ENVIRONMENT AGENCY AUSTRIA umweltbundesamt

Proficiency Testing Scheme Umweltanalytik

Abfall nach der Deponie-VO (Gesamtgehalte) - AB07

Proficiency Testing Scheme for Environmental Analysis

Waste acc. to landfill directive (total contents) - AB07

BERICHT / REPORT

Probenversand / Sample dispatch: 17.09.2019

Ausgabe / Edition 1 - 19.12.2019

Dieser Report umfasst 211 Seiten.
This report comprises 211 pages.

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	Datum/Zeit-UTC	2019-12-19T19:27:00+01:00
Prüfinformation	Diese Unterschrift ist gemäß §4 Abs.1 SigG der handschriftlichen Unterschrift grundsätzlich rechtlich gleichgestellt. Prüfung unter: http://www.signaturpruefung.gv.at	

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D1. Beschreibung des Ringversuchs

D1.1. Ausgestaltung und Durchführung

- Anzahl der Anmeldungen: 25
- Anzahl der übermittelten Datensätze: 25
- Probenversand: 17.09.2019
- Einsendeschluss der Daten: 15.10.2019

Die Ergebnisabgabe erfolgte auf elektronischem Weg mittels passwortgeschützter Online-Dateneingabe. Beim Abschluss der Dateneingabe bestätigte der Teilnehmer 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 Abfallprobe wurde im August 2019 am Umweltbundesamt durch Vereinigung von auf ≤ 0,5 mm vorgesiebten Fraktionen aus luftgetrockneten Asche- und Schleifstaubabfällen hergestellt. Nach ausführlichem Misch- und Homogenisierungsschritt in einer 50 L Tonne wurden Abfüllungen zu je 0,3 kg durch fraktioniertes Schaufeln hergestellt.

Die Prüfgegenstände wurden am 17.09.2019 verschickt.

Jedes Teilnehmerlabor erhielt:

- 1 Feststoffprobe Abfall zu 0,3 kg (AB07) - Korngröße ≤ 0,5 mm, lufttrocken - abgefüllt in ein 1000 ml LDPE Schraubgefäß

D1.3. Anweisungen für die Teilnehmer

Es wurde empfohlen bis spätestens 25.09.2019 mit den Analysen zu beginnen. Gemäß Hinweis im Versandemail war für die Metallanalytik das Mahlen der Probe auf Analysenfeinheit durch die Teilnehmer vorzunehmen.

Den Teilnehmern stand die Wahl der Analysenmethode bzw. der verwendeten Norm frei, welche mit ihrem Routineverfahren übereinstimmen sollte.

D1.4. Kontrollanalytik zur Bewertung der Homogenität

Nach der Abfüllung wurden jeweils 6 Aliquote pro Probe zur Prüfung der Homogenität mittels Handheld-RFA entnommen – die Homogenität der Abfüllungen im Hinblick auf ausgewählte Leitparameter war gegeben (S, Cl, Zn: RSD < 5 %).

Im Zuge des Versands der Proben an die Teilnehmer wurden n=5 Kontrollproben den Labors zur Analyse übergeben.
Die Gesamtgehalte (Metalle) wurden in der Prüfstelle am Umweltbundesamt (Prüfstelle für Umwelt-, GVO- & Treibstoffanalytik) zeitnah zum Probenversand analysiert.
Die Bestimmung von TOC, Kohlenwasserstoff-Index und Summe 16 PAK (nach EPA) sowie Benzo(a)pyren wurde an ein externes Labor (akkreditiert nach EN ISO/IEC 17025 für die o.a. Parameter) im Unterauftrag vergeben (verdeckte Vergabe, Proben anonymisiert) und erfolgte zeitnah zum Probenversand.

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

Um die ausreichende Stabilität der Prüfgegenstände der aktuellen Eignungsprüfungsrunde bis zum Abgabetermin zu überprüfen, wurde die Darstellung der Teilnehmerergebnisse nach Analysendatum ausgewertet und auf systematische Trends geprüft (unauffällig). Durch Darstellung der Teilnehmerergebnisse 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 15.10.2019 beim Veranstalter vorliegen. Später eingehende Werte wurden nicht berücksichtigt.

Im Zuge der Plausibilitätsprüfung der Daten (z.B. Check korrekte Einheiten, Messunsicherheitsangabe, …) wurden die Teilnehmer mit auffälligen Ergebnissen zum erneuten Datencheck der Eingabe und um Rückmeldung binnen 24 h 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 selber 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 Expertenbefund). Diese Vorgangsweise wird nach Anwendung unter Punkt D4 des Berichts dokumentiert.

Die weitere Auswertung erfolgte gemäß DIN ISO 5725-2. Eine statistische Auswertung der Ringversuchsdaten erfolgte erst ab zumindest 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.

Bei sehr hohen Streuungen der Teilnehmerergebnisse von über 50 % und/oder bei mangelhafter Rückführbarkeit der statistischen Kenndaten aus den ausreißerbereinigten Ergebnissen der Teilnehmer auf den Mittelwert des Kontrolllabors, kann die Situation auftreten, dass kein zugewiesener Wert für den aktuellen Ringversuch festgelegt werden kann und daher keine Bewertung der Teilnehmerergebnisse für diesen Parameter möglich ist. Ein entsprechender Hinweis wird im Bericht unter E7 bei der informativen Auswertung angebracht. Im Rahmen der internen Qualitätssicherung der Teilnehmer 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:

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

Dabei ist:

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert Sollwert für die Leistungsbewertung der Teilnehmer (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Teilnehmerergebnisse. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
Kriterium	Vergleichsstandardabweichung berechnet aus den Statistiken der ausreißerbereinigten Teilnehmerergebnissen (sR) des aktuellen Ringversuchs. In begründeten Fällen (z.B. Ergebnisse 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 Feststoffproben erfolgen neu ab 2019 zusätzliche Bewertungen unter Einbeziehung der erweiterten Messunsicherheiten der Teilnehmer und der erweiterten Messunsicherheit des zugewiesenen Wertes, gemäß E_n-Score. Diese Auswertungen werden für die Teilnehmer im Bericht unter Punkt E8, jeweils im Anschluss an die z-Score Auswertung dargestellt.

Die Ermittlung der E_n-Scores erfolgte gemäß nachfolgender Formel:

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

Dabei ist:

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert Sollwert für die Leistungsbewertung der Teilnehmer (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Teilnehmerergebnisse. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
U(x_i)	erweiterte Messunsicherheit des Messergebnisses (Teilnehmer-ergebnis)
U($\bar{X}$)	erweiterte Messunsicherheit des zugewiesenen Wertes

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 Teilnehmer 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-Score erfolgt die Berücksichtigung der erweiterten Messunsicherheiten der Teilnehmer 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 laborientierten 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 laborientierten Auswertungen enthalten jeweils die Bewertungsgrundlagen wie zugewiesener Wert samt erweiterter Messunsicherheit, sowie das Kriterium.

Eine Erläuterung zu den Tabellen und Grafiken kann Punkt 0 entnommen werden.

D4. Anmerkungen zur Auswertung

Wie unter Punkt D2 ersichtlich, können die z-Scores auch unter Einbeziehung der Vergleichsstandardabweichung der ausreißerbereinigten Teilnehmerergebnisse 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 Teilnehmerergebnisse 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.

Für alle Parameter wurde als Kriterium für die Berechnung des z-Scores die Vergleichsstandardabweichung der aktuellen Ringversuchsrunde gewählt.

Parameter Antimon, Barium, Blei, Chrom, Kobalt, Molybdän, Nickel, Vanadium, Zink und Zinn Probe AB07: Die auf Basis der Teilnehmerergebnisse berechneten Sollwerte lagen außerhalb der Messunsicherheit des Kontrollwertes und es ist über das Kontrolllabor keine Rückführbarkeit möglich. Der zugewiesene Wert wurde daher über die ausreißerbereinigten Mittelwerte aus der Gruppe der akkreditierten Teilnehmer berechnet.

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)

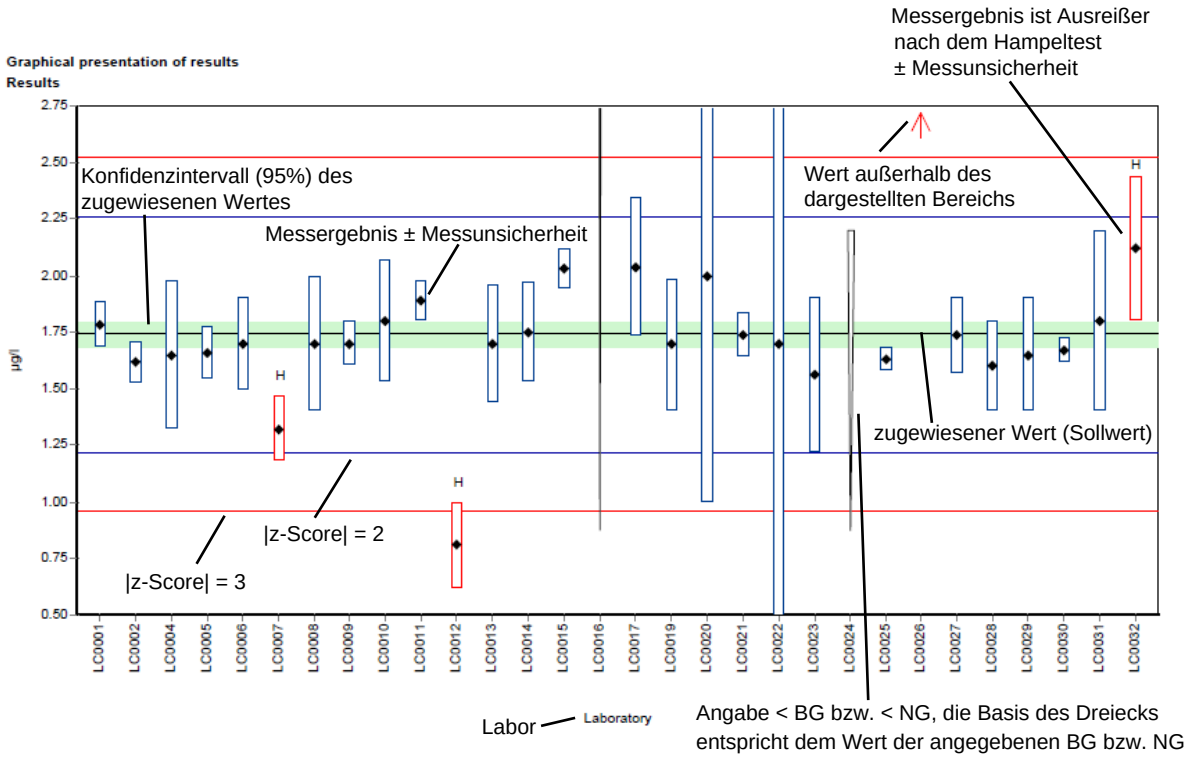
Zugewiesener Wert	Sollwert für die Leistungsbewertung der Teilnehmer (angegeben auf 3 signifikante Stellen)
U (k=2)	erweiterte Unsicherheit (k=2) des zugewiesenen Wertes, (angegeben auf 3 signifikante Stellen)
Kriterium	Vorgabewert zur Ermittlung des z-Scores in der angegebenen Einheit (angegeben auf 3 signifikante Stellen)
Kriterium [%]	Vorgabewert zur Ermittlung des z-Scores in % des zugewiesenen Wertes (angegeben auf 2 signifikante Stellen)
Mittelwert	Ausreißerbereinigter Mittelwert über die Teilnehmer-ergebnisse (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 Teilnehmerergebnissen des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
vR	relative Vergleichsstandardabweichung in %, berechnet aus den ausreißerbereinigten Teilnehmerergebnissen 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 Teilnehmerkennung im jeweiligen Ringversuch
Messwert	einzelne(r) Messwert(e) lt. Teilnehmerangabe (maximal 5 Nachkommastellen dargestellt)
Messergebnis	Für die Bewertung herangezogenes Ergebnis lt. Teilnehmerangabe (maximal 5 Nachkommastellen dargestellt). Bei Eignungsprüfungsrunden mit Vorgabe von unabhängigen Mehrfachbestimmungen, entspricht dies dem berechneten Mittelwert aus den einzelnen Messwerten der Teilnehmer.
± U	Ergebnisunsicherheit lt. Teilnehmerangabe (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 Teilnehmer (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen). Beim E_n-Score erfolgt die Berücksichtigung der Messunsicherheit der Teilnehmer.
-	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 Teilnehmerergebnissen des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
rel. Standardabweichung	relative Vergleichsstandardabweichung in %, berechnet aus den Teilnehmerergebnissen des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 3 signifikante Stellen)
n	Anzahl der Messergebnisse

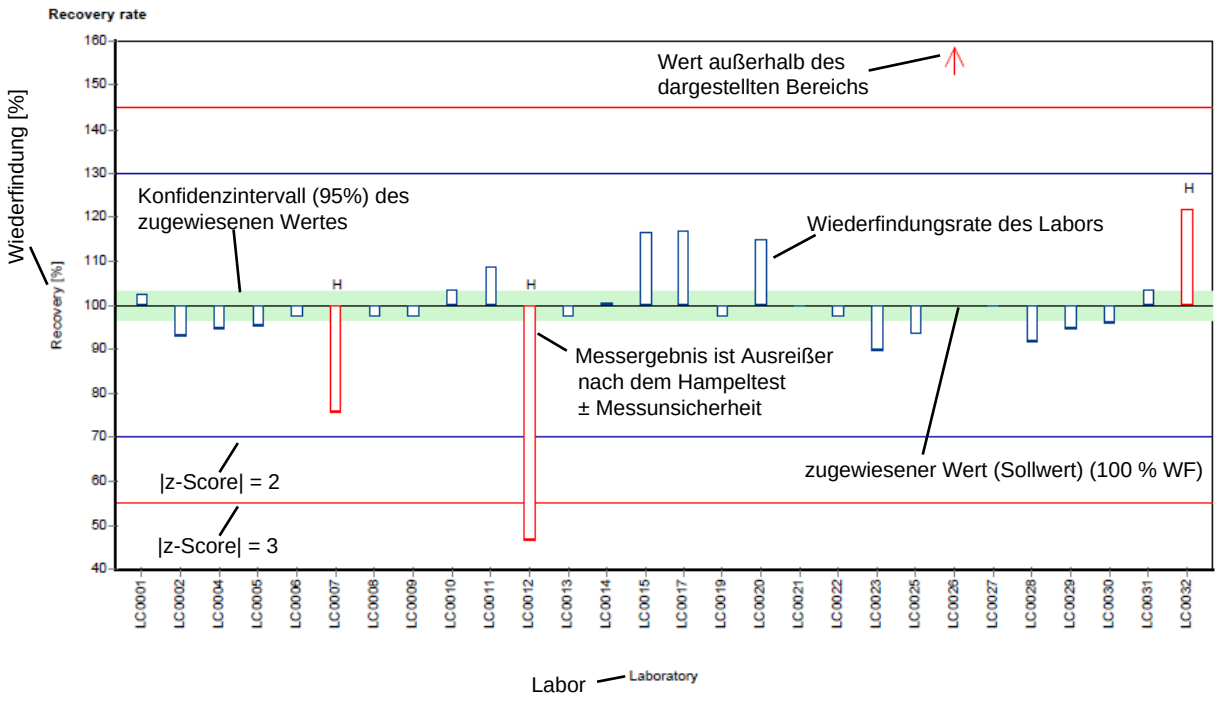
D5.2. Graphische Darstellung der Ergebnisse

Nachfolgend wird die graphische Darstellung anhand von kommentierten Beispieldiagrammen erläutert.

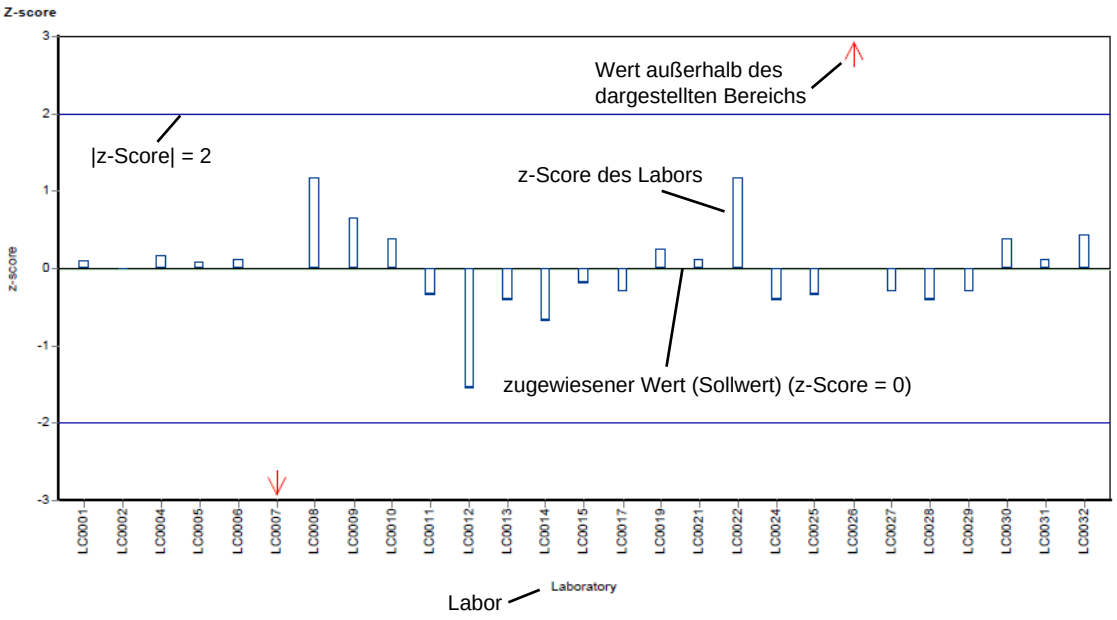
Beispieldiagramm: Messwerte



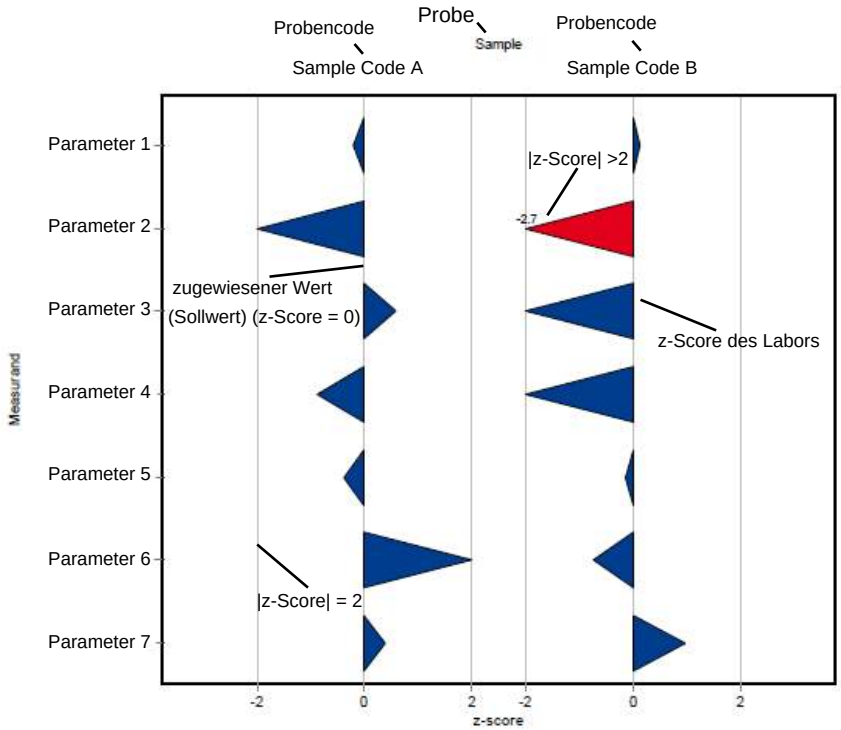
Beispieldiagramm: Wiederfindung zum zugewiesenen Wert



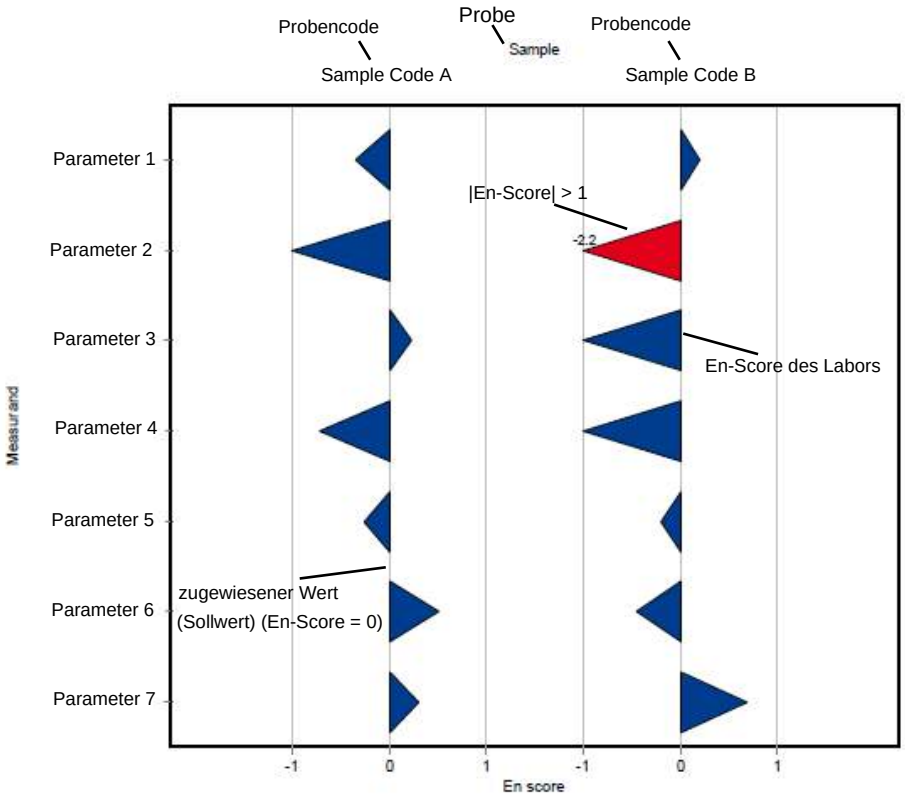
Beispieldiagramm: z-Score



Beispieldiagramm: z-Score (laborientierte Auswertung)



