6	-1.38
Iron	µg/l	66.6 ± 1.43	79.75 ± 1.95	7.33	120	1.79
Lead	µg/l	2.16 ± 0.072	2.15 ± 0.095	0.216	99.6	-0.04
Manganese	µg/l	5.53 ± 0.158	5.07 ± 0.23	0.398	91.7	-1.15
Nickel	µg/l	3.91 ± 0.113	4.255 ± 0.21	0.47	109	0.73
Selenium	µg/l	4.41 ± 0.169	3.065 ± 0.155	0.529	69.6	-2.54
Uranium	µg/l	1.2 ± 0.0488	1.39 ± 0.05	0.104	115	1.80
Zinc	µg/l	1150 ± 18.1	1070.43 ± 10.11	103	93.1	-0.77

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	88.28 ± 0.8	11.4	101	0.07
Cadmium	µg/l	6.24 ± 0.127	6.53 ± 0.3	0.624	105	0.46
Chromium	µg/l	28.2 ± 0.401	28.58 ± 1.07	2.39	101	0.18
Copper	µg/l	83.1 ± 1.3	82.1 ± 3.67	7.48	98.8	-0.13
Iron	µg/l	478 ± 9.93	479.41 ± 5.485	52.6	100	0.03
Lead	µg/l	49.3 ± 0.959	47.33 ± 1.93	4.93	96.1	-0.39

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	715.47 ± 30.27	54.2	95	-0.69
Nickel	µg/l	61 ± 1.26	57.46 ± 1.63	7.32	94.3	-0.48
Selenium	µg/l	19.4 ± 0.524	19.61 ± 0.29	2.33	101	0.09
Uranium	µg/l	2.13 ± 0.0419	2.08 ± 0.1	0.14	97.7	-0.34
Zinc	µg/l	767 ± 23.6	709.95 ± 17.31	69.1	92.5	-0.83