Beispieldiagramm: En-Score (laborientierte Auswertung)



D6. Zusammenfassung

D6.1. Tabelle der zugewiesenen Werte

Parameter	Probe	Einheit	zugewiesener Wert	±	U (k=2)	Kriterium	Kriterium [%]
Antimon	AB07	mg/kg TM	3.74	±	0.47	0.803	21
Arsen	AB07	mg/kg TM	147	±	3.34	8.02	5.5
Barium	AB07	mg/kg TM	732	±	51.4	176	24
Benzo[a]pyren	AB07	mg/kg TM	0.072	±	0.0118	0.0244	34
Cadmium	AB07	mg/kg TM	10.9	±	0.473	1.18	11
Chrom	AB07	mg/kg TM	324	±	13.2	36.6	11
Cobalt	AB07	mg/kg TM	297	±	18.9	40	13
Kupfer	AB07	mg/kg TM	619	±	18.8	44.1	7.1
KW-Index	AB07	mg/kg TM	437	±	93.7	215	49
Blei	AB07	mg/kg TM	93.8	±	4	11.7	12
Quecksilber	AB07	mg/kg TM	0.13	±	0.0204	0.0367	28
Molybdän	AB07	mg/kg TM	3.89	±	0.607	1.16	30
Nickel	AB07	mg/kg TM	300	±	15.8	38.3	13
Selen	AB07	mg/kg TM	2.38	±	0.657	1.19	50
Silber	AB07	mg/kg TM	13	±	0.967	2.05	16
Summe 16 PAK (nach EPA)	AB07	mg/kg TM	1.78	±	0.295	0.644	36
Zinn	AB07	mg/kg TM	36.2	±	2.3	4.99	14
TOC (als C)	AB07	mg/kg TM	41100	±	2100	4810	12
Vanadium	AB07	mg/kg TM	20.1	±	2.56	4.96	25
Zink	AB07	mg/kg TM	2370	±	117	300	13

D6.2. Zusammenfassung der ausreißerbereinigten Ringversuchsergebnisse

Parameter	Probe	Anzahl Labors für Berechnung	Anzahl Ausreißer Labors	Einheit	Mittelwert	± VB (99%)	Minimum	Maximum	sR	vR [%]
Antimon	AB07	17	0	mg/kg TM	3.71	± 0.584	2.4	5.25	0.803	22
Arsen	AB07	23	2	mg/kg TM	147	± 5.01	134	161	8.02	5.5
Barium	AB07	21	3	mg/kg TM	651	± 115	240	895	176	27
Benzo[a]pyren	AB07	17	0	mg/kg TM	0.072	± 0.0178	0.031	0.11	0.0244	34
Cadmium	AB07	25	0	mg/kg TM	10.9	± 0.709	8.28	12.5	1.18	11
Chrom	AB07	25	0	mg/kg TM	319	± 22	234	396	36.6	12
Cobalt	AB07	23	1	mg/kg TM	298	± 25	227	381	40	13
Kupfer	AB07	22	3	mg/kg TM	619	± 28.2	544	695	44.1	7.1
KW-Index	AB07	21	0	mg/kg TM	437	± 141	0.29	750	215	49
Blei	AB07	23	2	mg/kg TM	91.1	± 7.3	59	105	11.7	13
Quecksilber	AB07	13	4	mg/kg TM	0.13	± 0.0305	0.06	0.201	0.0367	28
Molybdän	AB07	15	1	mg/kg TM	3.67	± 0.897	1.1	6.07	1.16	32
Nickel	AB07	23	2	mg/kg TM	298	± 23.9	212	358	38.3	13
Selen	AB07	13	2	mg/kg TM	2.38	± 0.986	0.999	5.17	1.19	50
Silber	AB07	18	3	mg/kg TM	13	± 1.45	8.45	16.9	2.05	16
Summe 16 PAK (nach EPA)	AB07	19	0	mg/kg TM	1.78	± 0.443	0.63	2.8	0.644	36
Zinn	AB07	20	2	mg/kg TM	35.6	± 3.35	28.5	46.5	4.99	14
TOC (als C)	AB07	21	0	mg/kg TM	41100	± 3150	31000	48000	4810	12
Vanadium	AB07	22	2	mg/kg TM	19.9	± 3.17	10	33	4.96	25
Zink	AB07	25	0	mg/kg TM	2350	± 180	1630	2900	300	13

E1. Description of the proficiency test

E1.1. Design and implementation

- Number of registrations: 25
- Number of submitted data records: 25
- Dispatch of samples: 17th September 2019
- Closing date for submission of data: 15th October 2019

The results were submitted electronically through 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 assigned a laboratory code on a random basis.

E1.2. Description of the proficiency test items

The waste sample was prepared at the Umweltbundesamt in August 2019 by mixing sieved fractions of ash and grinding dust (≤ 0.5 mm).

After thorough mixing and homogenization in a 50 l barrel, fractionated shovelling was used to produce the test items.

The test items were dispatched on 17th September 2019.

All participating laboratories received:

- 1 solid waste sample of 0.3 kg (AB07) - particle size ≤ 0.5 mm, air-dried - filled in a 1000 ml LDPE vessel

E1.3. Instructions for the participants

It was recommended to start the analysis by the 25th September 2019 at the latest.

The participants were advised to finely grind the samples for analysis of metals.

The participants are expected to use the test method or measurement method of their choice, which should be consistent with their routine procedures.

E1.4. Control testing for homogeneity evaluation

For homogeneity evaluation 6 filled bottles were chosen randomly for measurement of preselected parameters by handheld-XRF (homogeneity was achieved as the residual standard deviation for elements S, Cl, Zn was below 5 %).

At the time of sample dispatch, n = 5 control samples were handed over to the laboratories for analysis.

The total contents (metals) were analysed in the testing laboratory at the Environment Agency Austria (Prüfstelle für Umwelt-, GVO- & Treibstoffanalytik) close to the time of sample dispatch.

The determination of TOC, HC-index, sum of 16 PAK according to EPA and Benzo(a)pyrene was subcontracted to an external laboratory (accredited to EN ISO / IEC 17025 for the above parameters) (concealed allocation, anonymized samples) and was carried out contemporarily when the sample was dispatched.

During evaluation, the relative standard deviation between the individual results of the control test samples was assessed and compared with the reproducibility standard deviation of the current 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 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 participant 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 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 15th October 2019. Any values received at a later date were not considered.

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

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

The assigned values are normally calculated as the mean over all submitted results, after removal of outliers.

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.

In this case, a clear statement in section E7 of the report is made and all provided statistical data are 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 assurance, the participants can compare their results to 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:

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

In this context,

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 the participants' results after removal of outliers (sR) in the current round. Where justified (e.g. results 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

New for the 2019 proficiency testing is the additional assessment of the participants' results using E_n-Scores. This additional assessment takes into account 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:

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

In this context,

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

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

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 taken into account. The difference between the results of participants and the assigned value is evaluated by the criteria.

Interpretation of E_n-Scores:

- $|E_n\text{-Score}| \leq 1.0$ satisfactory performance
- $|E_n\text{-Score}| > 1.0$ 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 taken into account. $|E_n\text{-Score}| > 1.0$ might indicate to check the measurement uncertainty estimation or 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 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 the evaluation of E_n-Scores on separate pages.

The tables also contain the evaluation basis such as the assigned values including 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 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.

For all parameters, the current reproducibility standard deviation was selected as the criterion for calculating the z-Score.

Parameters antimony, barium, lead, chromium, cobalt, molybdenum, nickel, vanadium, zinc and tin sample AB07: The assigned values calculated based on the participant results were outside the measurement uncertainty of the control value and thus traceability could not be proven by this procedure. Therefore, new assigned values were defined by the group of accredited participating laboratories after outlier-assessment.

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)
Criterion	Specified value for the determination of the z-score in the given unit (3 significant digits)
Criterion [%]	Specified value for the determination of the z-score in % of the assigned value (3 significant digits)

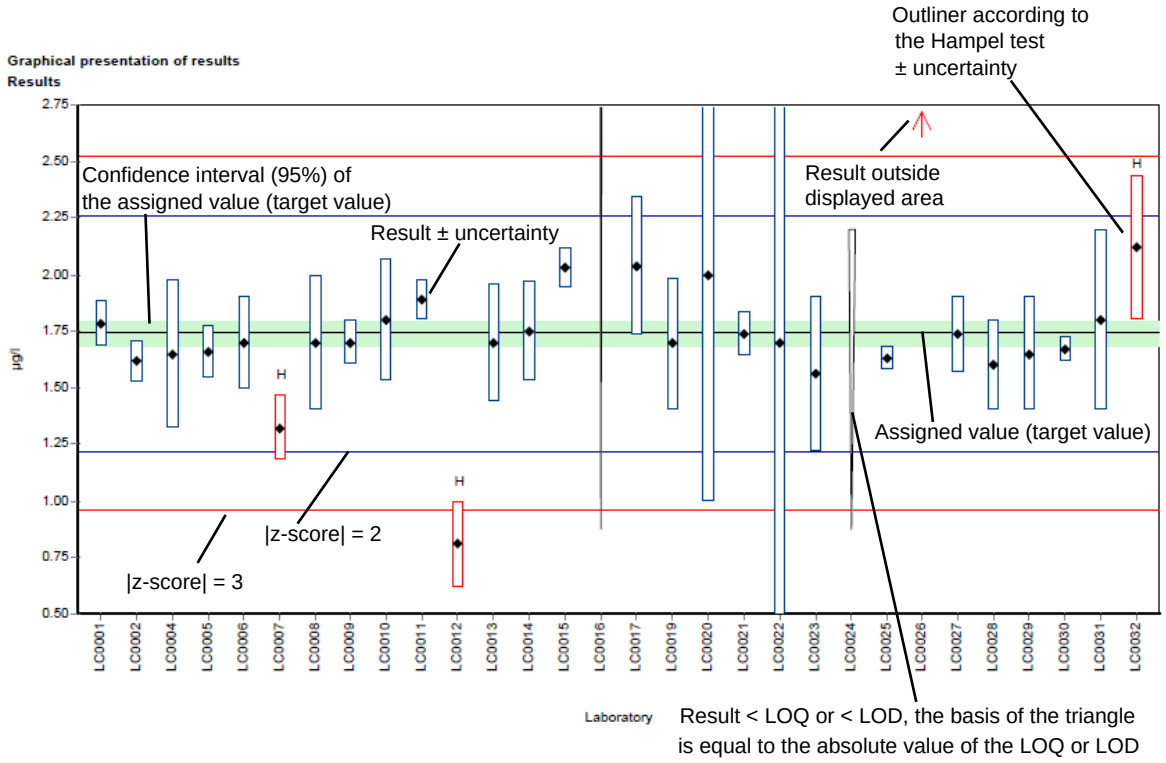
Mean	Mean of the participants results, without outliers (3 significant digits)
CI (99 %)	99% confidence interval (3 significant digits)
Minimum	Minimum of all submitted results, after removal of outliers (3 significant digits)
Maximum	Maximum of all submitted results, after removal of outliers (3 significant digits)
sR	Reproducibility standard deviation, calculated from the participants results, after removal of outliers (3 significant digits)
vR [%]	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	uncertainty 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 takes into account 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

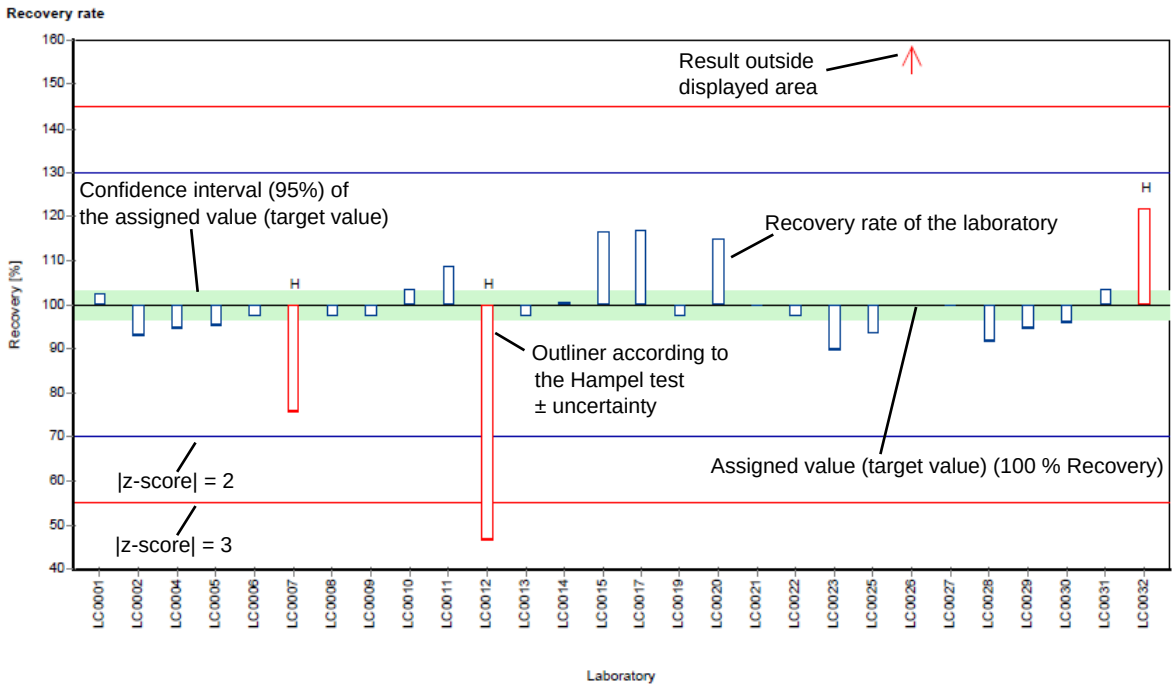
E5.2. Graphical presentation of results

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

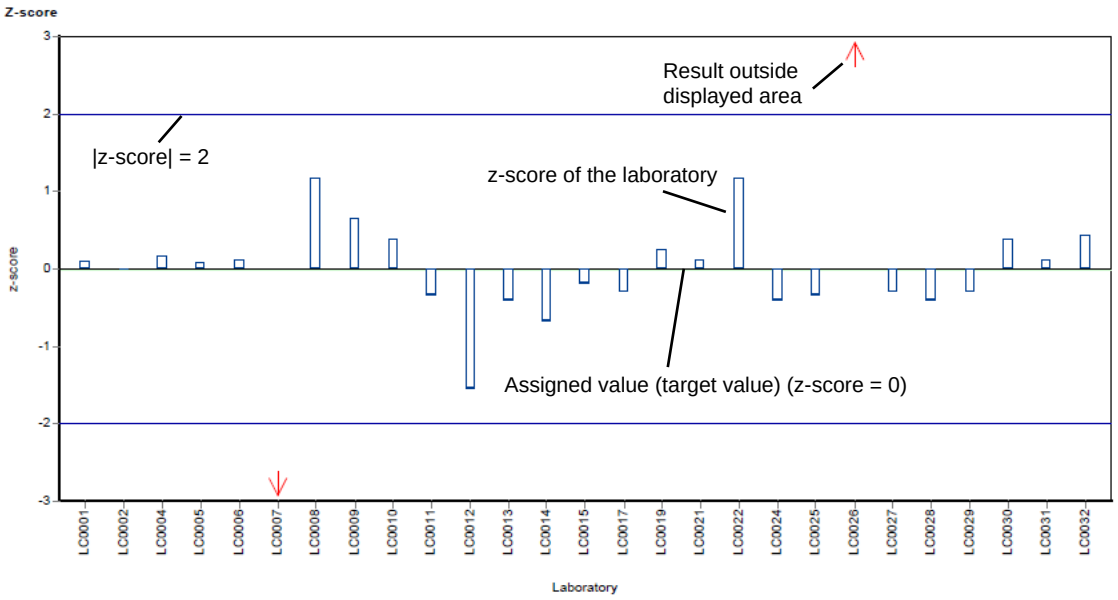
Example chart: Results



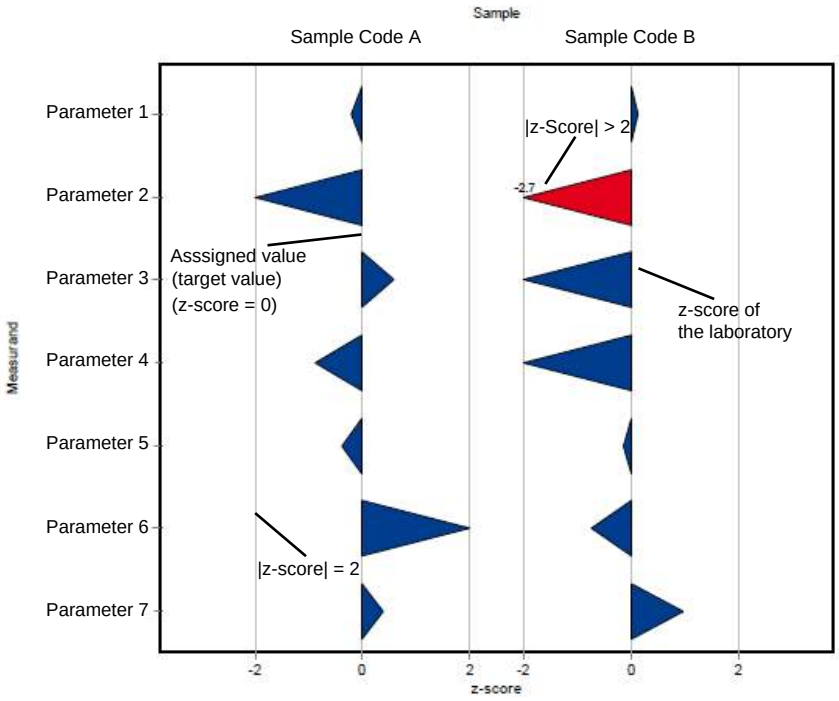
Example chart: Recovery



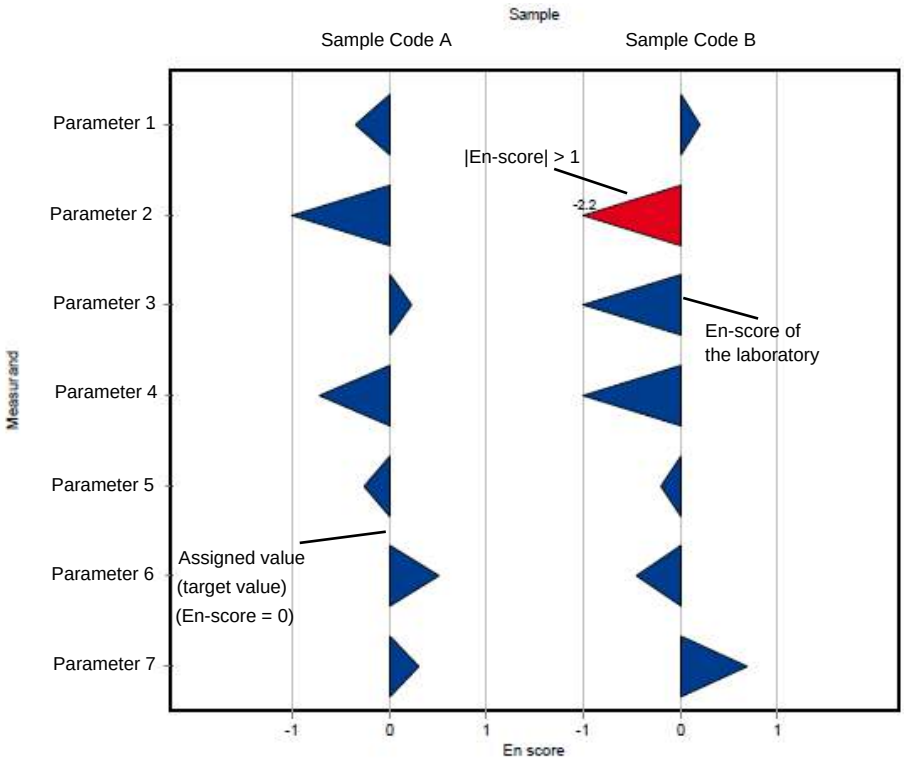
Example chart: z-score



Example chart: z-score (laboratory oriented report)