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-
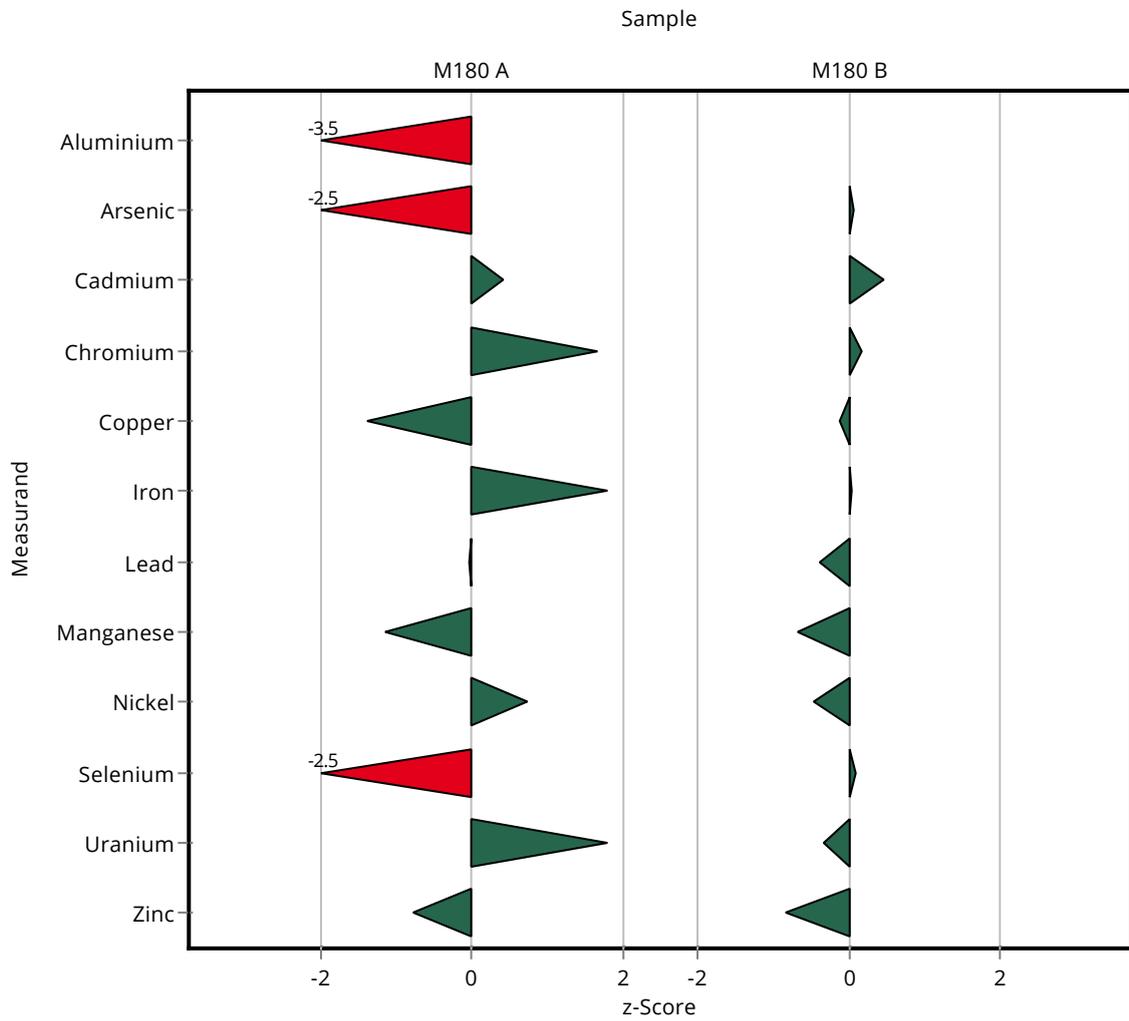
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	19.74 ± 0.4	3.03	65.1	-8.19
Arsenic	µg/l	5.19 ± 0.158	3.495 ± 0.055	0.675	67.3	-8.81
Cadmium	µg/l	0.644 ± 0.0142	0.67 ± 0.05	0.0644	104	0.26
Chromium	µg/l	2.27 ± 0.0977	2.625 ± 0.13	0.213	116	1.28
Copper	µg/l	12.5 ± 0.346	10.96 ± 0.37	1.13	87.6	-1.90
Iron	µg/l	66.6 ± 1.43	79.75 ± 1.95	7.33	120	3.16
Lead	µg/l	2.16 ± 0.072	2.15 ± 0.095	0.216	99.6	-0.04
Manganese	µg/l	5.53 ± 0.158	5.07 ± 0.23	0.398	91.7	-0.94
Nickel	µg/l	3.91 ± 0.113	4.255 ± 0.21	0.47	109	0.79
Selenium	µg/l	4.41 ± 0.169	3.065 ± 0.155	0.529	69.6	-3.79
Uranium	µg/l	1.2 ± 0.0488	1.39 ± 0.05	0.104	115	1.67
Zinc	µg/l	1150 ± 18.1	1070.43 ± 10.11	103	93.1	-2.93

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	- ± -	0.25	-	-

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	- ± -	61.8	-	-
Arsenic	µg/l	87.5 ± 1.5	88.28 ± 0.8	11.4	101	0.37
Cadmium	µg/l	6.24 ± 0.127	6.53 ± 0.3	0.624	105	0.47
Chromium	µg/l	28.2 ± 0.401	28.58 ± 1.07	2.39	101	0.19
Copper	µg/l	83.1 ± 1.3	82.1 ± 3.67	7.48	98.8	-0.13
Iron	µg/l	478 ± 9.93	479.41 ± 5.485	52.6	100	0.11
Lead	µg/l	49.3 ± 0.959	47.33 ± 1.93	4.93	96.1	-0.48

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	715.47 ± 30.27	54.2	95	-0.60
Nickel	µg/l	61 ± 1.26	57.46 ± 1.63	7.32	94.3	-1.00
Selenium	µg/l	19.4 ± 0.524	19.61 ± 0.29	2.33	101	0.28
Uranium	µg/l	2.13 ± 0.0419	2.08 ± 0.1	0.14	97.7	-0.23
Zinc	µg/l	767 ± 23.6	709.95 ± 17.31	69.1	92.5	-1.37

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	- ± -	0.438	-	-
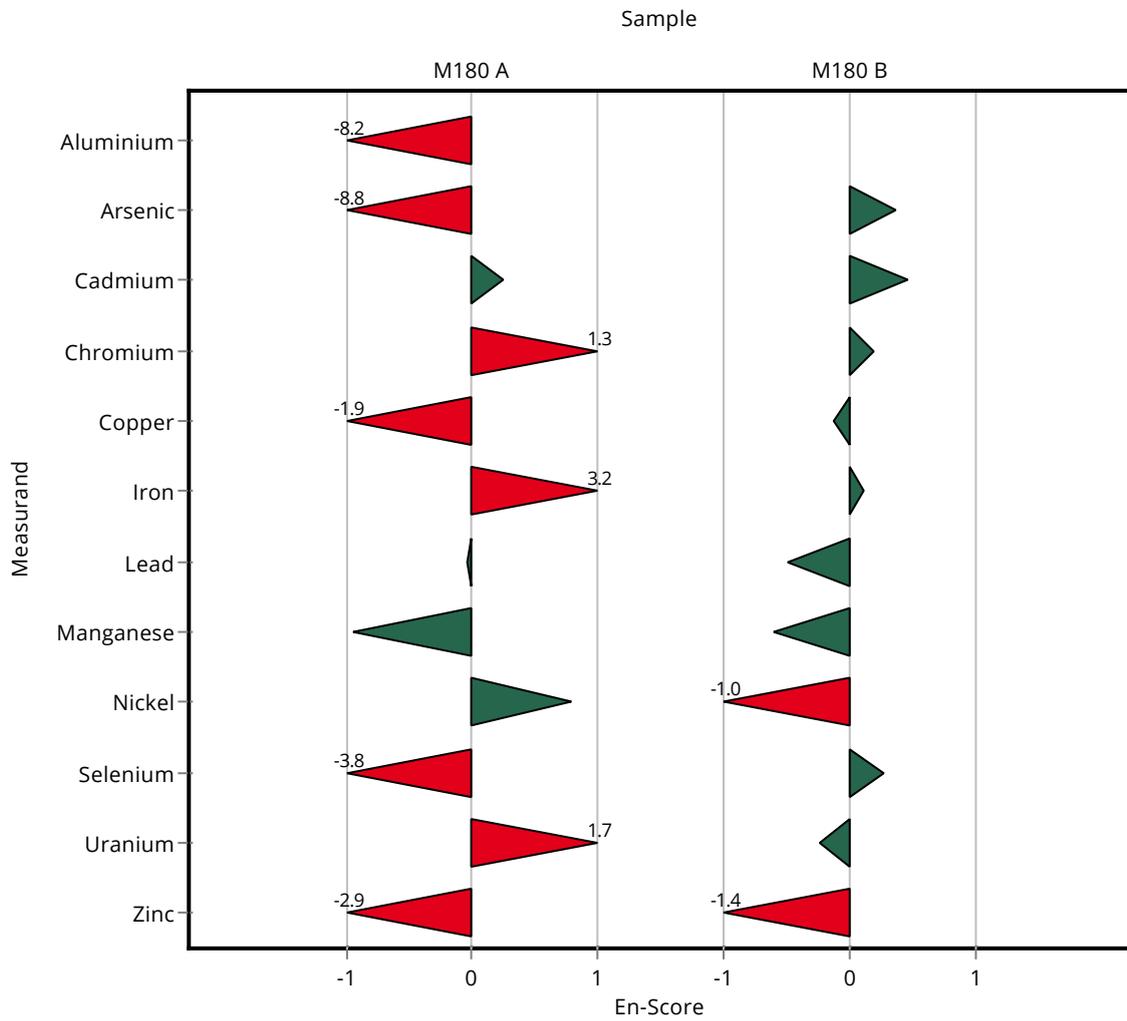
Sample

Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	30.3 ± 1.02	29.55 ± 5.19	3.03	97.4	-0.26
Arsenic	µg/l	5.19 ± 0.158	5.39 ± 1.13	0.675	104	0.29
Cadmium	µg/l	0.644 ± 0.0142	0.65 ± 0.19	0.0644	101	0.09
Chromium	µg/l	2.27 ± 0.0977	1.55 ± 2.2	0.213	68.3	-3.38
Copper	µg/l	12.5 ± 0.346	13.16 ± 2.5	1.13	105	0.57
Iron	µg/l	66.6 ± 1.43	63.1 ± 8.5	7.33	94.7	-0.48
Lead	µg/l	2.16 ± 0.072	2.18 ± 0.81	0.216	101	0.10
Manganese	µg/l	5.53 ± 0.158	6.3 ± 1.43	0.398	114	1.94
Nickel	µg/l	3.91 ± 0.113	- ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	4.46 ± 0.98	0.529	101	0.10
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1125 ± 121	103	97.8	-0.24