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 [%]
Antimony	AB07	mg/kg DM	3.74	±	0.47	0.803	21
Arsenic	AB07	mg/kg DM	147	±	3.34	8.02	5.5
Barium	AB07	mg/kg DM	732	±	51.4	176	24
Benzo[a]pyrene	AB07	mg/kg DM	0.072	±	0.0118	0.0244	34
Cadmium	AB07	mg/kg DM	10.9	±	0.473	1.18	11
Chromium	AB07	mg/kg DM	324	±	13.2	36.6	11
Cobalt	AB07	mg/kg DM	297	±	18.9	40	13
Copper	AB07	mg/kg DM	619	±	18.8	44.1	7.1
HC-Index	AB07	mg/kg DM	437	±	93.7	215	49
Lead	AB07	mg/kg DM	93.8	±	4	11.7	12
Mercury	AB07	mg/kg DM	0.13	±	0.0204	0.0367	28
Molybdenum	AB07	mg/kg DM	3.89	±	0.607	1.16	30
Nickel	AB07	mg/kg DM	300	±	15.8	38.3	13
Selenium	AB07	mg/kg DM	2.38	±	0.657	1.19	50
Silver	AB07	mg/kg DM	13	±	0.967	2.05	16
Sum 16 PAH (acc. to EPA)	AB07	mg/kg DM	1.78	±	0.295	0.644	36
Tin	AB07	mg/kg DM	36.2	±	2.3	4.99	14
TOC (as C)	AB07	mg/kg DM	41100	±	2100	4810	12
Vanadium	AB07	mg/kg DM	20.1	±	2.56	4.96	25
Zinc	AB07	mg/kg DM	2370	±	117	300	13

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 [%]
Antimony	AB07	17	0	mg/kg DM	3.71	± 0.584	2.4	5.25	0.803	22
Arsenic	AB07	23	2	mg/kg DM	147	± 5.01	134	161	8.02	5.5
Barium	AB07	21	3	mg/kg DM	651	± 115	240	895	176	27
Benzo[a]pyrene	AB07	17	0	mg/kg DM	0.072	± 0.0178	0.031	0.11	0.0244	34
Cadmium	AB07	25	0	mg/kg DM	10.9	± 0.709	8.28	12.5	1.18	11
Chromium	AB07	25	0	mg/kg DM	319	± 22	234	396	36.6	12
Cobalt	AB07	23	1	mg/kg DM	298	± 25	227	381	40	13
Copper	AB07	22	3	mg/kg DM	619	± 28.2	544	695	44.1	7.1
HC-Index	AB07	21	0	mg/kg DM	437	± 141	0.29	750	215	49
Lead	AB07	23	2	mg/kg DM	91.1	± 7.3	59	105	11.7	13
Mercury	AB07	13	4	mg/kg DM	0.13	± 0.0305	0.06	0.201	0.0367	28
Molybdenum	AB07	15	1	mg/kg DM	3.67	± 0.897	1.1	6.07	1.16	32
Nickel	AB07	23	2	mg/kg DM	298	± 23.9	212	358	38.3	13
Selenium	AB07	13	2	mg/kg DM	2.38	± 0.986	0.999	5.17	1.19	50
Silver	AB07	18	3	mg/kg DM	13	± 1.45	8.45	16.9	2.05	16
Sum 16 PAH (acc. to EPA)	AB07	19	0	mg/kg DM	1.78	± 0.443	0.63	2.8	0.644	36
Tin	AB07	20	2	mg/kg DM	35.6	± 3.35	28.5	46.5	4.99	14
TOC (as C)	AB07	21	0	mg/kg DM	41100	± 3150	31000	48000	4810	12
Vanadium	AB07	22	2	mg/kg DM	19.9	± 3.17	10	33	4.96	25
Zinc	AB07	25	0	mg/kg DM	2350	± 180	1630	2900	300	13

E7. Parameterorientierte Auswertung / Parameter oriented report

Parameter oriented report

AB07

Antimony

Unit	mg/kg DM
Assigned value ± U (k=2)	3.74 ± 0.47
Criterion	0.803 (21 %)
Minimum - Maximum	2.4 - 5.25
Control test value ± U (k=2)	-

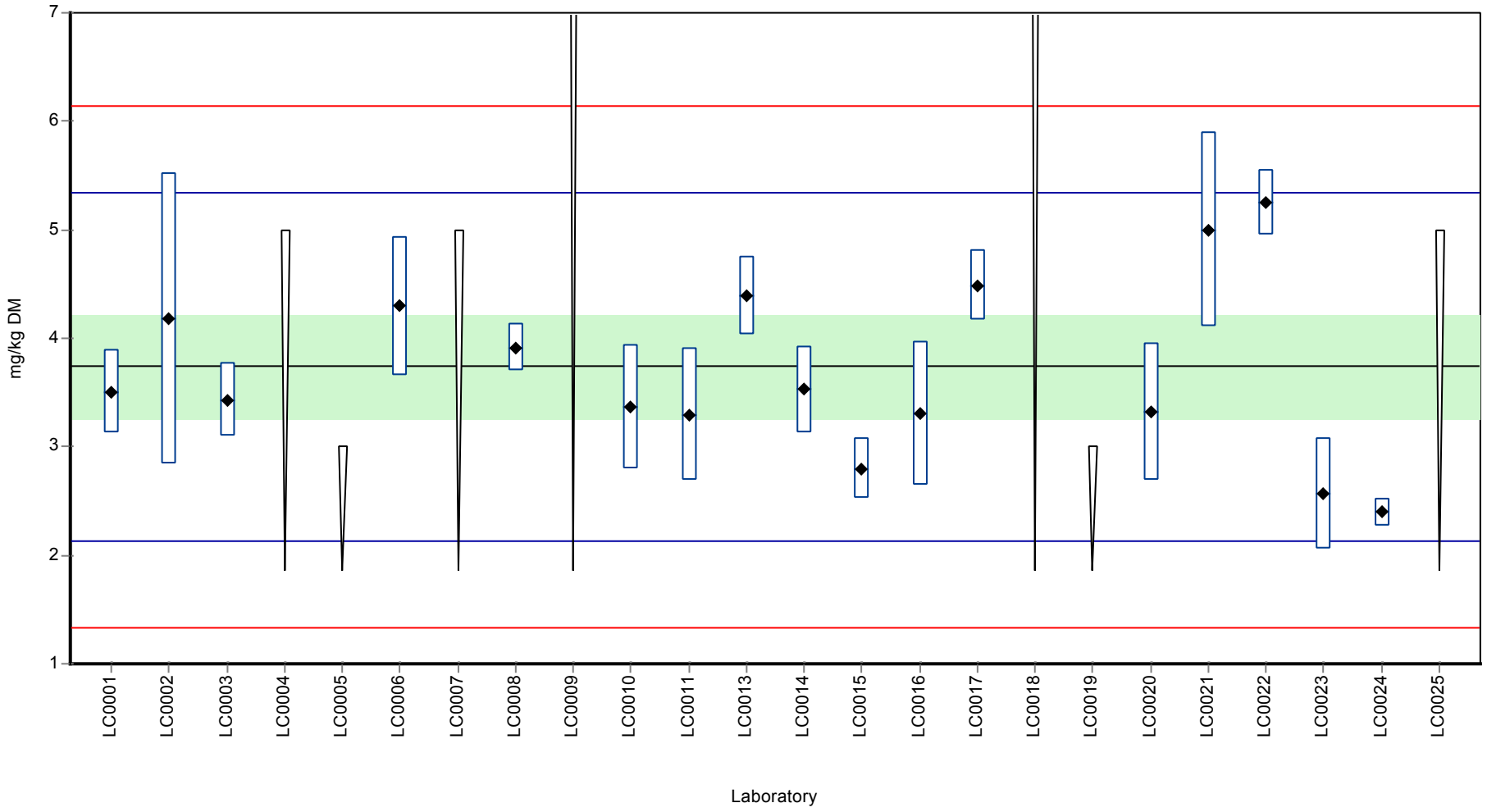
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	3.51	0.39	93.9	-0.28	
LC0002	4.18	1.34	112	0.55	
LC0003	3.431	0.343	91.8	-0.38	
LC0004	< 5 (LOQ)	-	-	-	
LC0005	< 3 (LOQ)	-	-	-	
LC0006	4.3	0.64	115	0.7	
LC0007	< 5 (LOQ)	-	-	-	
LC0008	3.917	0.219	105	0.22	
LC0009	< 10 (LOQ)	-	-	-	
LC0010	3.37	0.57	90.2	-0.46	
LC0011	3.297	0.61	88.2	-0.55	
LC0012	-	-	-	-	
LC0013	4.395	0.36	118	0.82	
LC0014	3.53	0.4	94.5	-0.26	
LC0015	2.8	0.282	74.9	-1.17	
LC0016	3.31	0.66	88.6	-0.53	
LC0017	4.4874	0.326	120	0.93	
LC0018	< 10 (LOQ)	-	-	-	
LC0019	< 3 (LOQ)	-	-	-	
LC0020	3.319	0.631	88.8	-0.52	
LC0021	5	0.9	134	1.57	
LC0022	5.25	0.299	140	1.88	
LC0023	2.57	0.514	68.8	-1.45	
LC0024	2.4	0.13	64.2	-1.67	
LC0025	< 5 (LOQ)	-	-	-	

Characteristics of parameter

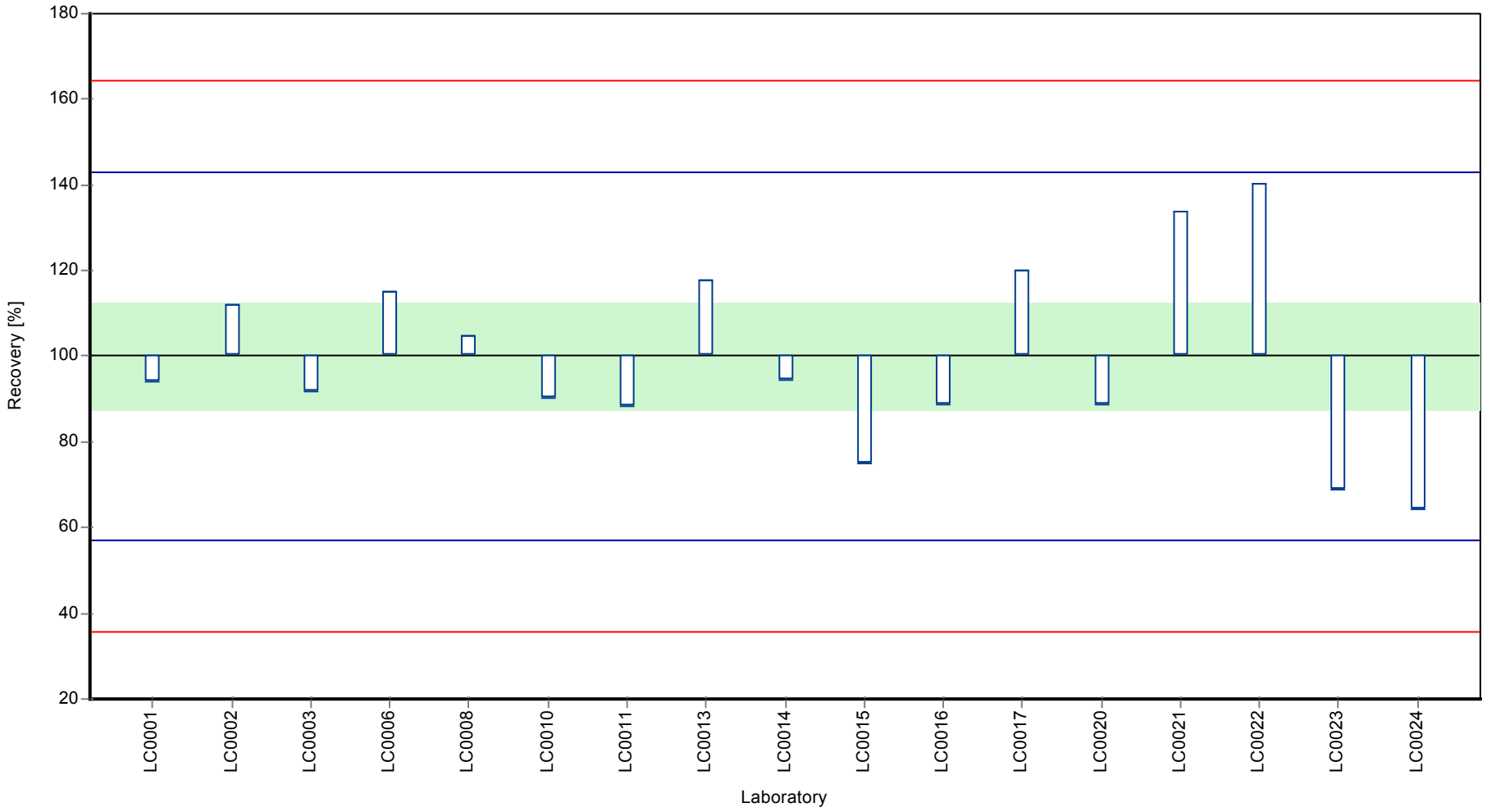
	all results	without outliers	Unit
Mean ± CI (99%)	3.71 ± 0.584	3.71 ± 0.584	mg/kg DM
Minimum	2.4	2.4	mg/kg DM
Maximum	5.25	5.25	mg/kg DM
Standard deviation	0.803	0.803	mg/kg DM
rel. standard deviation	21.6	21.6	%
n	17	17	-

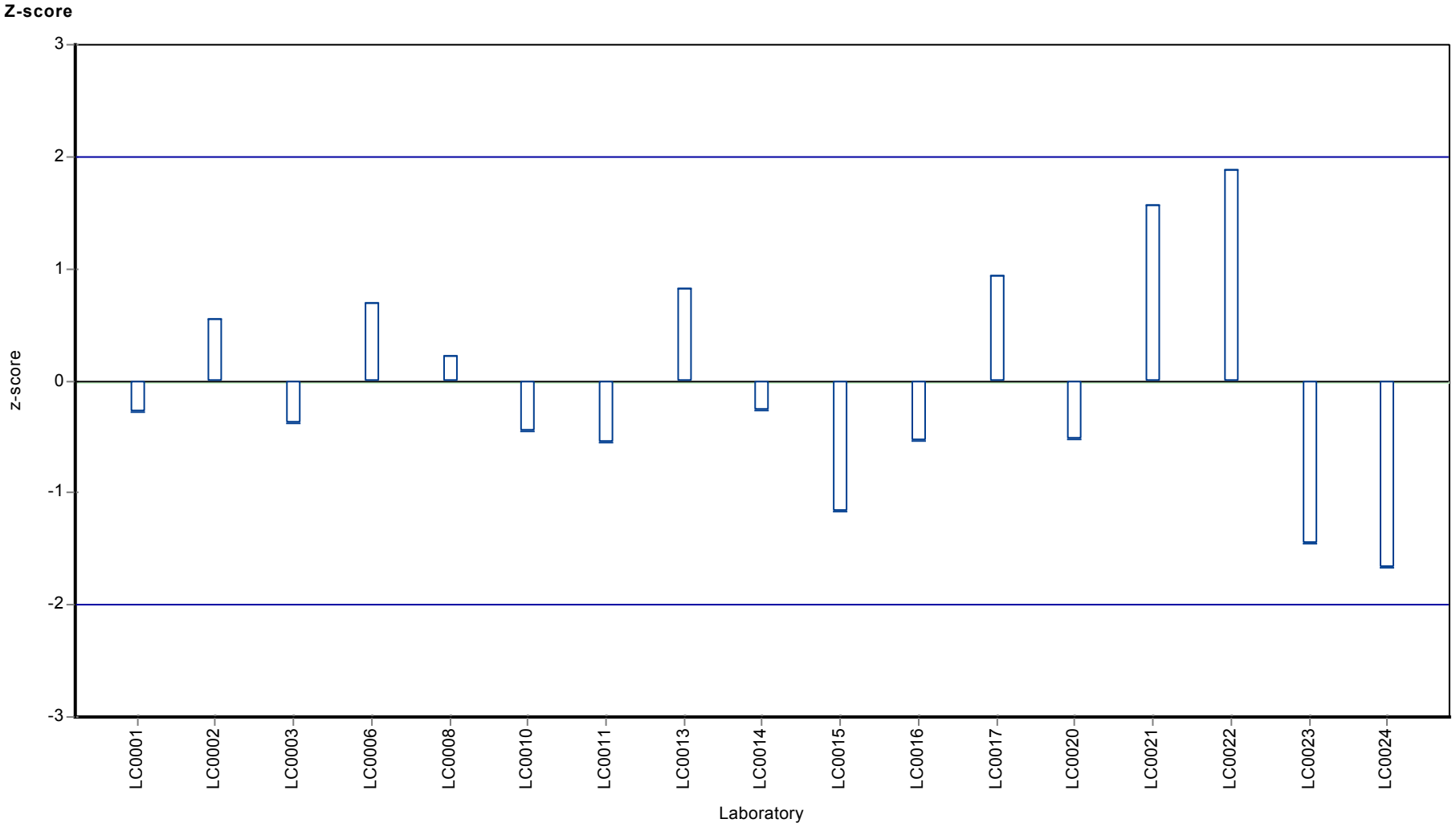
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0006
LC0008
LC0010
LC0011
LC0013
LC0014
LC0015
LC0016
LC0017
LC0020
LC0021
LC0022
LC0023
LC0024
Laboratory

Parameter oriented report

AB07

Arsenic

Unit	mg/kg DM
Assigned value ± U (k=2)	147 ± 3.34
Criterion	8.02 (5.5 %)
Minimum - Maximum	134 - 161
Control test value ± U (k=2)	-

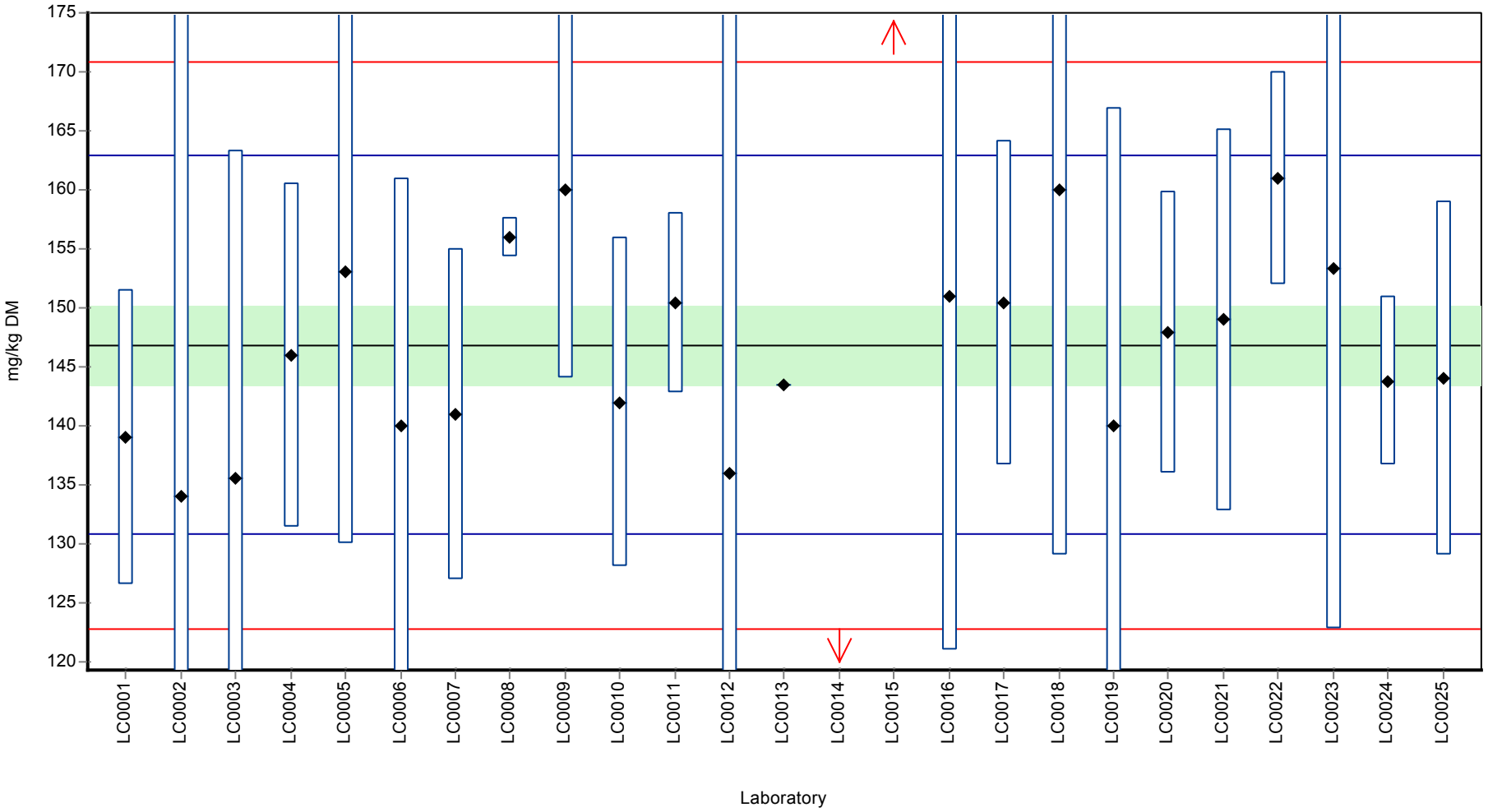
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	139	12.5	94.7	-0.97	
LC0002	134	42	91.3	-1.6	
LC0003	135.5	27.9	92.3	-1.41	
LC0004	146	14.6	99.4	-0.1	
LC0005	153	23	104	0.77	
LC0006	140	21	95.4	-0.85	
LC0007	141	14	96	-0.73	
LC0008	156	1.69	106	1.15	
LC0009	160	16	109	1.64	
LC0010	142	14	96.7	-0.6	
LC0011	150.4	7.67	102	0.45	
LC0012	136	42	92.6	-1.35	
LC0013	143.41	0.09	97.7	-0.42	
LC0014	107	11	72.9	-4.97	H
LC0015	219	21.9	149	9	H
LC0016	151	30	103	0.52	
LC0017	150.47	13.76	102	0.46	
LC0018	160	31	109	1.64	
LC0019	140	27	95.4	-0.85	
LC0020	147.86	11.95	101	0.13	
LC0021	149	16.2	101	0.27	
LC0022	161	9.02	110	1.77	
LC0023	153.4	30.68	104	0.82	
LC0024	143.79	7.19	97.9	-0.38	
LC0025	144	15	98.1	-0.35	