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	1.79 ± 0.0433	1.87 ± 0.32	0.25	105	0.33

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Aluminium	µg/l	618 ± 19.3	614.5 ± 67.8	61.8	99.4	-0.06
Arsenic	µg/l	87.5 ± 1.5	89.55 ± 15	11.4	102	0.18
Cadmium	µg/l	6.24 ± 0.127	6.14 ± 1.02	0.624	98.3	-0.17
Chromium	µg/l	28.2 ± 0.401	28 ± 5	2.39	99.4	-0.07
Copper	µg/l	83.1 ± 1.3	86.7 ± 13.9	7.48	104	0.49
Iron	µg/l	478 ± 9.93	457.5 ± 50.4	52.6	95.8	-0.39
Lead	µg/l	49.3 ± 0.959	50.1 ± 9.1	4.93	102	0.17

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Manganese	µg/l	753 ± 13.7	773 ± 137	54.2	103	0.37
Nickel	µg/l	61 ± 1.26	- ± -	7.32	-	-
Selenium	µg/l	19.4 ± 0.524	19.6 ± 3.5	2.33	101	0.09
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	755.5 ± 82.7	69.1	98.5	-0.17

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	z-Score
Mercury	µg/l	3.13 ± 0.0853	3.13 ± 0.48	0.438	100	0.01
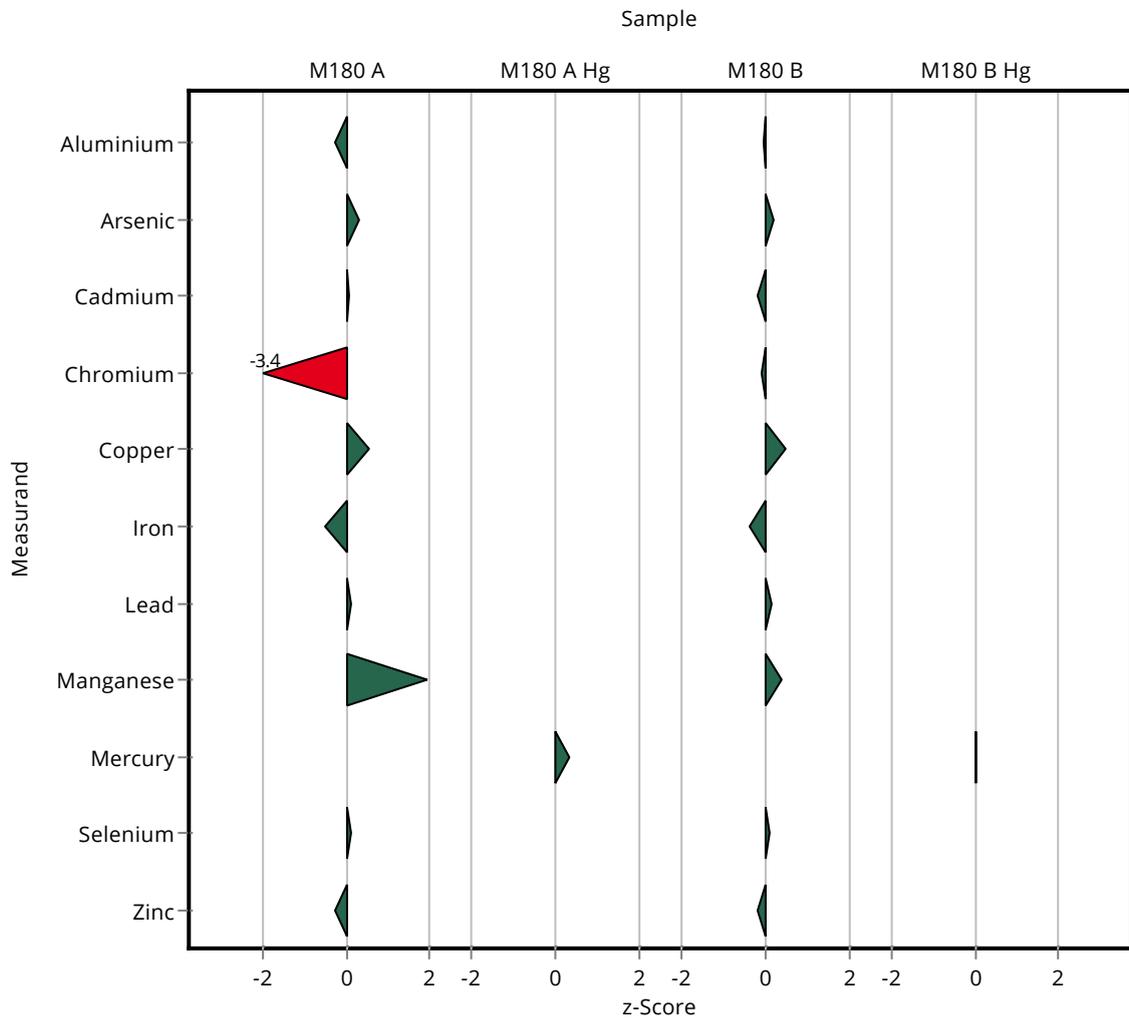
Sample: M180A