Characteristics of parameter

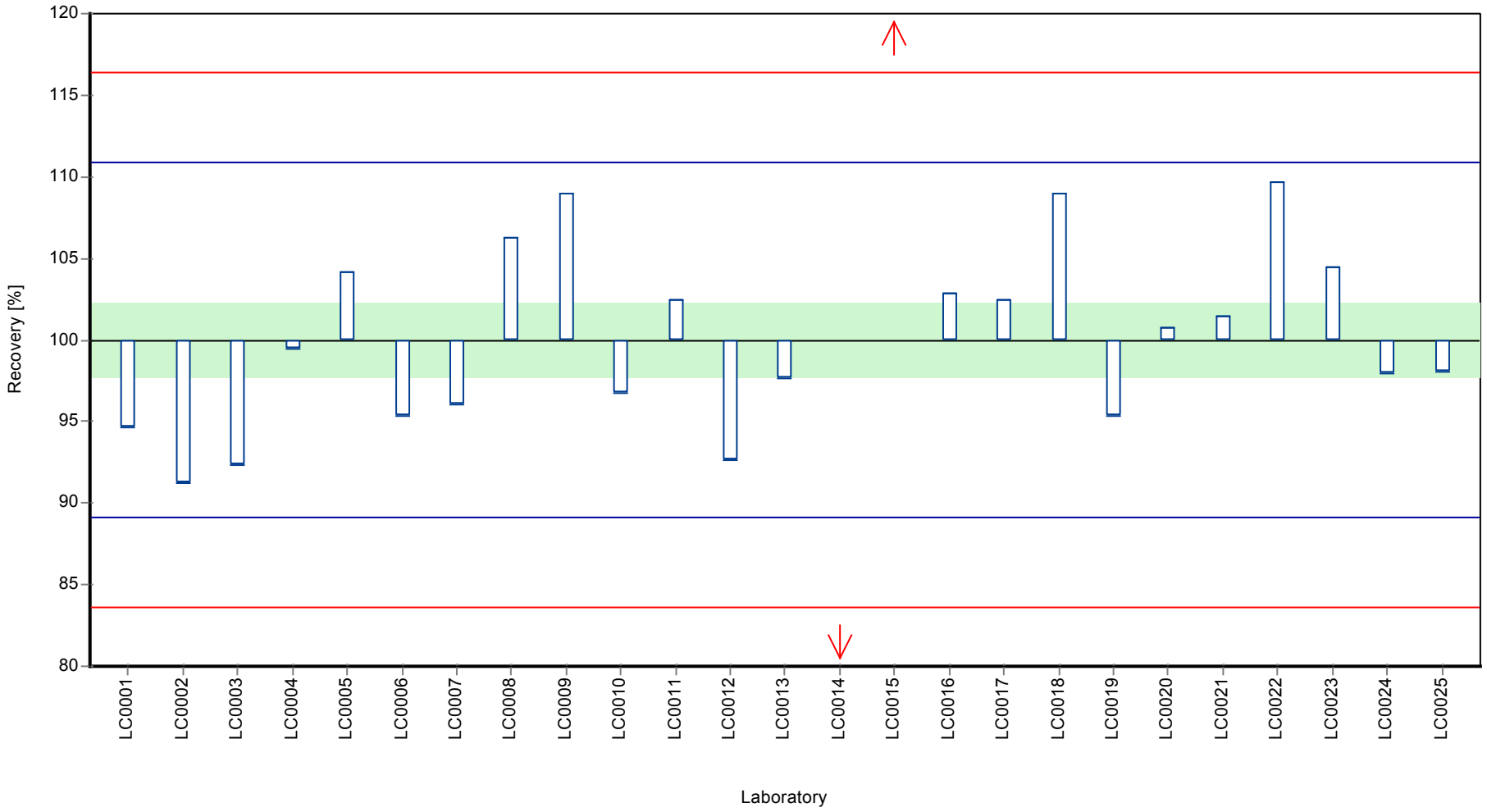
	all results	without outliers	Unit
Mean ± CI (99%)	148 ± 11.1	147 ± 5.01	mg/kg DM
Minimum	107	134	mg/kg DM
Maximum	219	161	mg/kg DM
Standard deviation	18.4	8.02	mg/kg DM
rel. standard deviation	12.5	5.46	%
n	25	23	-

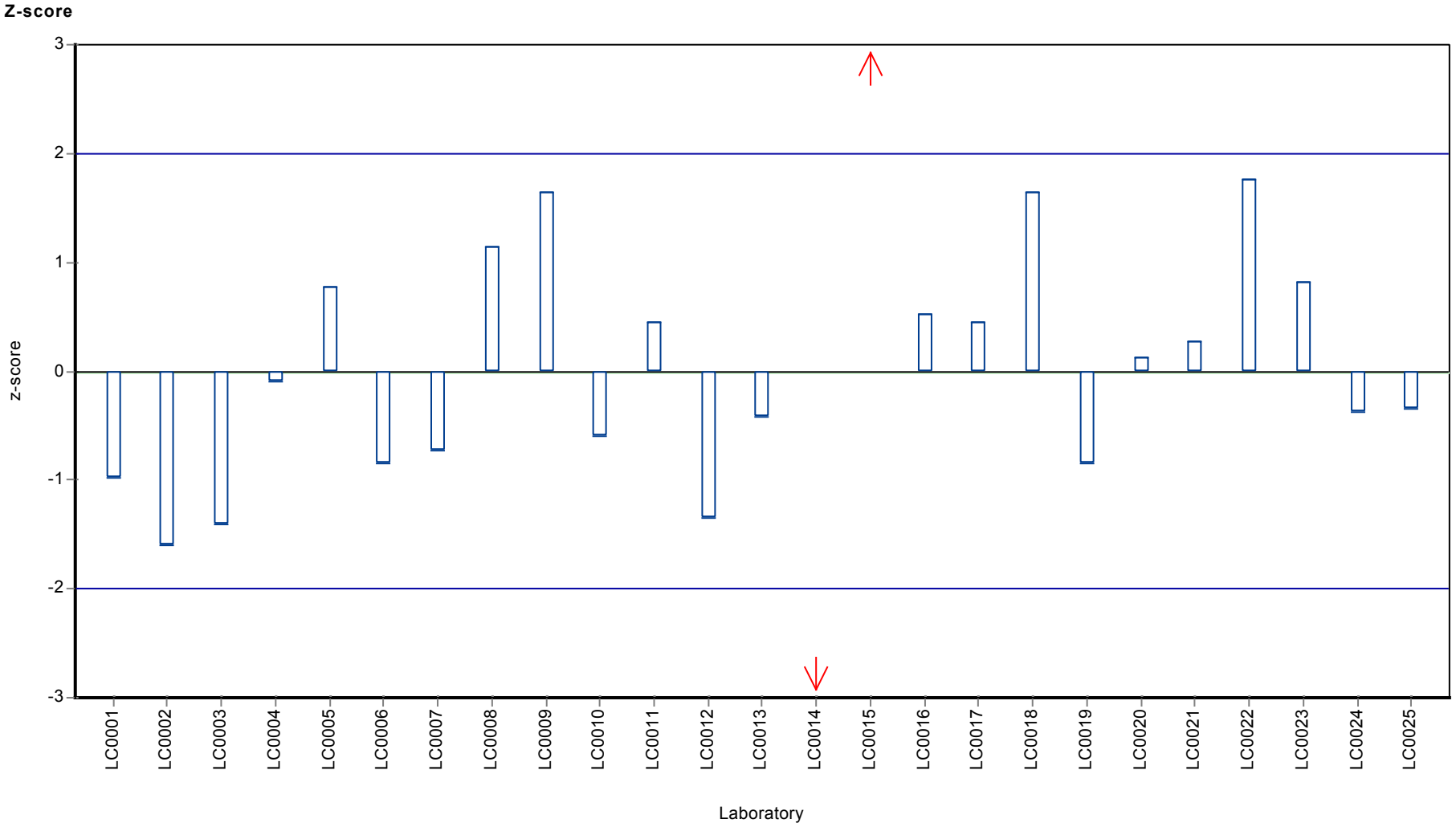
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
LC0007
LC0008
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Barium

Unit	mg/kg DM
Assigned value ± U (k=2)	732 ± 51.4
Criterion	176 (24 %)
Minimum - Maximum	240 - 895
Control test value ± U (k=2)	-

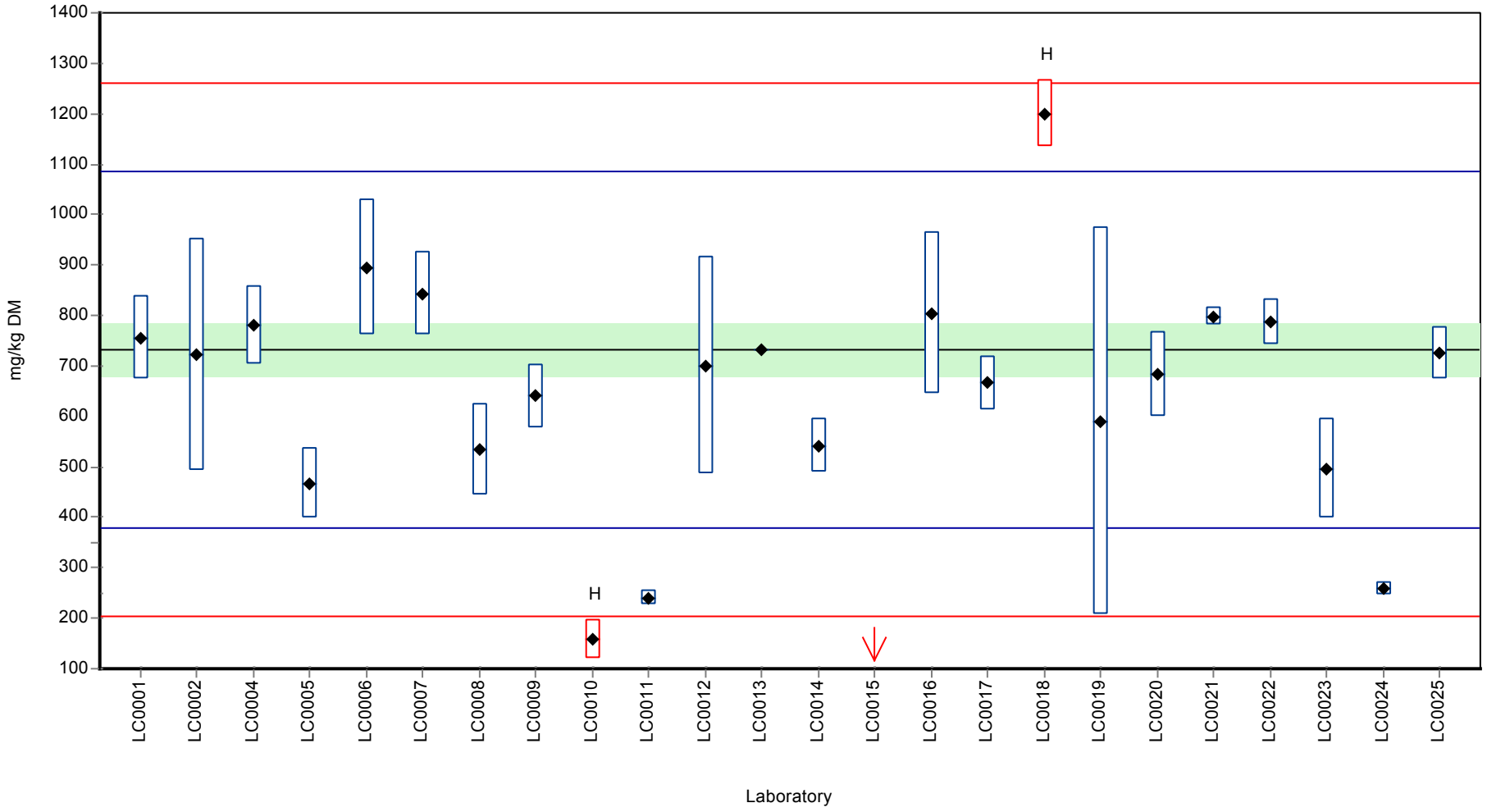
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	756	82.4	103	0.13	
LC0002	722	231	98.6	-0.06	
LC0003	-	-	-	-	
LC0004	782	78.2	107	0.28	
LC0005	467	70	63.8	-1.51	
LC0006	895	134	122	0.92	
LC0007	844	84	115	0.63	
LC0008	534.5	91.42	73	-1.12	
LC0009	640	64	87.4	-0.53	
LC0010	158	39.5	21.6	-3.26	H
LC0011	240.4	15.54	32.8	-2.79	
LC0012	701	215	95.7	-0.18	
LC0013	733.7	0.2	100	0.01	
LC0014	542	54	74	-1.08	
LC0015	70	7	9.6	-3.76	H
LC0016	805	161	110	0.41	
LC0017	665.97	52.67	90.9	-0.38	
LC0018	1200	66	164	2.65	H
LC0019	590	384	80.5	-0.81	
LC0020	684.53	84.88	93.5	-0.27	
LC0021	798	18.2	109	0.37	
LC0022	788	45.7	108	0.32	
LC0023	496.1	99.22	67.7	-1.34	
LC0024	257.79	12.9	35.2	-2.69	
LC0025	726	51	99.1	-0.04	

Characteristics of parameter

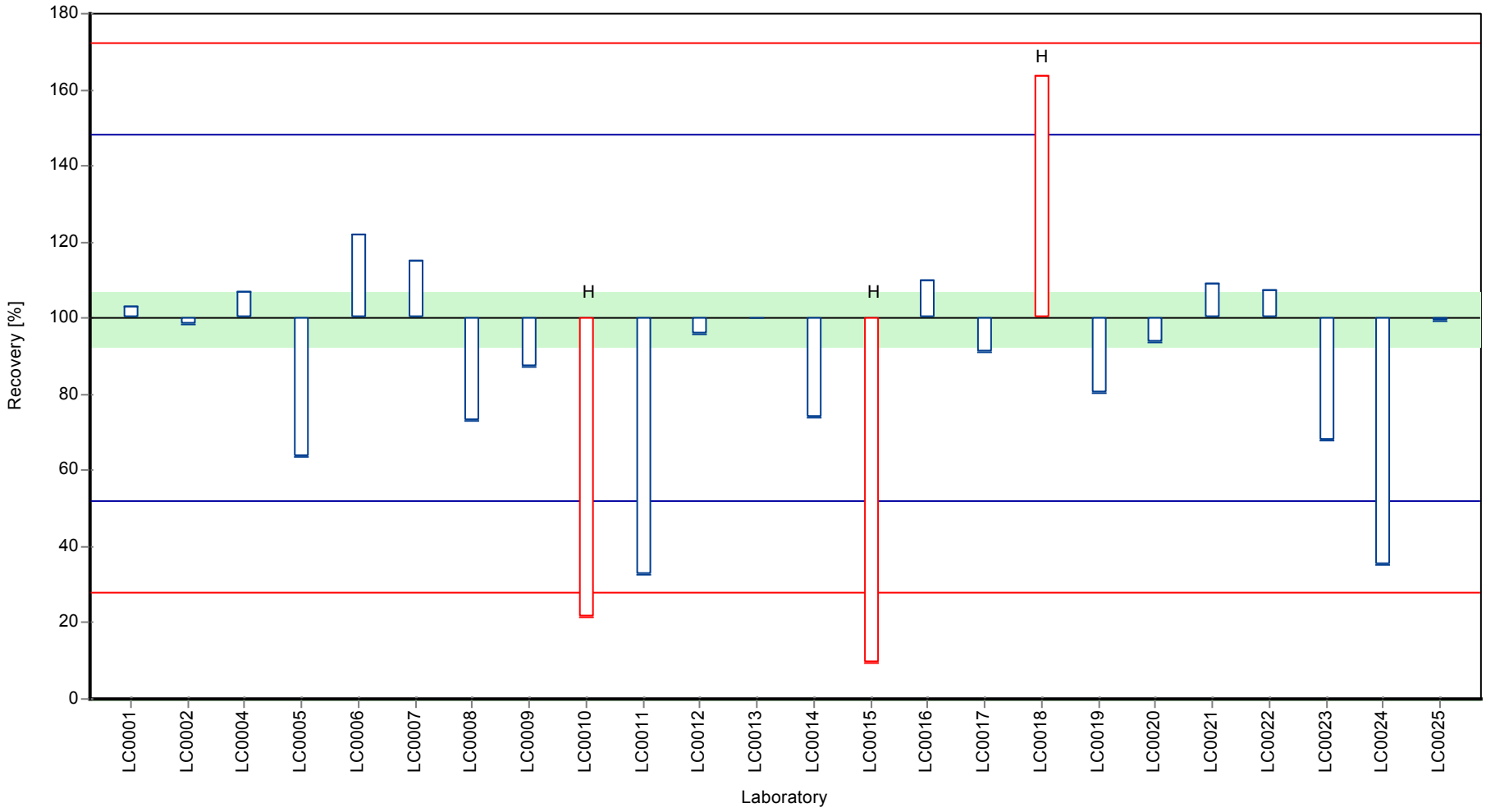
	all results	without outliers	Unit
Mean ± CI (99%)	629 ± 156	651 ± 115	mg/kg DM
Minimum	70	240	mg/kg DM
Maximum	1200	895	mg/kg DM
Standard deviation	255	176	mg/kg DM
rel. standard deviation	40.5	27.1	%
n	24	21	-

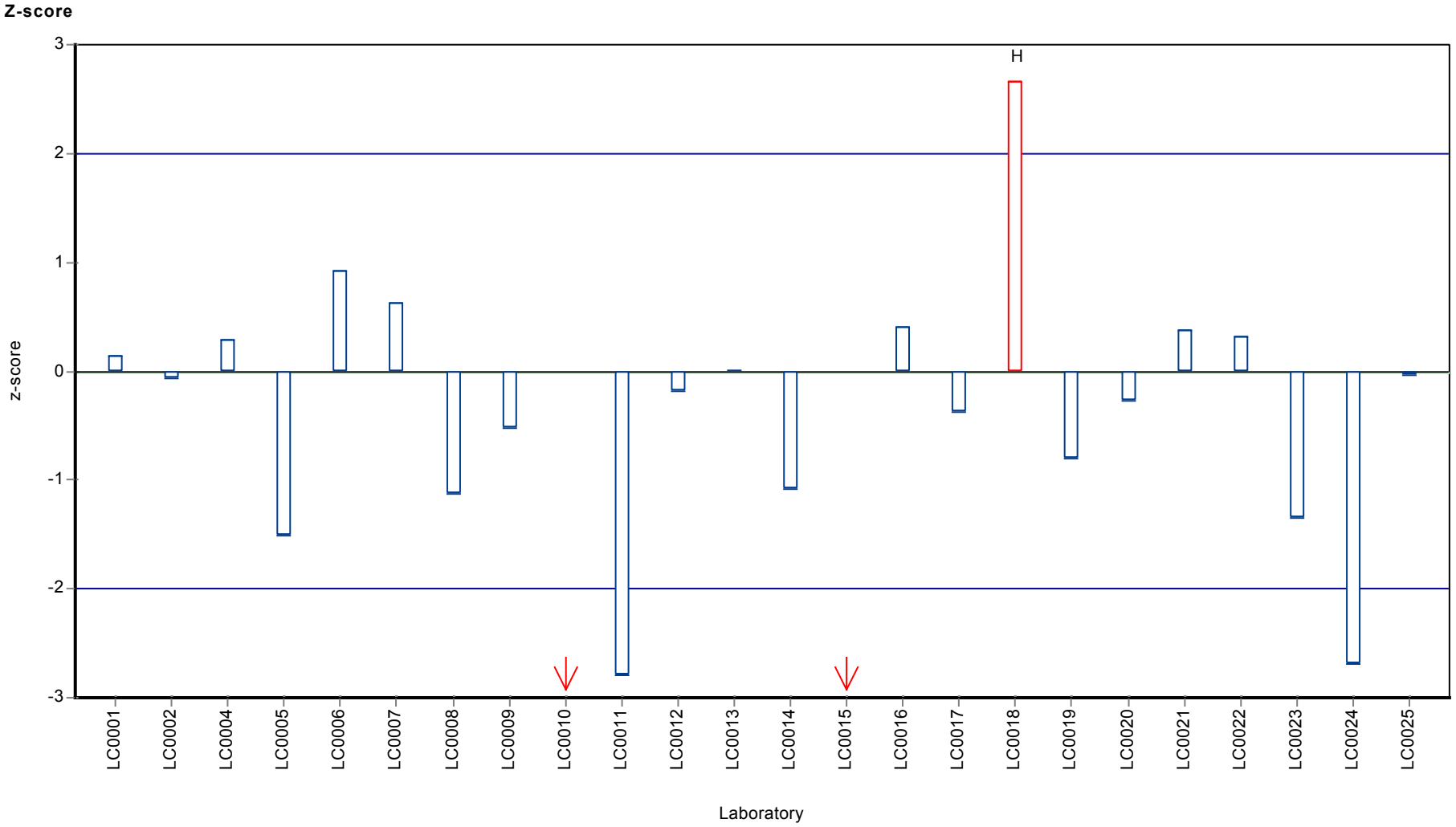
Graphical presentation of results

Results



Recovery rate




Z-score
z-score
3
2
1
0
-1
-2
-3
H
LC0001
LC0002
LC0004
LC0005
LC0006
LC0007
LC0008
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Benzo[a]pyrene

Unit	mg/kg DM
Assigned value ± U (k=2)	0.072 ± 0.0118
Criterion	0.0244 (34 %)
Minimum - Maximum	0.031 - 0.11
Control test value ± U (k=2)	-

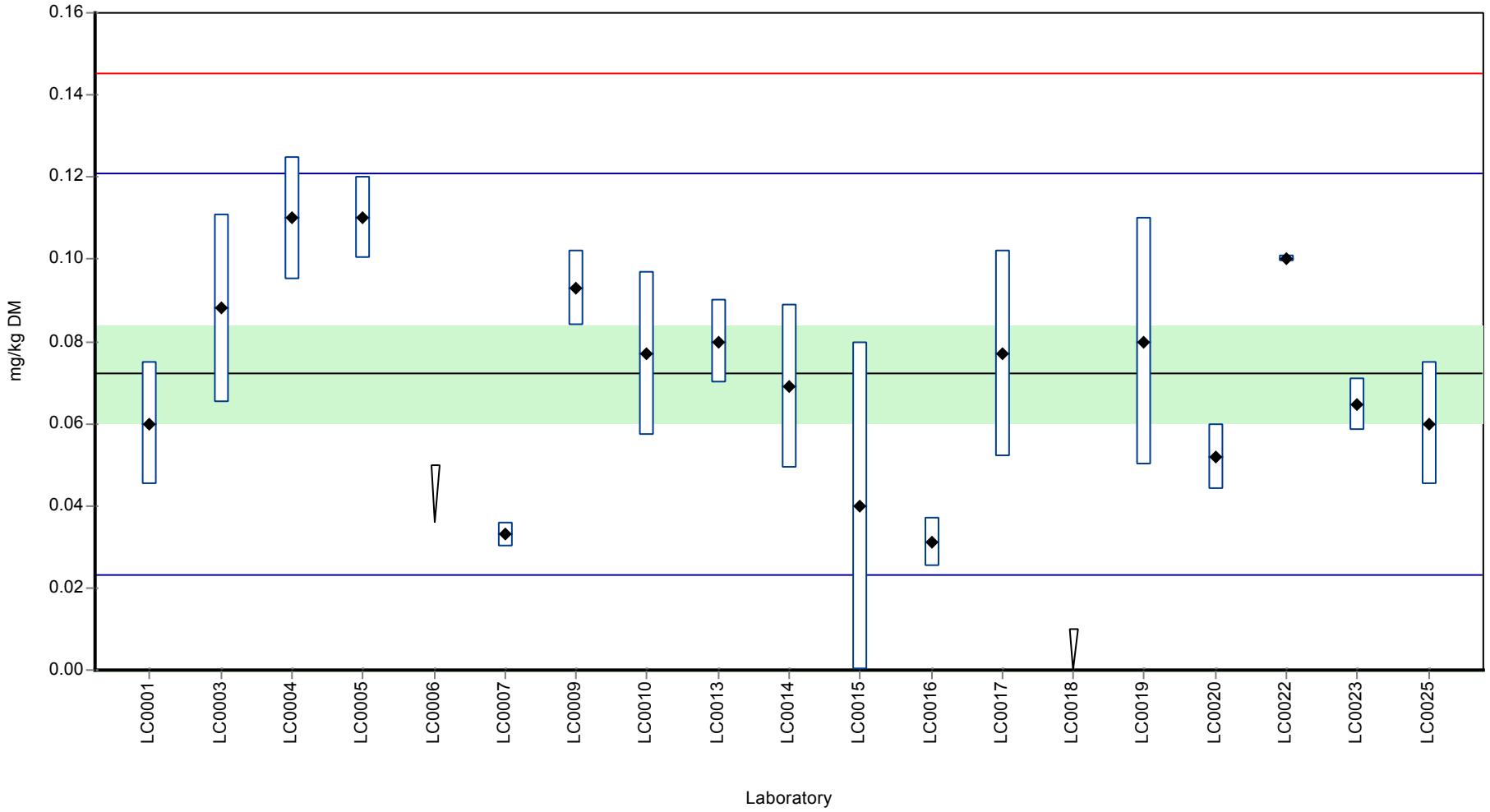
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	0.06	0.015	83.3	-0.49	
LC0002	-	-	-	-	
LC0003	0.088	0.023	122	0.65	
LC0004	0.11	0.015	153	1.56	
LC0005	0.11	0.01	153	1.56	
LC0006	< 0.05 (LOQ)	-	-	-	
LC0007	0.033	0.003	45.8	-1.6	
LC0008	-	-	-	-	
LC0009	0.093	0.0093	129	0.86	
LC0010	0.077	0.02	107	0.2	
LC0011	-	-	-	-	
LC0012	-	-	-	-	
LC0013	0.08	0.01	111	0.33	
LC0014	0.069	0.02	95.8	-0.13	
LC0015	0.04	0.04	55.5	-1.31	
LC0016	0.031	0.006	43	-1.68	
LC0017	0.077	0.025	107	0.2	
LC0018	< 0.01 (LOQ)	-	-	-	
LC0019	0.08	0.03	111	0.33	
LC0020	0.052	0.008	72.2	-0.82	
LC0021	-	-	-	-	
LC0022	0.1	0.00081	139	1.15	
LC0023	0.0647	0.00647	89.8	-0.3	
LC0024	-	-	-	-	
LC0025	0.06	0.015	83.3	-0.49	

Characteristics of parameter

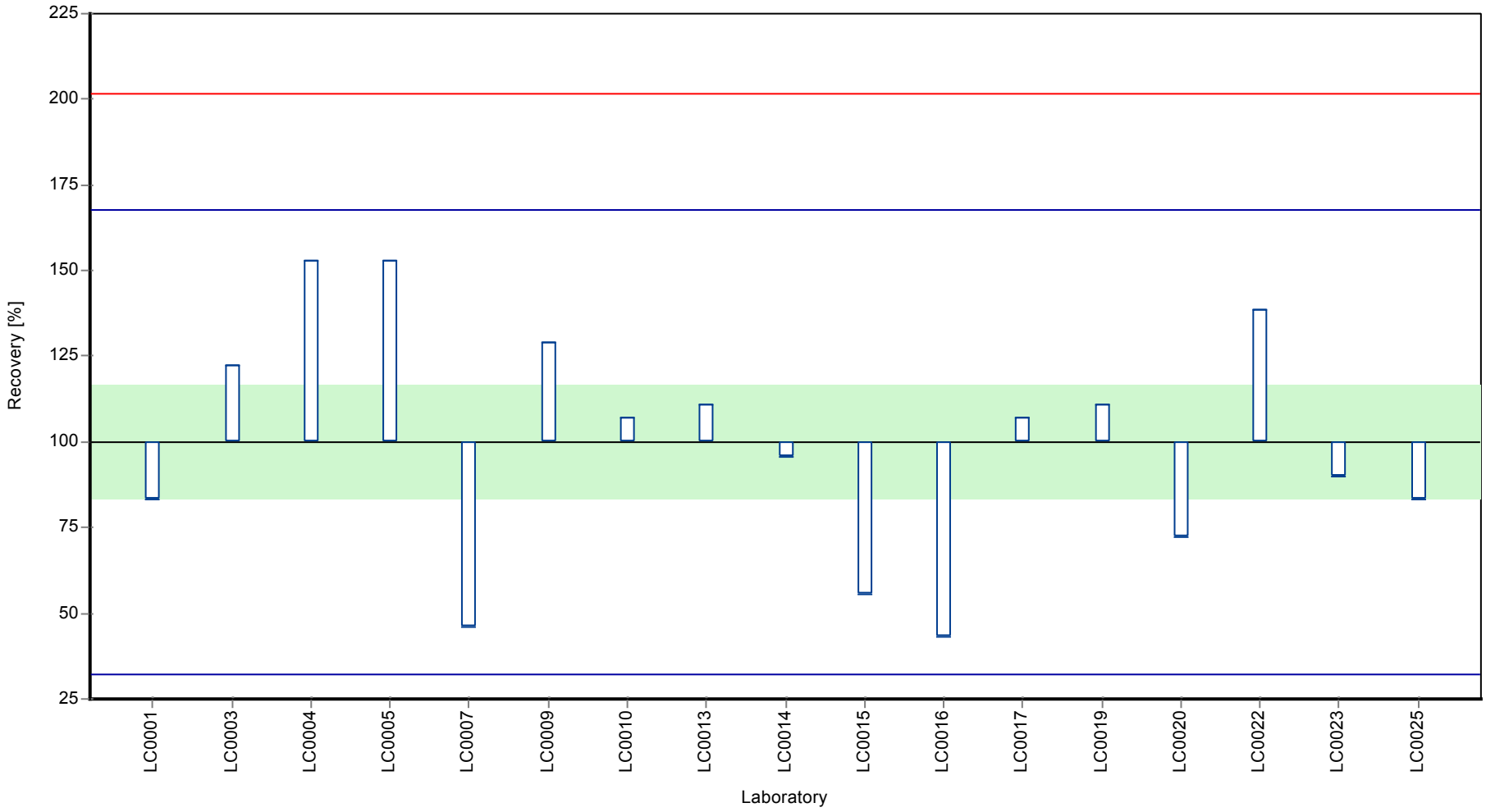
	all results	without outliers	Unit
Mean ± CI (99%)	0.072 ± 0.0178	0.072 ± 0.0178	mg/kg DM
Minimum	0.031	0.031	mg/kg DM
Maximum	0.11	0.11	mg/kg DM
Standard deviation	0.0244	0.0244	mg/kg DM
rel. standard deviation	33.9	33.9	%
n	17	17	-

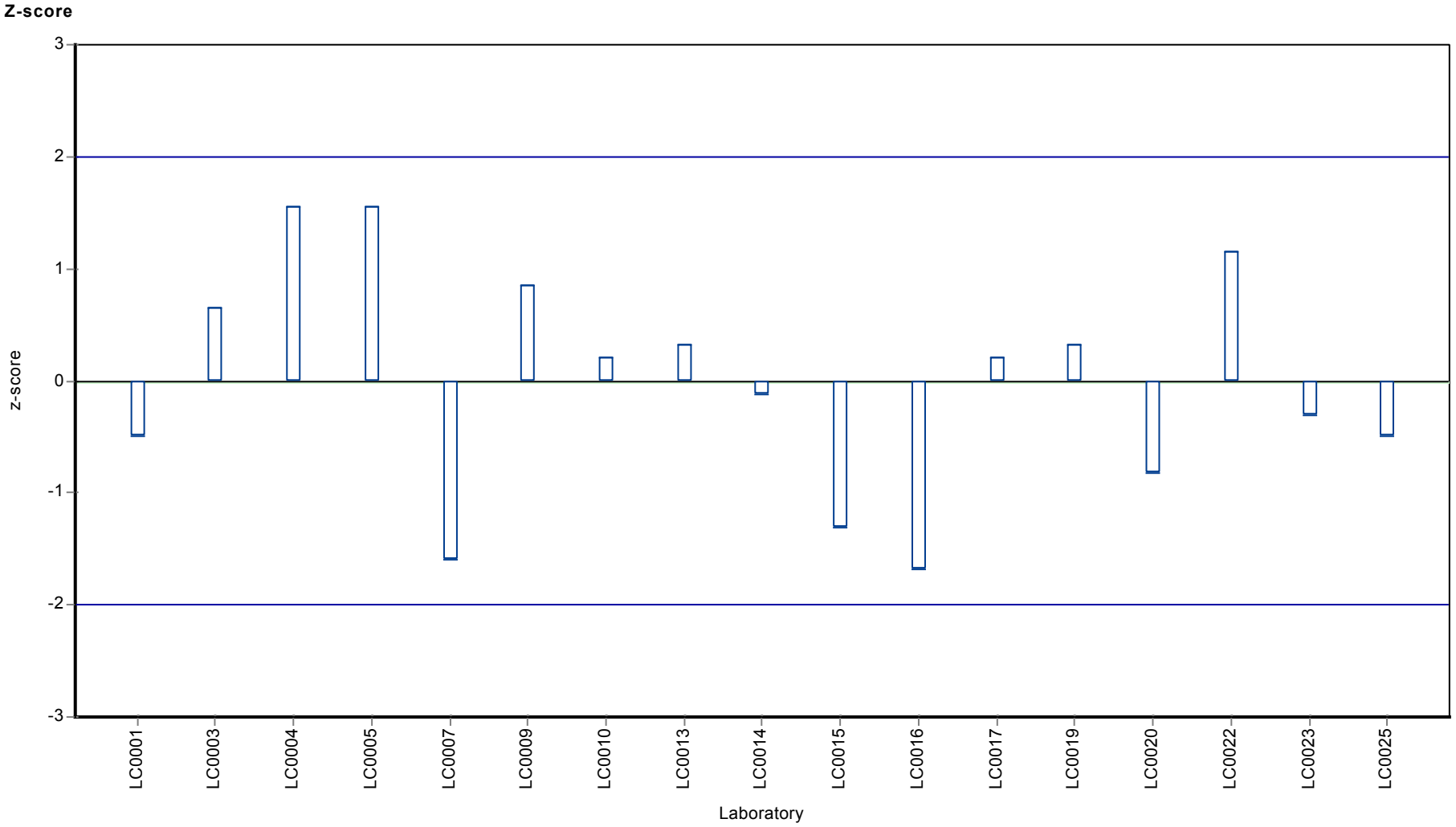
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0013
LC0014
LC0015
LC0016
LC0017
LC0019
LC0020
LC0022
LC0023
LC0025
Laboratory

Parameter oriented report

AB07

Cadmium

Unit	mg/kg DM
Assigned value ± U (k=2)	10.9 ± 0.473
Criterion	1.18 (11 %)
Minimum - Maximum	8.28 - 12.5
Control test value ± U (k=2)	-

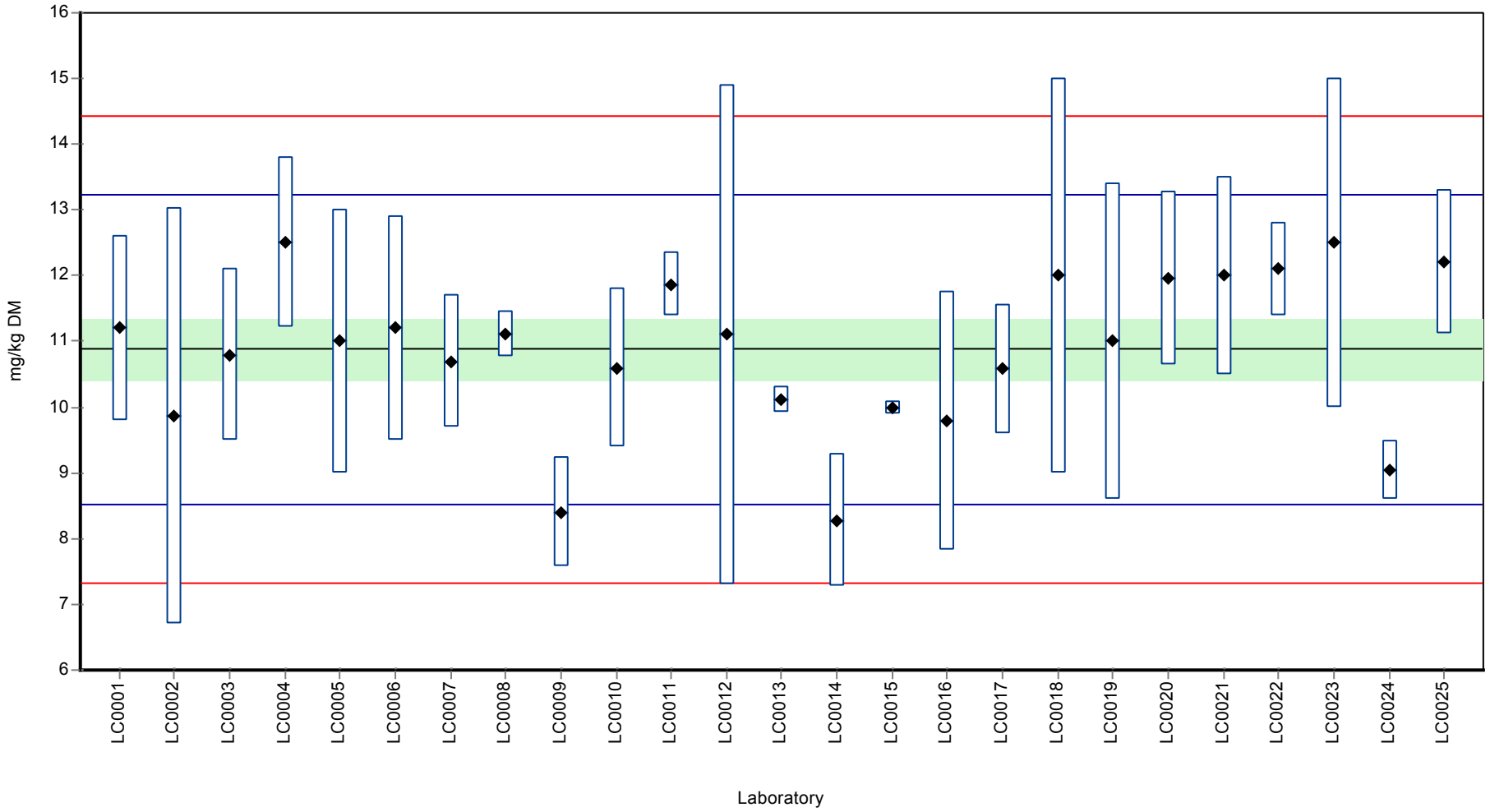
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	11.2	1.41	103	0.27	
LC0002	9.86	3.16	90.7	-0.86	
LC0003	10.8	1.3	99.3	-0.06	
LC0004	12.5	1.3	115	1.37	
LC0005	11	2	101	0.1	
LC0006	11.2	1.7	103	0.27	
LC0007	10.7	1	98.4	-0.15	
LC0008	11.108	0.35	102	0.2	
LC0009	8.4	0.84	77.2	-2.09	
LC0010	10.6	1.2	97.5	-0.23	
LC0011	11.87	0.49	109	0.84	
LC0012	11.1	3.8	102	0.19	
LC0013	10.11	0.2	93	-0.65	
LC0014	8.28	1	76.1	-2.2	
LC0015	9.99	0.1	91.9	-0.75	
LC0016	9.79	1.96	90	-0.92	
LC0017	10.58	0.978	97.3	-0.25	
LC0018	12	3	110	0.95	
LC0019	11	2.4	101	0.1	
LC0020	11.96	1.315	110	0.92	
LC0021	12	1.5	110	0.95	
LC0022	12.1	0.714	111	1.04	
LC0023	12.5	2.5	115	1.37	
LC0024	9.051	0.45	83.2	-1.54	
LC0025	12.2	1.1	112	1.12	