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	30.3 ± 1.02	29.55 ± 5.19	3.03	97.4	-0.08
Arsenic	µg/l	5.19 ± 0.158	5.39 ± 1.13	0.675	104	0.09
Cadmium	µg/l	0.644 ± 0.0142	0.65 ± 0.19	0.0644	101	0.02
Chromium	µg/l	2.27 ± 0.0977	1.55 ± 2.2	0.213	68.3	-0.16
Copper	µg/l	12.5 ± 0.346	13.16 ± 2.5	1.13	105	0.13
Iron	µg/l	66.6 ± 1.43	63.1 ± 8.5	7.33	94.7	-0.21
Lead	µg/l	2.16 ± 0.072	2.18 ± 0.81	0.216	101	0.01
Manganese	µg/l	5.53 ± 0.158	6.3 ± 1.43	0.398	114	0.27
Nickel	µg/l	3.91 ± 0.113	- ± -	0.47	-	-
Selenium	µg/l	4.41 ± 0.169	4.46 ± 0.98	0.529	101	0.03
Uranium	µg/l	1.2 ± 0.0488	- ± -	0.104	-	-
Zinc	µg/l	1150 ± 18.1	1125 ± 121	103	97.8	-0.10

Sample: M180AHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	1.79 ± 0.0433	1.87 ± 0.32	0.25	105	0.13

Sample: M180B

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Aluminium	µg/l	618 ± 19.3	614.5 ± 67.8	61.8	99.4	-0.03
Arsenic	µg/l	87.5 ± 1.5	89.55 ± 15	11.4	102	0.07
Cadmium	µg/l	6.24 ± 0.127	6.14 ± 1.02	0.624	98.3	-0.05
Chromium	µg/l	28.2 ± 0.401	28 ± 5	2.39	99.4	-0.02
Copper	µg/l	83.1 ± 1.3	86.7 ± 13.9	7.48	104	0.13
Iron	µg/l	478 ± 9.93	457.5 ± 50.4	52.6	95.8	-0.20
Lead	µg/l	49.3 ± 0.959	50.1 ± 9.1	4.93	102	0.05

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Manganese	µg/l	753 ± 13.7	773 ± 137	54.2	103	0.07
Nickel	µg/l	61 ± 1.26	- ± -	7.32	-	-
Selenium	µg/l	19.4 ± 0.524	19.6 ± 3.5	2.33	101	0.03
Uranium	µg/l	2.13 ± 0.0419	- ± -	0.14	-	-
Zinc	µg/l	767 ± 23.6	755.5 ± 82.7	69.1	98.5	-0.07