Characteristics of parameter

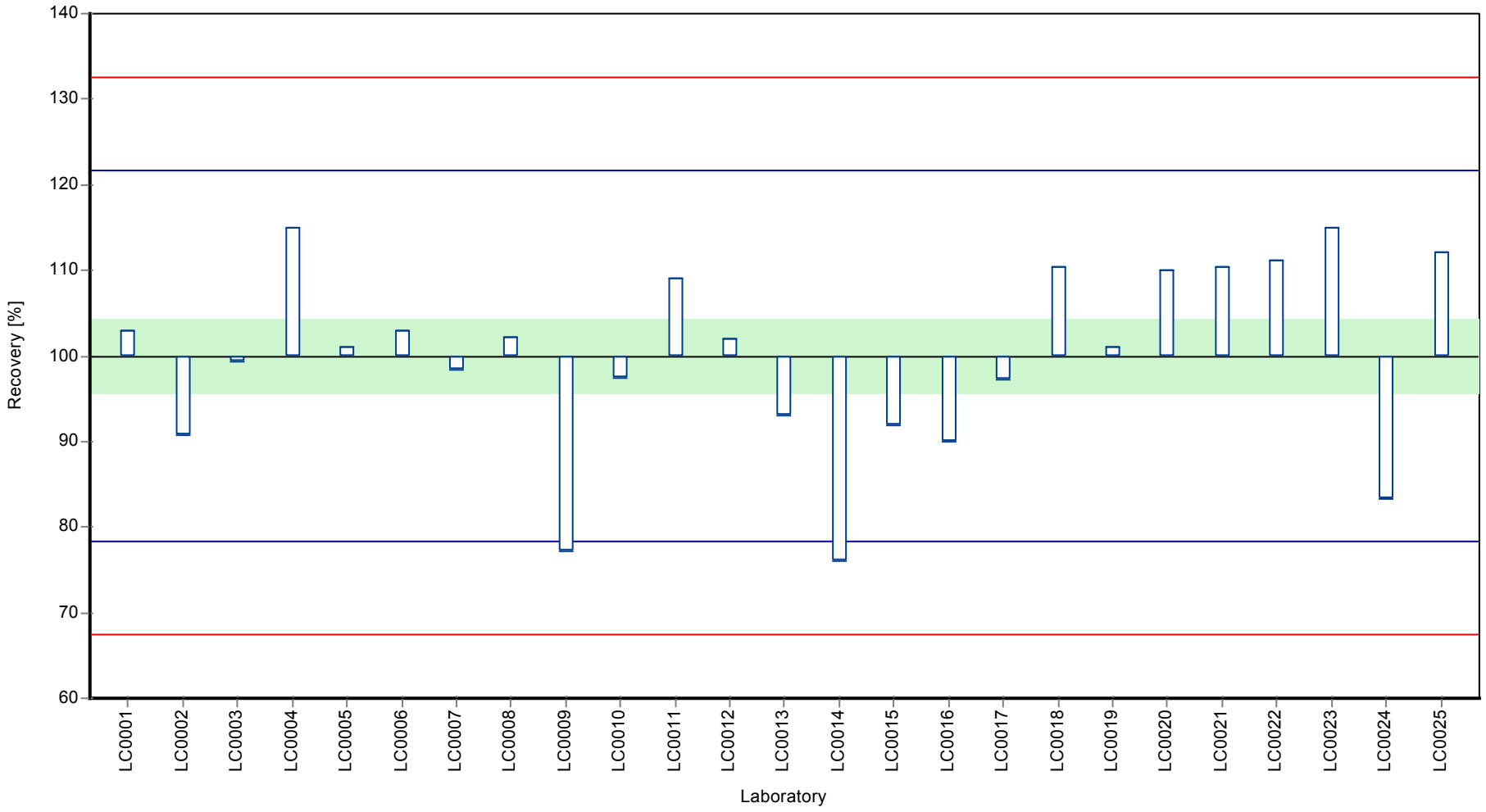
	all results	without outliers	Unit
Mean ± CI (99%)	10.9 ± 0.709	10.9 ± 0.709	mg/kg DM
Minimum	8.28	8.28	mg/kg DM
Maximum	12.5	12.5	mg/kg DM
Standard deviation	1.18	1.18	mg/kg DM
rel. standard deviation	10.9	10.9	%
n	25	25	-

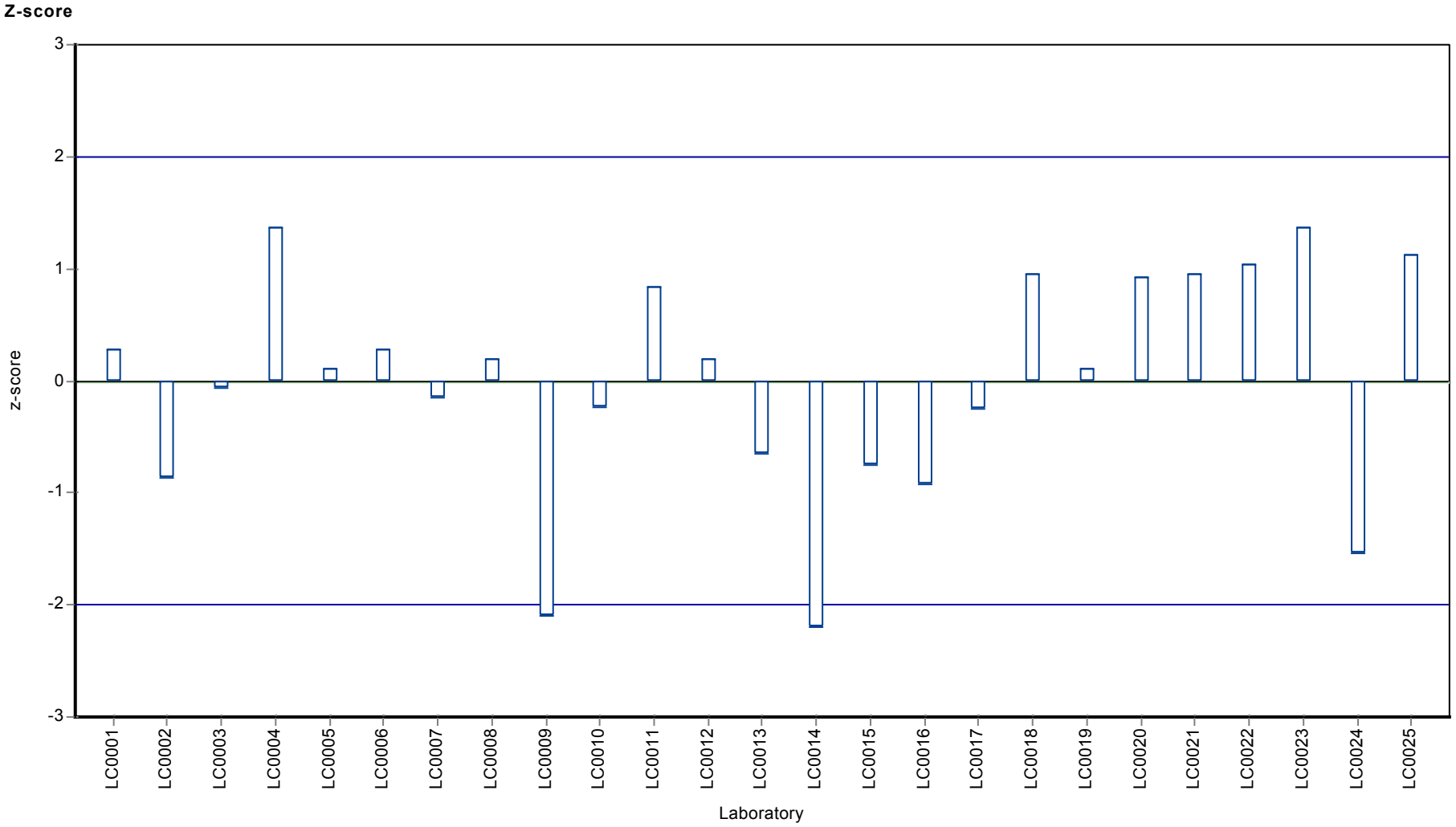
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
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LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Chromium

Unit	mg/kg DM
Assigned value ± U (k=2)	324 ± 13.2
Criterion	36.6 (11 %)
Minimum - Maximum	234 - 396
Control test value ± U (k=2)	-

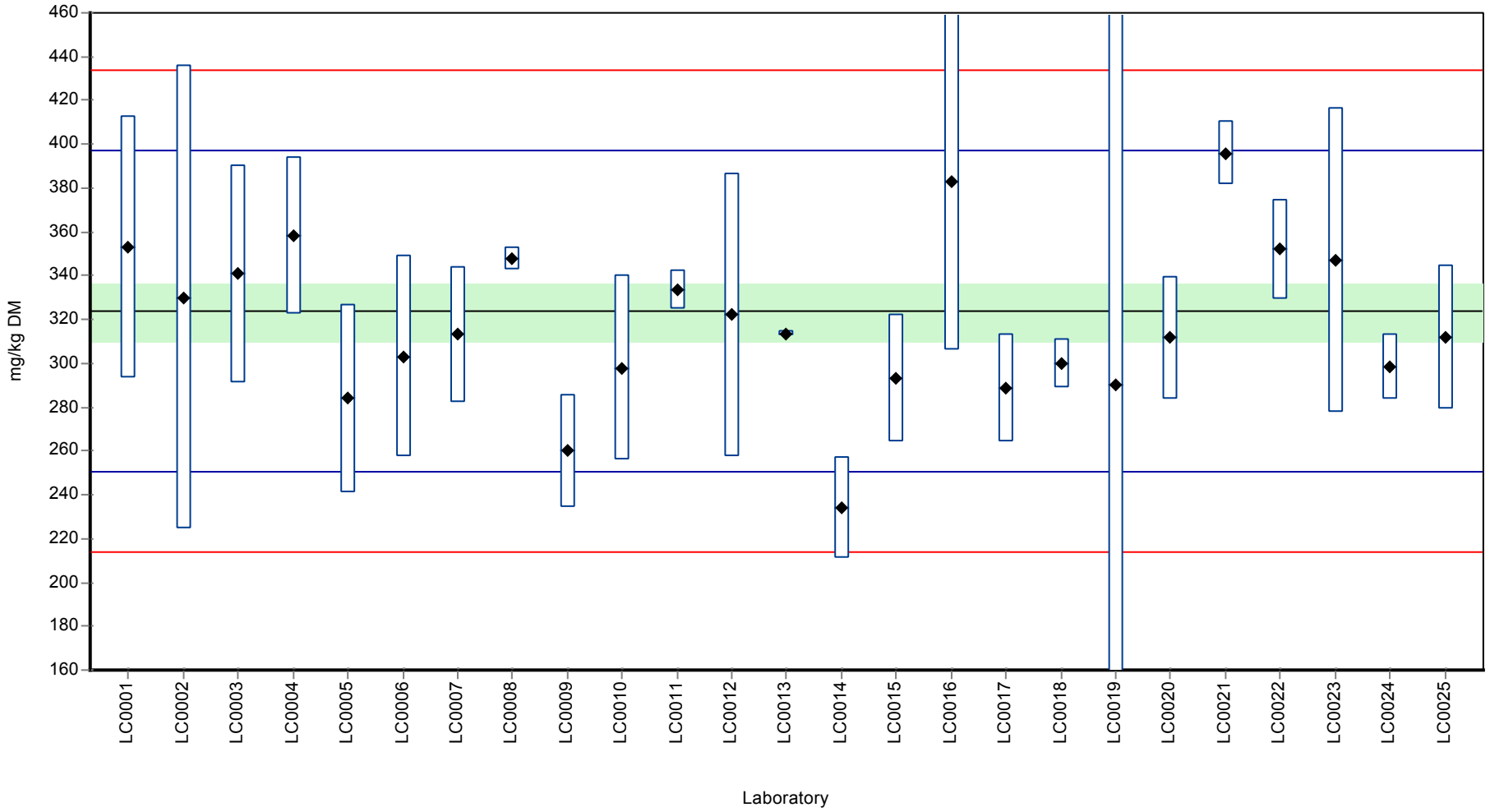
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	353	59.7	109	0.8	
LC0002	330	106	102	0.17	
LC0003	340.8	49.7	105	0.47	
LC0004	358	35.8	111	0.94	
LC0005	284	43	87.7	-1.08	
LC0006	303	46	93.6	-0.56	
LC0007	313	31	96.7	-0.29	
LC0008	347.75	5.35	107	0.66	
LC0009	260	26	80.3	-1.74	
LC0010	298	42	92.1	-0.7	
LC0011	333.5	8.74	103	0.27	
LC0012	322	65	99.5	-0.05	
LC0013	313.5	1	96.9	-0.28	
LC0014	234	23	72.3	-2.45	
LC0015	293	29.3	90.5	-0.84	
LC0016	383	77	118	1.62	
LC0017	288.79	24.57	89.2	-0.95	
LC0018	300	11	92.7	-0.65	
LC0019	290	276	89.6	-0.92	
LC0020	311.8	28.06	96.3	-0.32	
LC0021	396	14.4	122	1.97	
LC0022	352	22.9	109	0.77	
LC0023	347.2	69.44	107	0.64	
LC0024	298.5	14.9	92.2	-0.69	
LC0025	312	33	96.4	-0.32	

Characteristics of parameter

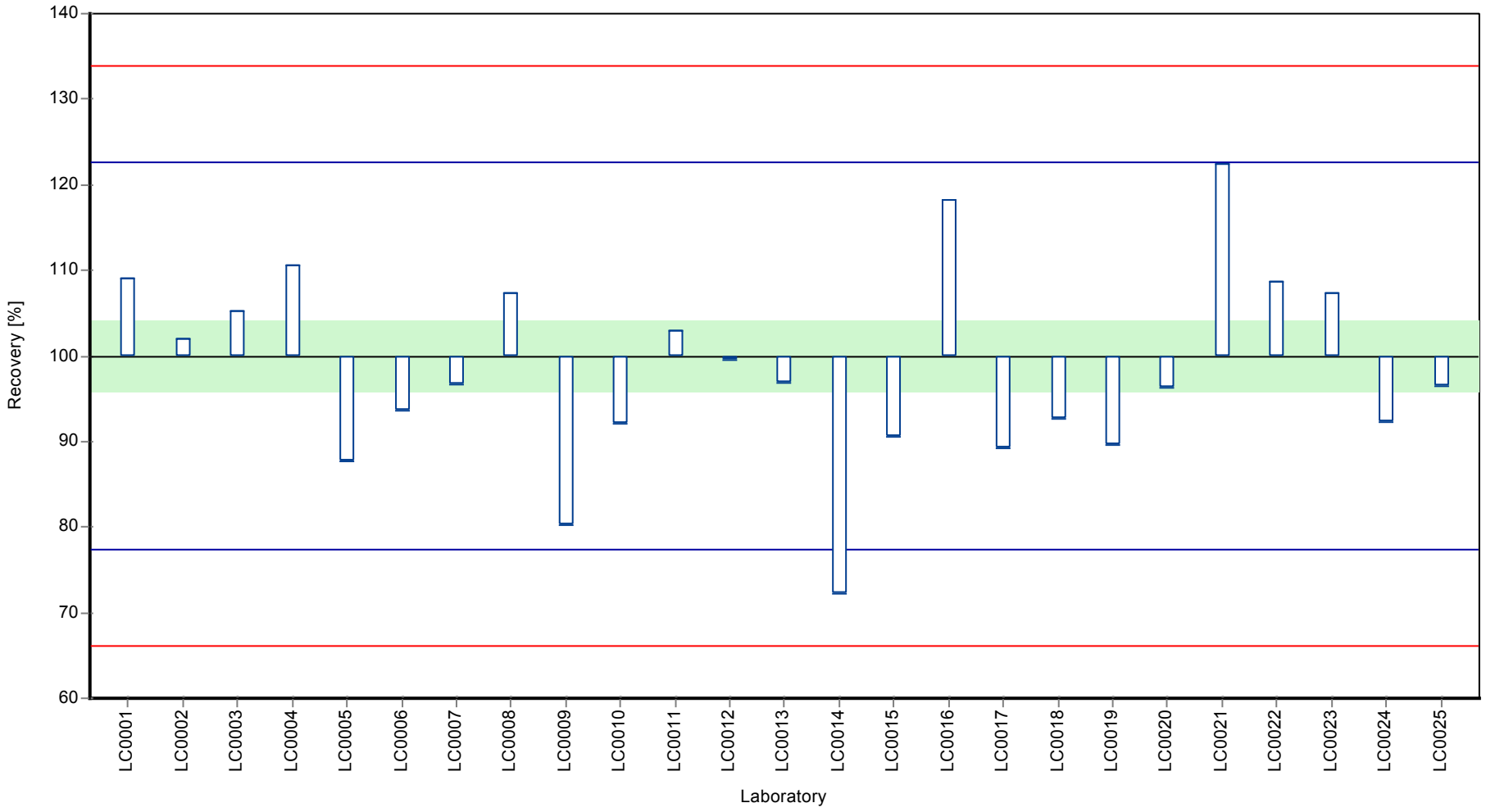
	all results	without outliers	Unit
Mean ± CI (99%)	319 ± 22	319 ± 22	mg/kg DM
Minimum	234	234	mg/kg DM
Maximum	396	396	mg/kg DM
Standard deviation	36.6	36.6	mg/kg DM
rel. standard deviation	11.5	11.5	%
n	25	25	-

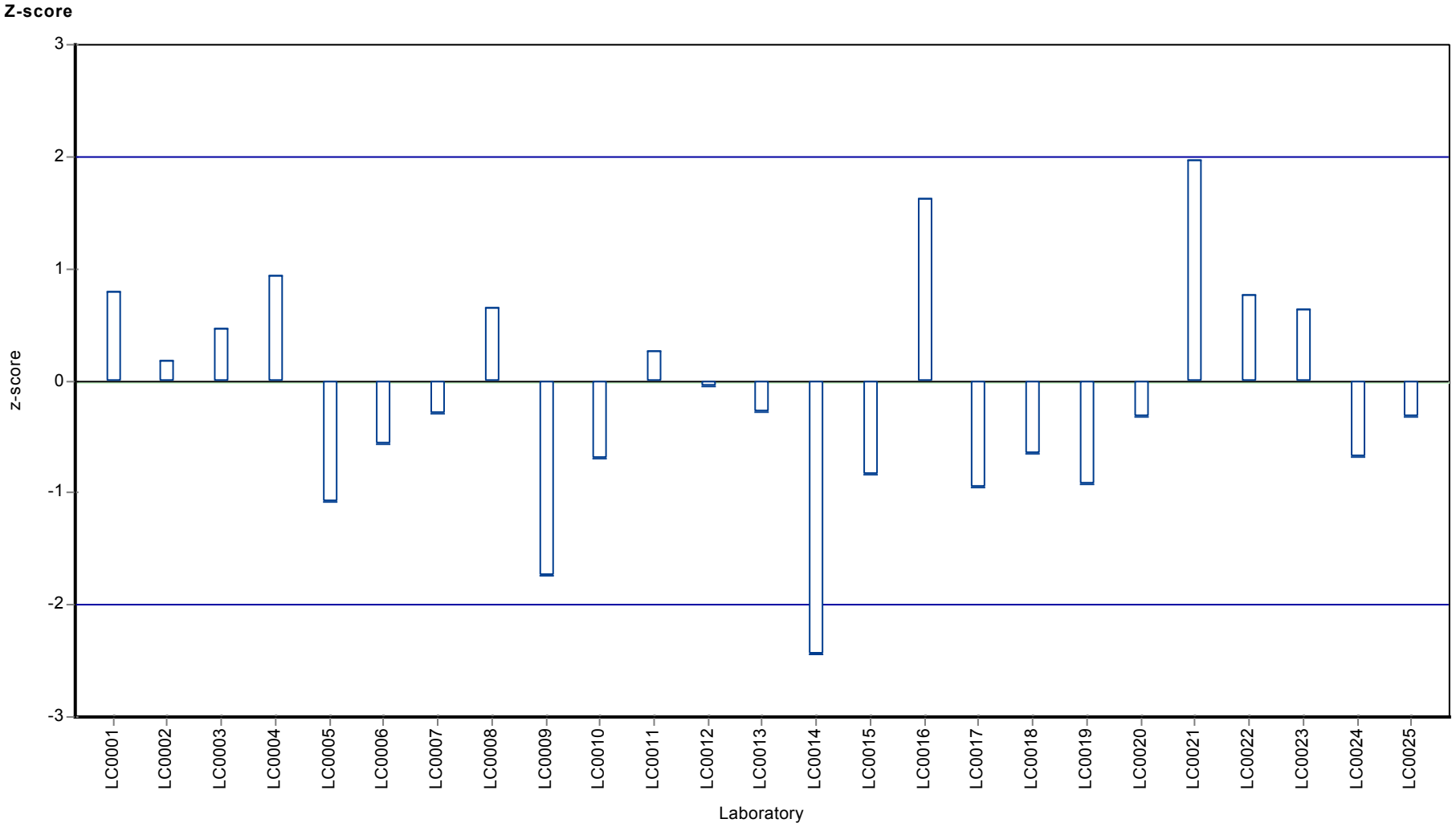
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
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LC0008
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Cobalt

Unit	mg/kg DM
Assigned value ± U (k=2)	297 ± 18.9
Criterion	40 (13 %)
Minimum - Maximum	227 - 381
Control test value ± U (k=2)	-