Sample: M180BHG

Parameter	Unit	Assigned ± U (k=2) value	Result ± U	Criterion	Recovery [%]	En-Score
Mercury	µg/l	3.13 ± 0.0853	3.13 ± 0.48	0.438	100	0.00
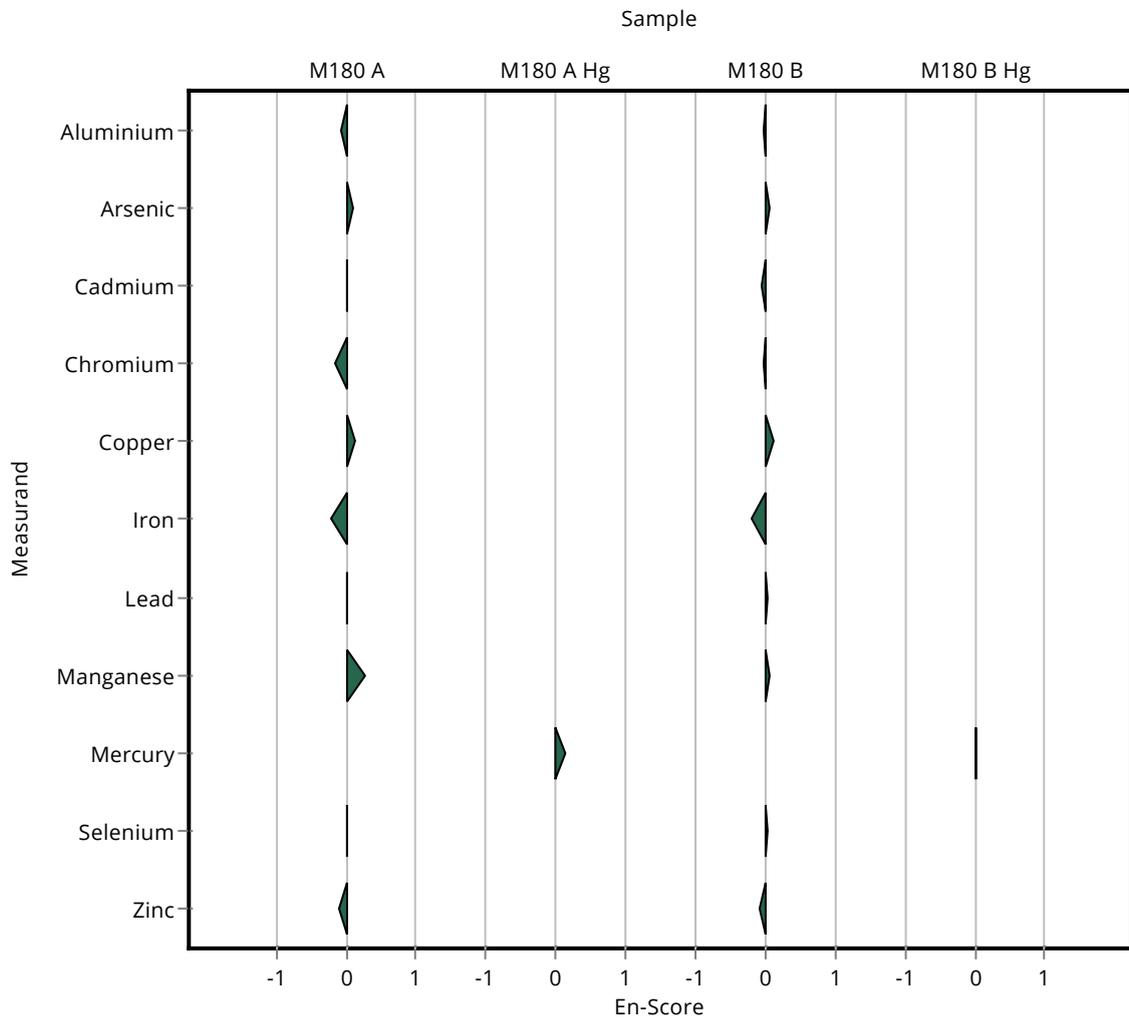
Sample

## E9.	Methodenübersicht / Overview of methods

LabCode	Sample	Aluminium	Arsenic	Cadmium	Chromium
LC0001	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0002	**M180A**	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0003	**M180A**	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0004	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0005	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0006	**M180A**	ICP-OES; EN ISO 11885	GF-AAS; EN ISO 15586	GF-AAS; EN ISO 5961	ICP-OES; EN ISO 11885
LC0007	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0008	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0009	**M180A**	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2
LC0010	**M180A**		ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29
LC0011	**M180A**			GF-AAS; EN ISO 15586	GF-AAS; EN ISO 15586
LC0012	**M180A**	ICP-OES; EN ISO 11885; E22	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29
LC0013	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0014	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0015	**M180A**	photometry; ISO 10566; E30			
LC0016	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0017	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0018	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0019	**M180A**	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0020	**M180A**		ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0021	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0022	**M180A**			voltammetry; DIN 38406-16	
LC0023	**M180A**	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-OES; EN ISO 11885
LC0024	**M180A**	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294
LC0025	**M180A**	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-OES; EN ISO 11885

LabCode	Sample	Copper	Iron	Manganese	Nickel
LC0001	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0002	**M180A**	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0003	**M180A**	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0004	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0005	**M180A**	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2

LabCode	Sample				
LC0006	M180A	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885
LC0007	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0008	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0009	M180A	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2
LC0010	M180A	ICP-MS; EN ISO 17294-2; E29			ICP-MS; EN ISO 17294-2; E29
LC0011	M180A	GF-AAS; EN ISO 15586		GF-AAS; EN ISO 15586	GF-AAS; EN ISO 15586
LC0012	M180A	ICP-MS; EN ISO 17294-2; E29	ICP-OES; EN ISO 11885; E22	ICP-OES; EN ISO 11885; E22	ICP-MS; EN ISO 17294-2; E29
LC0013	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0014	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0015	M180A		photometry; DIN 38406-1; E1	photometry; DIN 38406-2; E2	
LC0016	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0017	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0018	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0019	M180A	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0020	M180A	ICP-MS; EN ISO 17294-2			ICP-MS; EN ISO 17294-2
LC0021	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0022	M180A	voltammetry; DIN 38406-16	voltammetry; house method		
LC0023	M180A	ICP-MS; EN ISO 17294	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294
LC0024	M180A	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294
LC0025	M180A	ICP-MS; EN ISO 17294-2	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294-2	

LabCode	Sample	Lead	Selenium	Uranium	Zinc
LC0001	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0002	M180A	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0003	M180A	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0004	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0005	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0006	M180A	GF-AAS; DIN 38406-6	ICP-OES; EN ISO 11885		ICP-OES; EN ISO 11885
LC0007	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0008	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0009	M180A	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2
LC0010	M180A	ICP-MS; EN ISO 17294-2; E29			
LC0011	M180A	GF-AAS; EN ISO 15586			GF-AAS; EN ISO 15586
LC0012	M180A	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-OES; EN ISO 11885; E22
LC0013	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2

LC0014	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0015	M180A				
LC0016	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0017	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0018	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0019	M180A	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0020	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0021	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0022	M180A	voltammetry; DIN 38406-16			voltammetry; DIN 38406-16
LC0023	M180A	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-OES; EN ISO 11885
LC0024	M180A	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294
LC0025	M180A	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2		ICP-OES; EN ISO 11885

LabCode	Sample	Mercury
LC0001	M180AHG	ICP-MS; EN ISO 17294-2
LC0002	M180AHG	ICP-MS;
LC0003	M180AHG	ICP-MS;
LC0004	M180AHG	ICP-MS; EN ISO 17294-2
LC0005	M180AHG	ICP-MS; EN ISO 17294-2
LC0006	M180AHG	CV-AAS; EN ISO 12846
LC0007	M180AHG	Hg analyzer;
LC0008	M180AHG	ICP-MS; EN ISO 17294-2
LC0009	M180AHG	AFS; EN ISO 17852
LC0010	M180AHG	
LC0011	M180AHG	AFS; EN ISO 17852
LC0012	M180AHG	CV-AAS; EN ISO 12846; E12
LC0013	M180AHG	CV-AAS; EN ISO 12846
LC0014	M180AHG	ICP-MS; EN ISO 17294-2
LC0015	M180AHG	
LC0016	M180AHG	ICP-MS; EN ISO 17294-2
LC0017	M180AHG	
LC0018	M180AHG	ICP-MS; EN ISO 17294-2
LC0019	M180AHG	ICP-MS;
LC0020	M180AHG	AFS; EN ISO 17852
LC0021	M180AHG	AFS; EN ISO 17852
LC0022	M180AHG	
LC0023	M180AHG	CV-AAS; EN ISO 12846
LC0024	M180AHG	
LC0025	M180AHG	ICP-MS; EN ISO 17294-2

LabCode	Sample	Aluminium	Arsenic	Cadmium	Chromium
LC0001	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0002	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0003	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0004	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0005	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0006	M180B	ICP-OES; EN ISO 11885	GF-AAS; EN ISO 15586	GF-AAS; EN ISO 5961	ICP-OES; EN ISO 11885
LC0007	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0008	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0009	M180B	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2
LC0010	M180B		ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29
LC0011	M180B			GF-AAS; EN ISO 15586	GF-AAS; EN ISO 15586
LC0012	M180B	ICP-OES; EN ISO 11885; E22	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29
LC0013	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0014	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0015	M180B	photometry; ISO 10566; E30			
LC0016	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0017	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0018	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0019	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0020	M180B		ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0021	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0022	M180B			voltammetry; DIN 38406-16	
LC0023	M180B	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-OES; EN ISO 11885
LC0024	M180B		ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294
LC0025	M180B	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-OES; EN ISO 11885