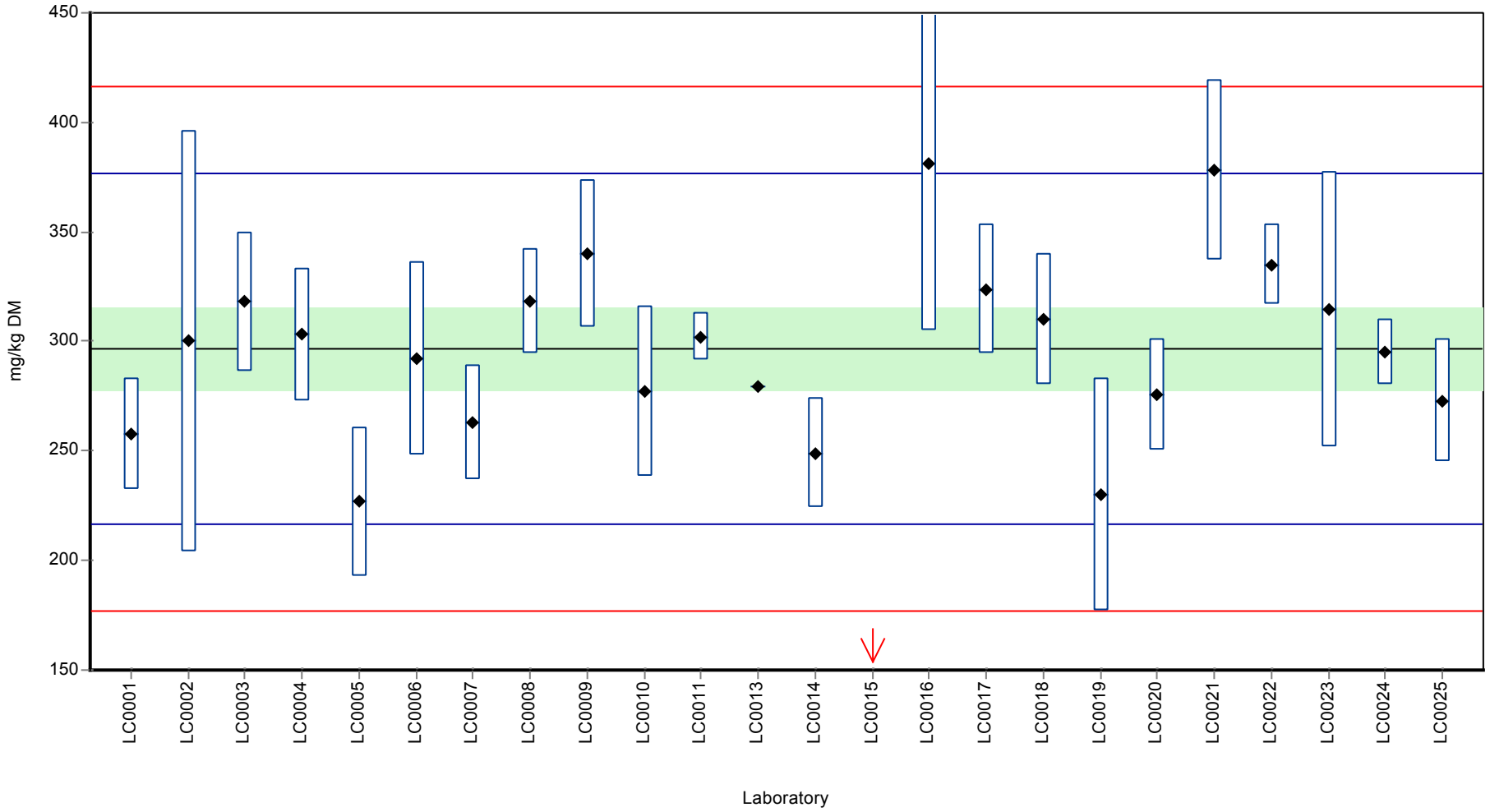
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	258	25.5	87	-0.96	
LC0002	300	96	101	0.09	
LC0003	318.1	31.8	107	0.54	
LC0004	303	30.3	102	0.16	
LC0005	227	34	76.6	-1.74	
LC0006	292	44	98.5	-0.11	
LC0007	263	26	88.7	-0.84	
LC0008	318.17	23.9	107	0.54	
LC0009	340	34	115	1.09	
LC0010	277	39	93.4	-0.49	
LC0011	302.2	10.6	102	0.14	
LC0012	-	-	-	-	
LC0013	279.7	0.3	94.3	-0.42	
LC0014	249	25	84	-1.19	
LC0015	79.1	7.9	26.7	-5.44	H
LC0016	381	76	128	2.11	
LC0017	323.61	29.57	109	0.68	
LC0018	310	30	105	0.34	
LC0019	230	53	77.6	-1.66	
LC0020	275.79	25.37	93	-0.52	
LC0021	378	41.3	127	2.04	
LC0022	335	18.4	113	0.96	
LC0023	314.8	62.96	106	0.46	
LC0024	295.2	14.76	99.5	-0.03	
LC0025	273	28	92.1	-0.59	

Characteristics of parameter

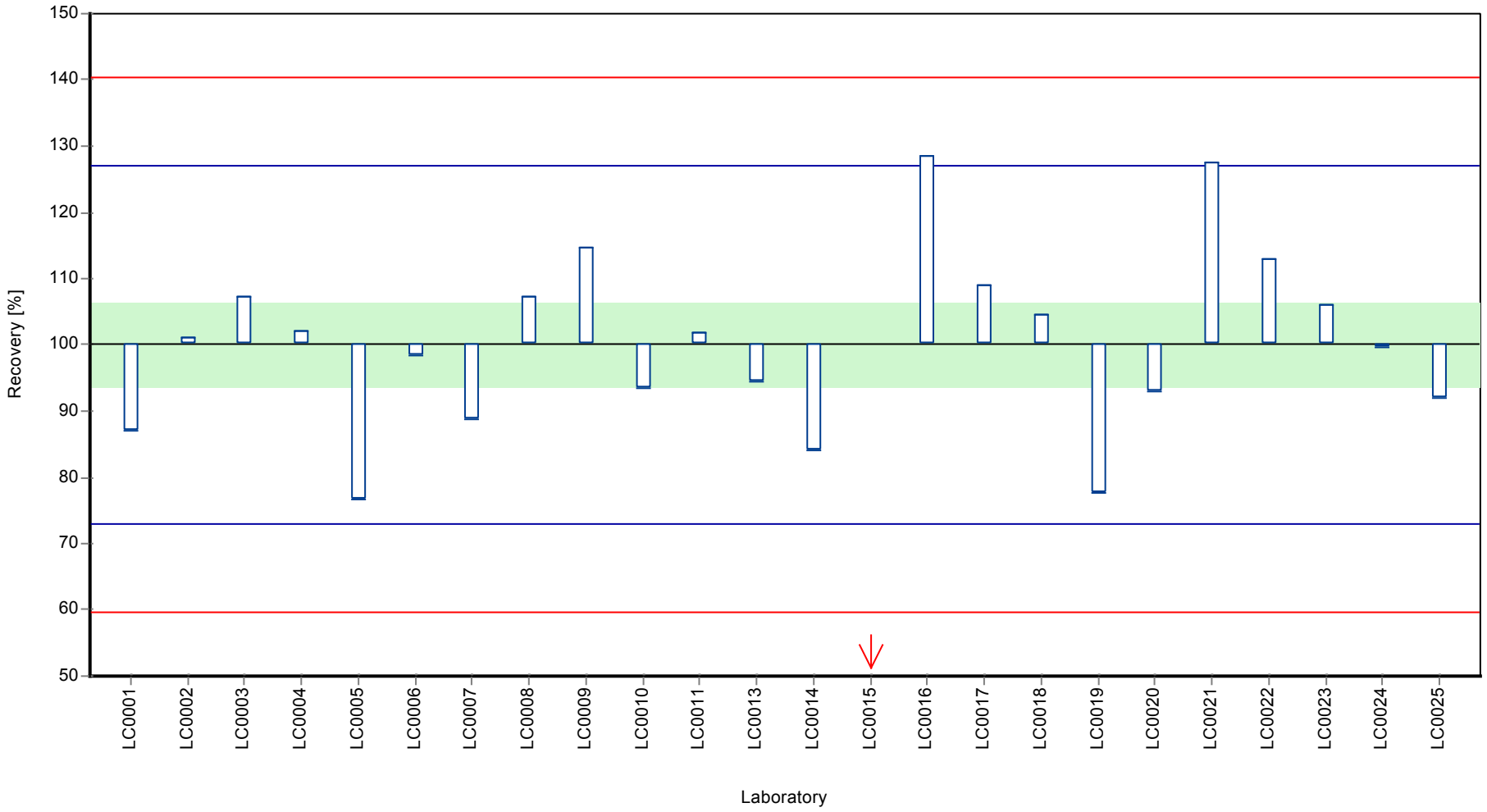
	all results	without outliers	Unit
Mean ± CI (99%)	288 ± 36.3	298 ± 25	mg/kg DM
Minimum	79.1	227	mg/kg DM
Maximum	381	381	mg/kg DM
Standard deviation	59.3	40	mg/kg DM
rel. standard deviation	20.6	13.4	%
n	24	23	-

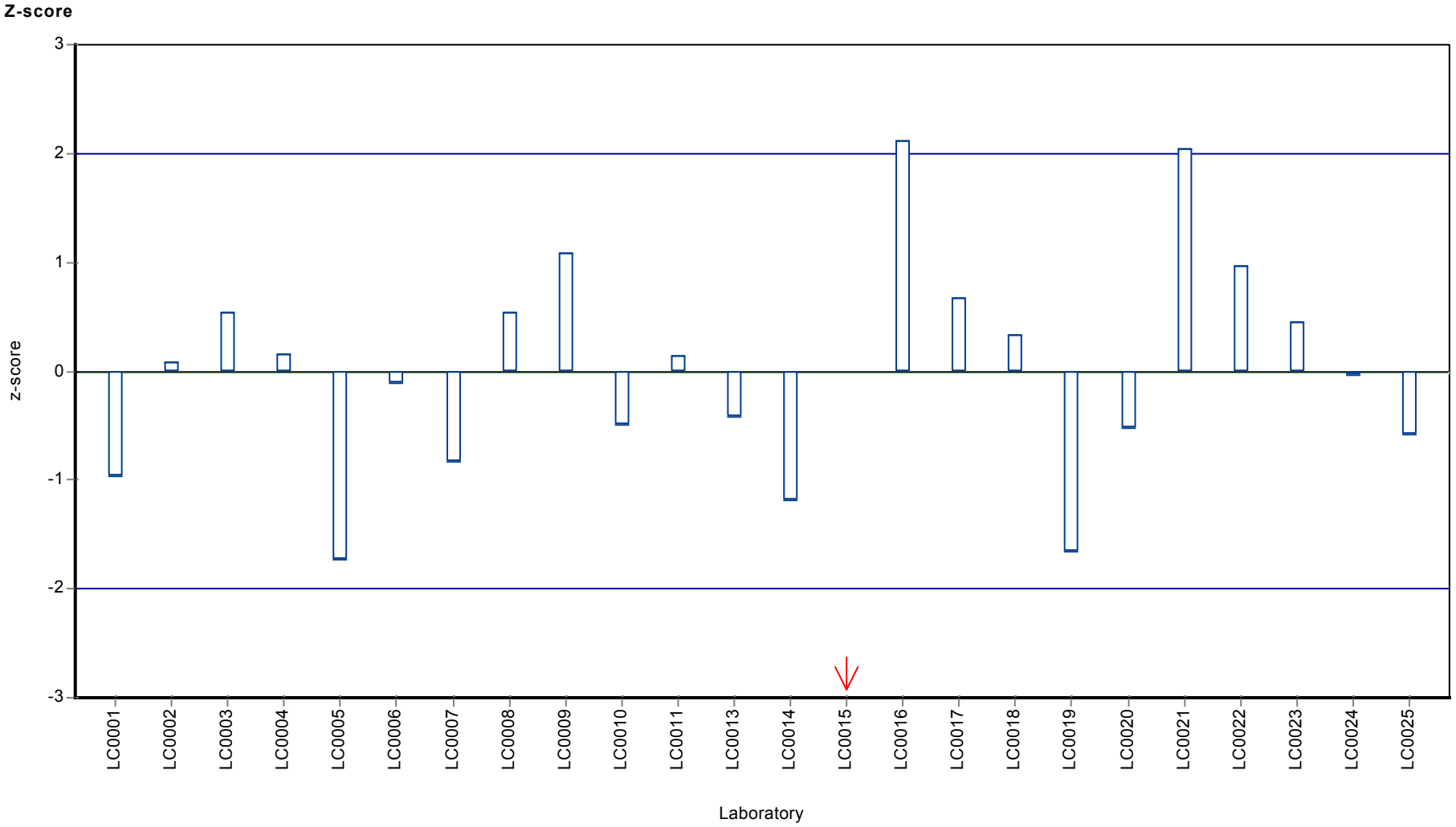
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
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LC0008
LC0009
LC0010
LC0011
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Copper

Unit	mg/kg DM
Assigned value ± U (k=2)	619 ± 18.8
Criterion	44.1 (7.1 %)
Minimum - Maximum	544 - 695
Control test value ± U (k=2)	-

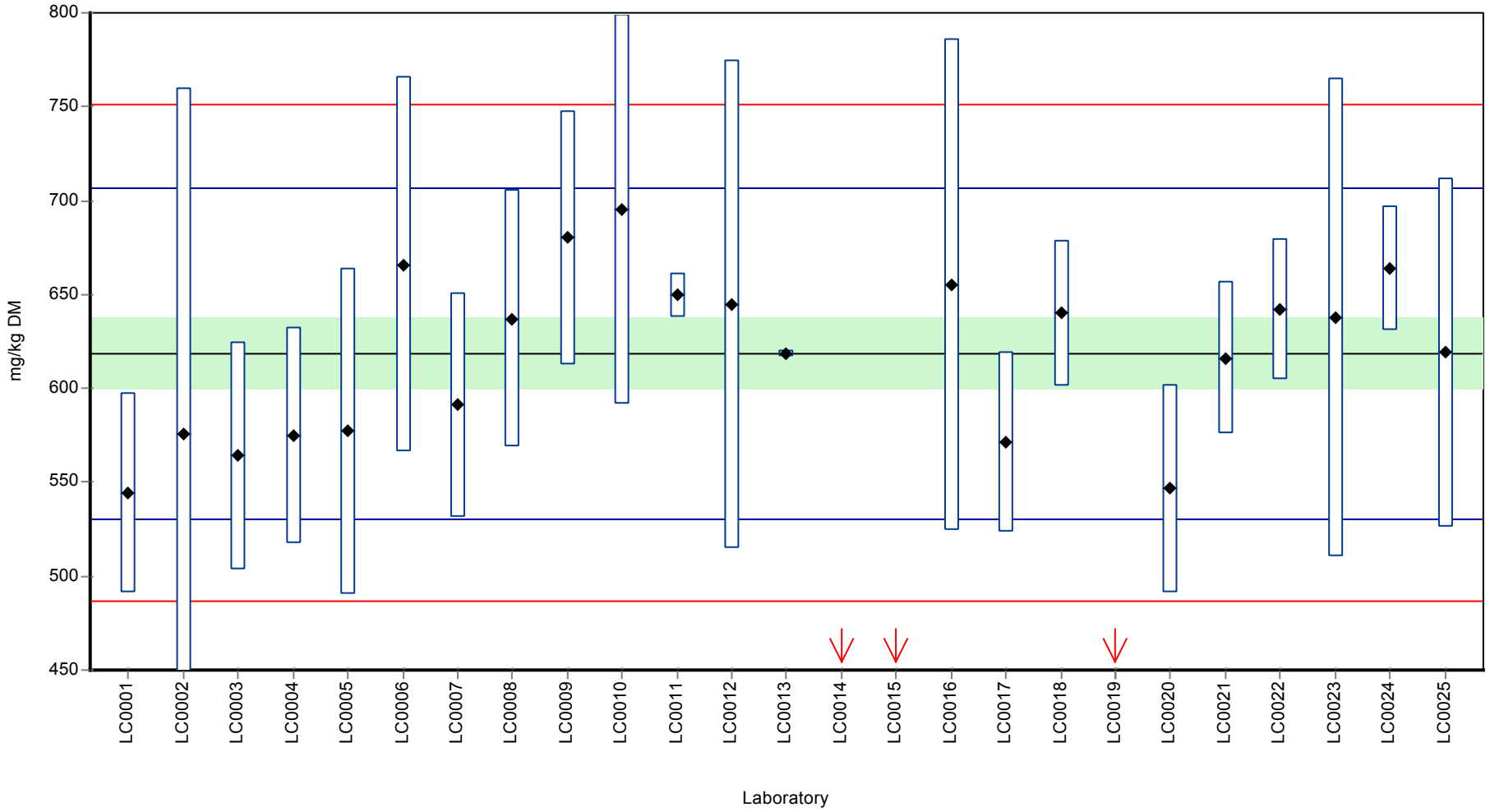
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	544	53.3	87.9	-1.69	
LC0002	576	184	93.1	-0.97	
LC0003	564	60.9	91.2	-1.24	
LC0004	575	57.5	93	-0.99	
LC0005	577	87	93.3	-0.94	
LC0006	666	100	108	1.08	
LC0007	591	60	95.5	-0.63	
LC0008	637	68.73	103	0.42	
LC0009	680	68	110	1.39	
LC0010	695	104	112	1.73	
LC0011	649.7	11.66	105	0.71	
LC0012	645	130	104	0.6	
LC0013	618.4	2	100	0.00	
LC0014	407	40	65.8	-4.8	H
LC0015	258	25.8	41.7	-8.18	H
LC0016	655	131	106	0.83	
LC0017	571.12	48	92.3	-1.08	
LC0018	640	39	103	0.49	
LC0019	420	88	67.9	-4.5	H
LC0020	546.52	55.75	88.3	-1.63	
LC0021	616	40.7	99.6	-0.06	
LC0022	642	37.2	104	0.53	
LC0023	637.3	127.46	103	0.42	
LC0024	664	33.2	107	1.03	
LC0025	619	93	100	0.01	

Characteristics of parameter

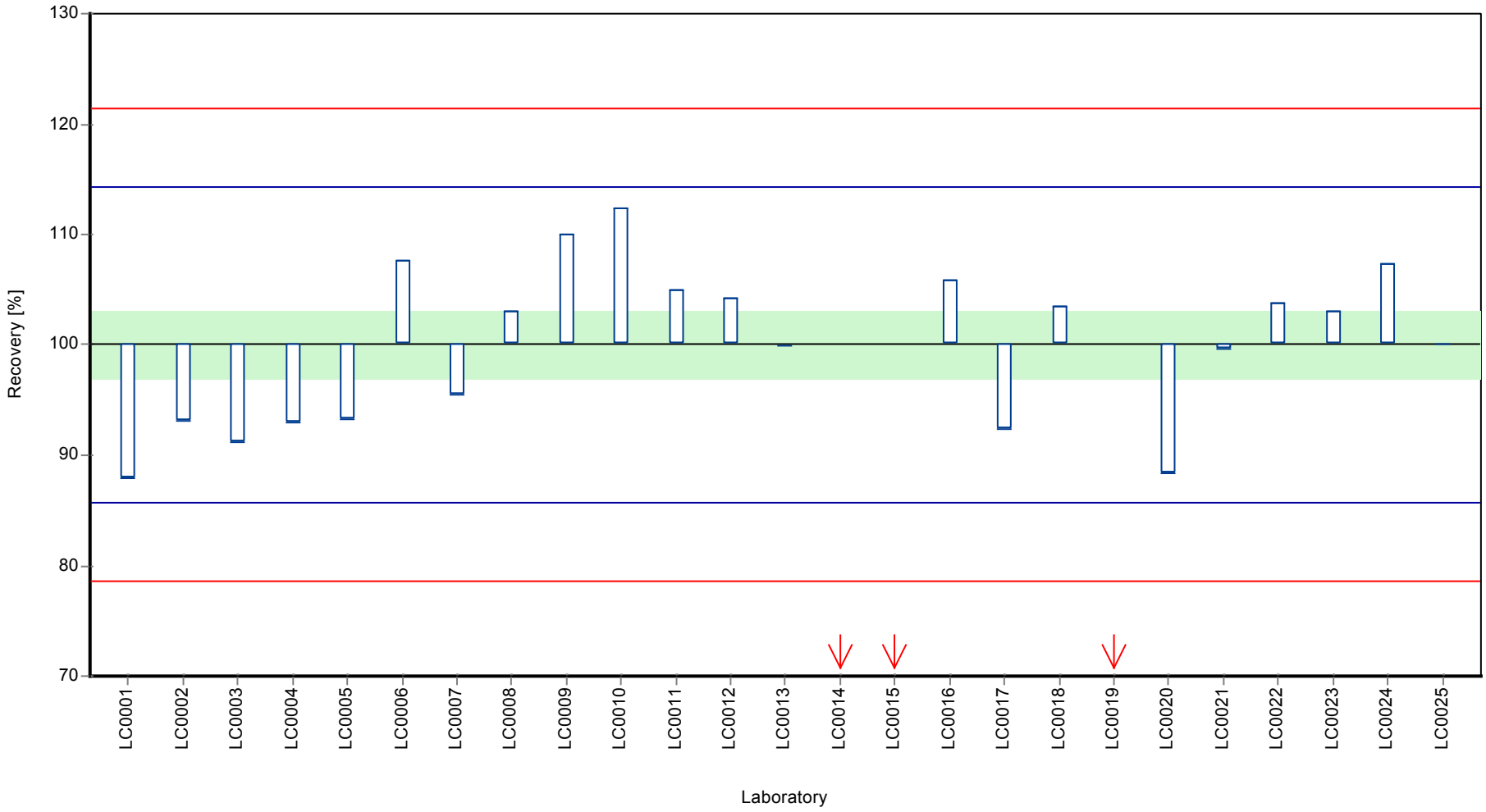
	all results	without outliers	Unit
Mean ± CI (99%)	588 ± 58.9	619 ± 28.2	mg/kg DM
Minimum	258	544	mg/kg DM
Maximum	695	695	mg/kg DM
Standard deviation	98.2	44.1	mg/kg DM
rel. standard deviation	16.7	7.13	%
n	25	22	-