LabCode	Sample	Copper	Iron	Manganese	Nickel
LC0001	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0002	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0003	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0004	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0005	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0006	M180B	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885
LC0007	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0008	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0009	M180B	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2
LC0010	M180B	ICP-MS; EN ISO 17294-2; E29			ICP-MS; EN ISO 17294-2; E29

LabCode	Sample				
LC0011	M180B	GF-AAS; EN ISO 15586		GF-AAS; EN ISO 15586	GF-AAS; EN ISO 15586
LC0012	M180B	ICP-MS; EN ISO 17294-2; E29	ICP-OES; EN ISO 11885; E22	ICP-OES; EN ISO 11885; E22	ICP-MS; EN ISO 17294-2; E29
LC0013	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0014	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0015	M180B		photometry; DIN 38406-1; E1	photometry; DIN 38406-2; E2	
LC0016	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0017	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0018	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0019	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0020	M180B	ICP-MS; EN ISO 17294-2			ICP-MS; EN ISO 17294-2
LC0021	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0022	M180B	voltammetry; DIN 38406-16	voltammetry; house method		
LC0023	M180B	ICP-MS; EN ISO 17294	ICP-OES; EN ISO 11885	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294
LC0024	M180B	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294
LC0025	M180B	ICP-MS; EN ISO 17294-2	ICP-OES; EN ISO 11885	ICP-MS; EN ISO 17294-2	

LabCode	Sample	Lead	Selenium	Uranium	Zinc
LC0001	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0002	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0003	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0004	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0005	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0006	M180B	GF-AAS; DIN 38406-6	ICP-OES; EN ISO 11885		ICP-OES; EN ISO 11885
LC0007	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0008	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0009	M180B	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2	ICP-MS; EN ISO 17294-1&2
LC0010	M180B	ICP-MS; EN ISO 17294-2; E29			
LC0011	M180B	GF-AAS; EN ISO 15586			GF-AAS; EN ISO 15586
LC0012	M180B	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-MS; EN ISO 17294-2; E29	ICP-OES; EN ISO 11885; E22
LC0013	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0014	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0015	M180B				
LC0016	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0017	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0018	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0019	M180B	ICP-MS;	ICP-MS;	ICP-MS;	ICP-MS;
LC0020	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2
LC0021	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2

LabCode	Sample				
LC0022	M180B	voltammetry; DIN 38406-16			voltammetry; DIN 38406-16
LC0023	M180B	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-OES; EN ISO 11885
LC0024	M180B	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294	ICP-MS; EN ISO 17294
LC0025	M180B	ICP-MS; EN ISO 17294-2	ICP-MS; EN ISO 17294-2		ICP-OES; EN ISO 11885

LabCode	Sample	Mercury
LC0001	M180BHG	ICP-MS; EN ISO 17294-2
LC0002	M180BHG	ICP-MS;
LC0003	M180BHG	ICP-MS;
LC0004	M180BHG	ICP-MS; EN ISO 17294-2
LC0005	M180BHG	ICP-MS; EN ISO 17294-2
LC0006	M180BHG	CV-AAS; EN ISO 12846
LC0007	M180BHG	Hg analyzer;
LC0008	M180BHG	ICP-MS; EN ISO 17294-2
LC0009	M180BHG	AFS; EN ISO 17852
LC0010	M180BHG	
LC0011	M180BHG	AFS; EN ISO 17852
LC0012	M180BHG	CV-AAS; EN ISO 12846; E12
LC0013	M180BHG	CV-AAS; EN ISO 12846
LC0014	M180BHG	ICP-MS; EN ISO 17294-2
LC0015	M180BHG	
LC0016	M180BHG	ICP-MS; EN ISO 17294-2
LC0017	M180BHG	
LC0018	M180BHG	ICP-MS; EN ISO 17294-2
LC0019	M180BHG	ICP-MS;
LC0020	M180BHG	AFS; EN ISO 17852
LC0021	M180BHG	AFS; EN ISO 17852
LC0022	M180BHG	
LC0023	M180BHG	CV-AAS; EN ISO 12846
LC0024	M180BHG	
LC0025	M180BHG	ICP-MS; EN ISO 17294-2