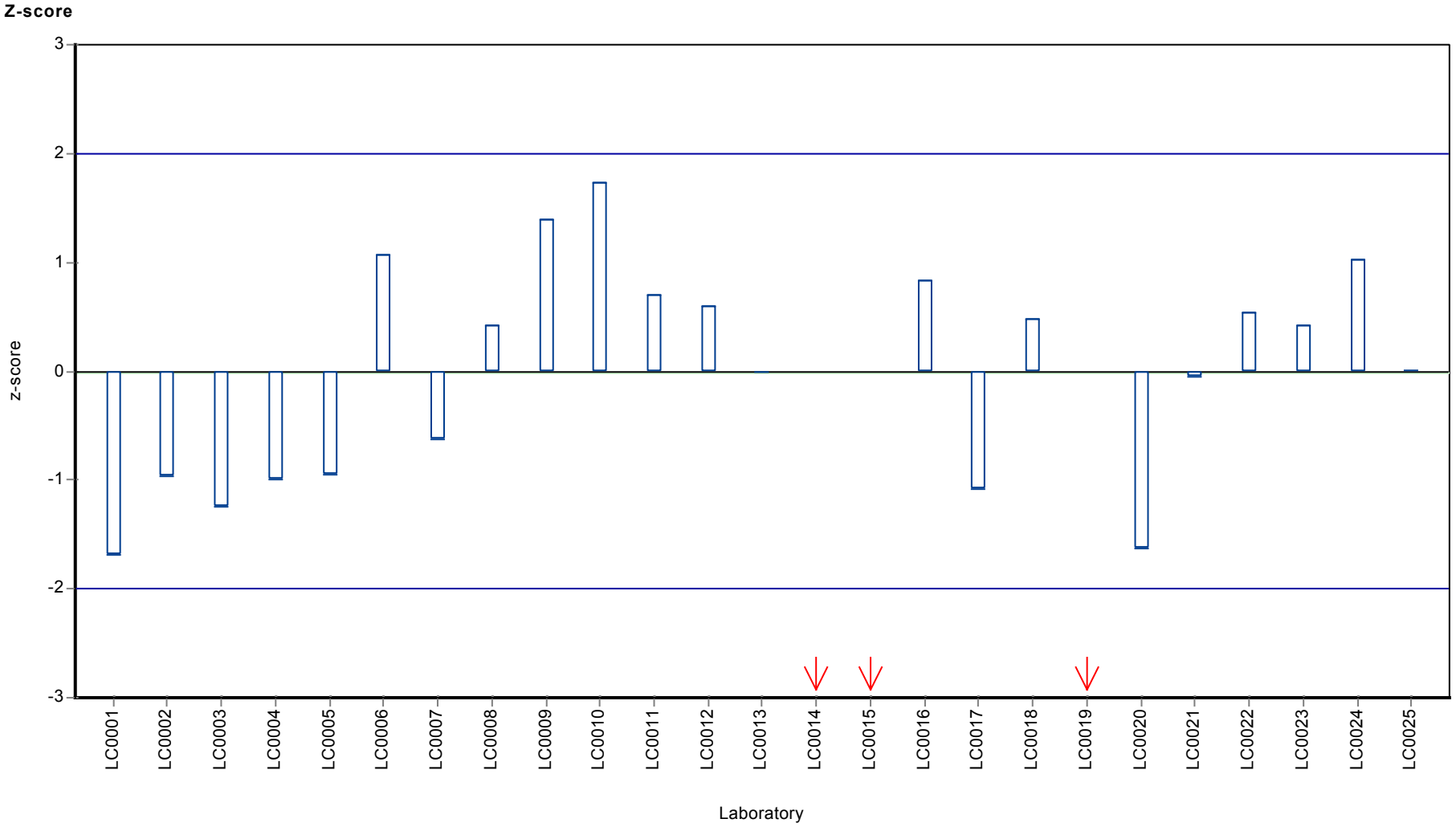
Graphical presentation of results

Results



Recovery rate




Z-score
z-score
3
2
1
0
-1
-2
-3
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
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LC0008
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

HC-Index

Unit	mg/kg DM
Assigned value ± U (k=2)	437 ± 93.7
Criterion	215 (49 %)
Minimum - Maximum	0.29 - 750
Control test value ± U (k=2)	-

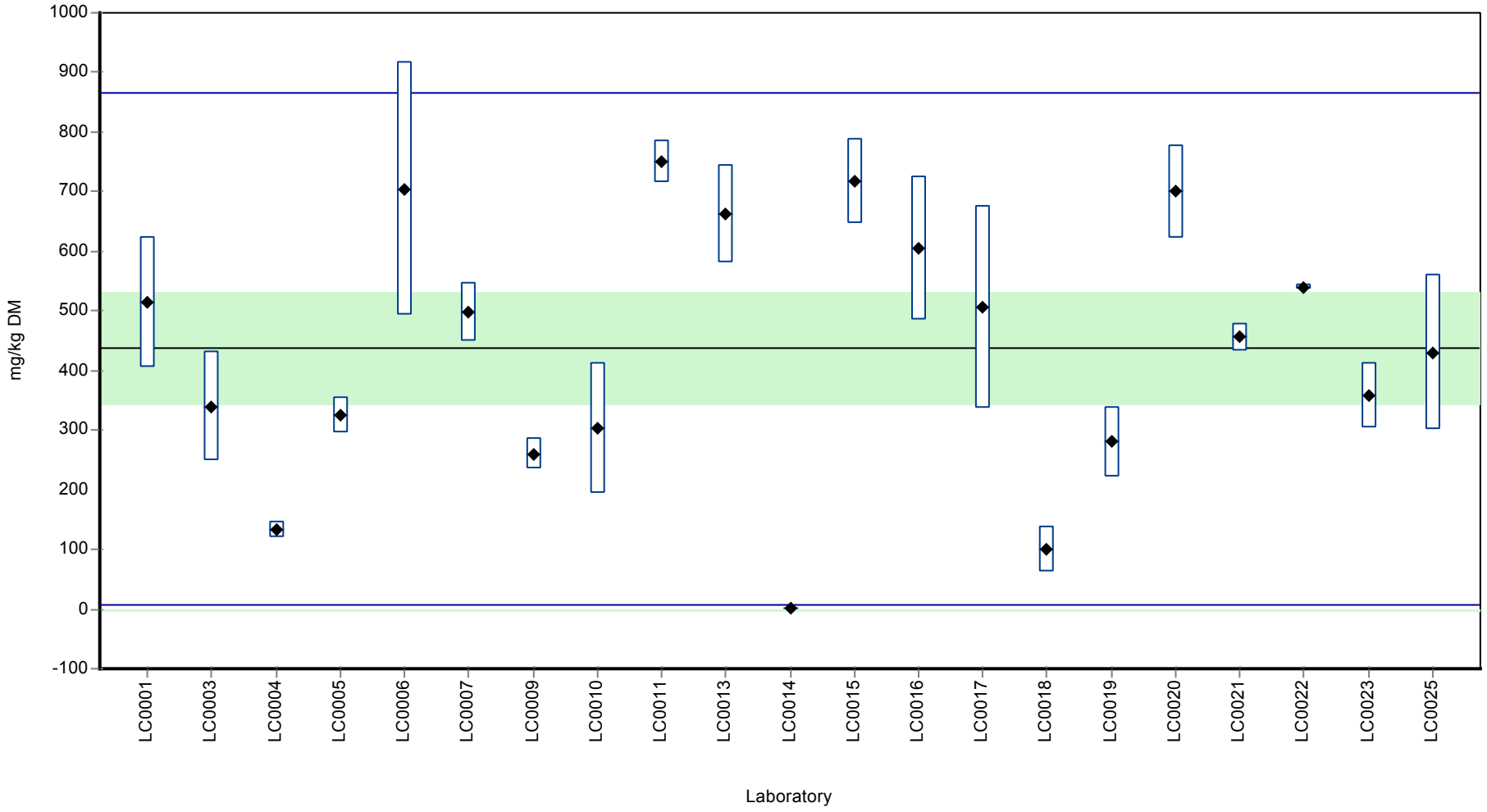
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	515	109	118	0.36	
LC0002	-	-	-	-	
LC0003	340	91	77.7	-0.45	
LC0004	134	13.4	30.6	-1.41	
LC0005	324	30	74.1	-0.53	
LC0006	705	212	161	1.25	
LC0007	498	50	114	0.28	
LC0008	-	-	-	-	
LC0009	260	26	59.4	-0.83	
LC0010	303	109	69.3	-0.63	
LC0011	750.3	35.2	172	1.46	
LC0012	-	-	-	-	
LC0013	663.6	82	152	1.05	
LC0014	0.29	0.06	0.1	-2.04	
LC0015	718	72	164	1.31	
LC0016	605	121	138	0.78	
LC0017	506	170	116	0.32	
LC0018	100	38.84	22.9	-1.57	
LC0019	280	60	64	-0.73	
LC0020	699.75	76.97	160	1.22	
LC0021	456	22.8	104	0.09	
LC0022	540	4.37	123	0.48	
LC0023	358.25	53.7375	81.9	-0.37	
LC0024	-	-	-	-	
LC0025	430	130	98.3	-0.03	

Characteristics of parameter

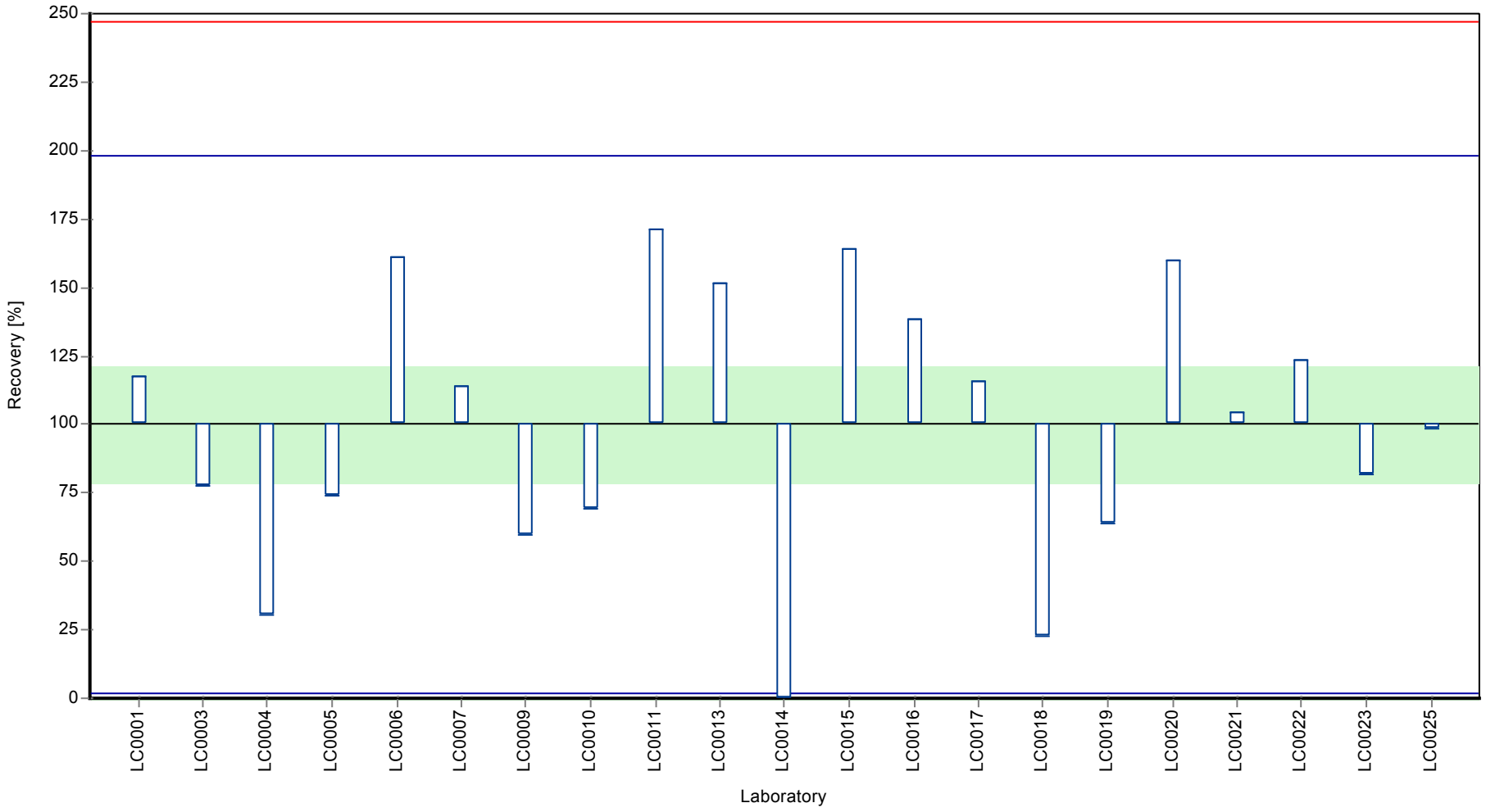
	all results	without outliers	Unit
Mean ± CI (99%)	437 ± 141	437 ± 141	mg/kg DM
Minimum	0.29	0.29	mg/kg DM
Maximum	750	750	mg/kg DM
Standard deviation	215	215	mg/kg DM
rel. standard deviation	49.1	49.1	%
n	21	21	-

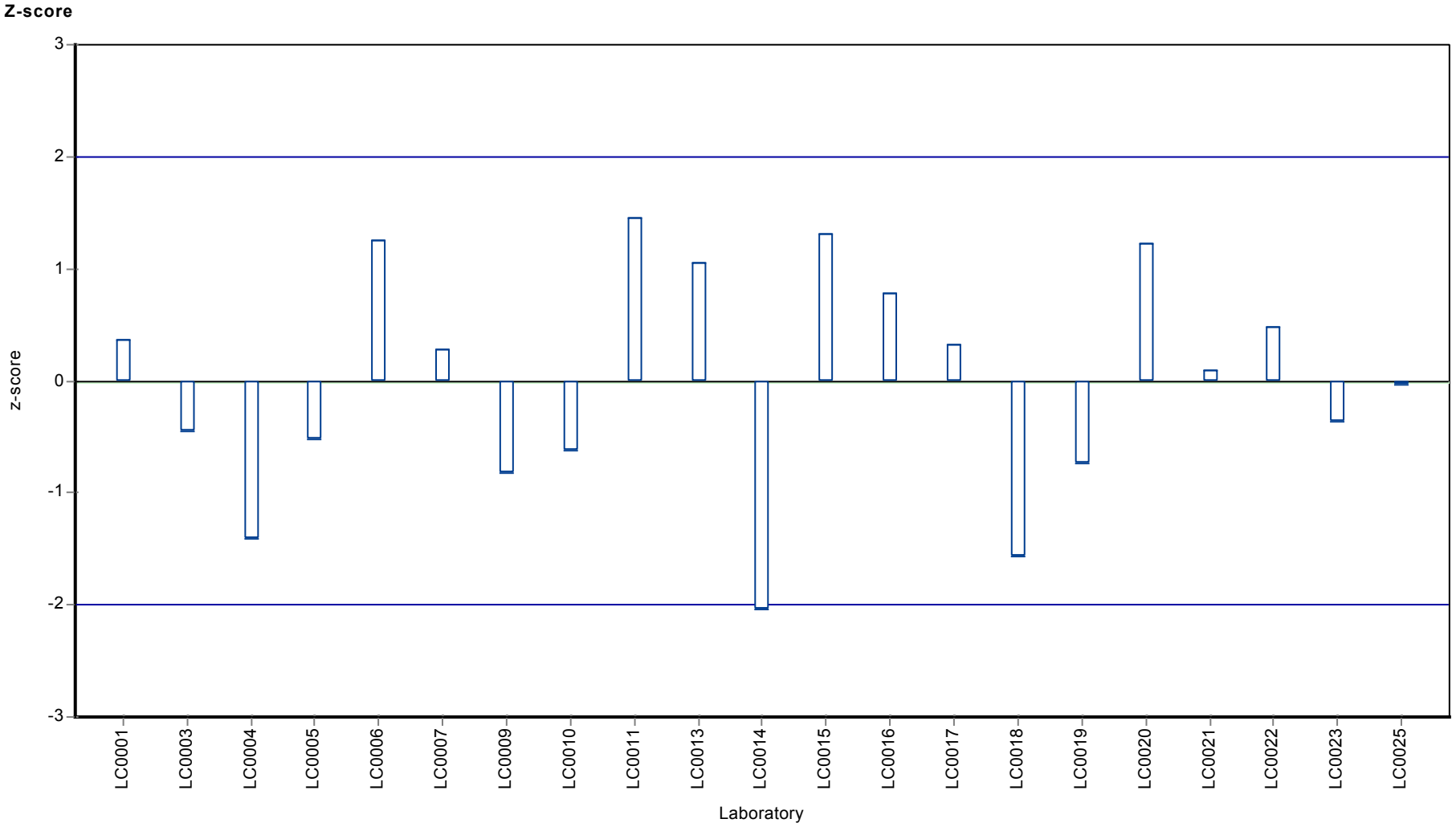
Graphical presentation of results

Results



Recovery rate




Z-score
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-1
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z-score
LC0001
LC0003
LC0004
LC0005
LC0006
LC0007
LC0009
LC0010
LC0011
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0025
Laboratory

Parameter oriented report

AB07

Lead

Unit	mg/kg DM
Assigned value ± U (k=2)	93.8 ± 4
Criterion	11.7 (12 %)
Minimum - Maximum	59 - 105
Control test value ± U (k=2)	-

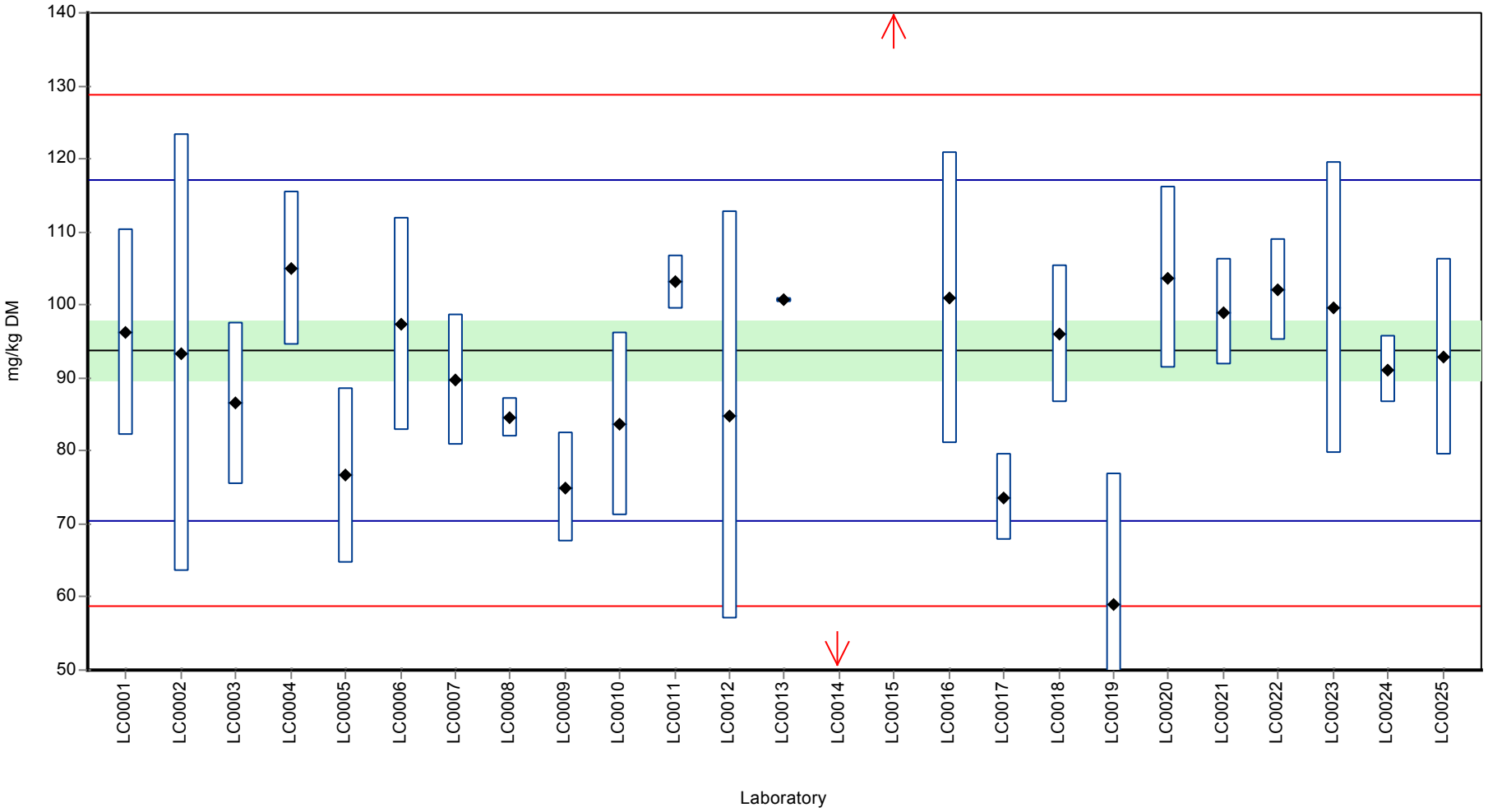
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	96.2	14.2	103	0.2	
LC0002	93.4	29.9	99.6	-0.03	
LC0003	86.51	11.1	92.2	-0.63	
LC0004	105	10.5	112	0.96	
LC0005	76.7	12	81.8	-1.46	
LC0006	97.4	14.6	104	0.31	
LC0007	89.7	9	95.6	-0.35	
LC0008	84.583	2.65	90.2	-0.79	
LC0009	75	7.5	80	-1.61	
LC0010	83.6	12.6	89.1	-0.87	
LC0011	103.1	3.72	110	0.8	
LC0012	84.9	28	90.5	-0.76	
LC0013	100.65	0.29	107	0.59	
LC0014	45.2	5.5	48.2	-4.16	H
LC0015	149	14.9	159	4.73	H
LC0016	101	20	108	0.62	
LC0017	73.623	5.99	78.5	-1.73	
LC0018	96	9.5	102	0.19	
LC0019	59	18	62.9	-2.98	
LC0020	103.7	12.44	111	0.85	
LC0021	99	7.36	106	0.45	
LC0022	102	6.94	109	0.7	
LC0023	99.6	19.92	106	0.5	
LC0024	91.13	4.56	97.1	-0.23	
LC0025	92.9	13.4	99	-0.08	

Characteristics of parameter

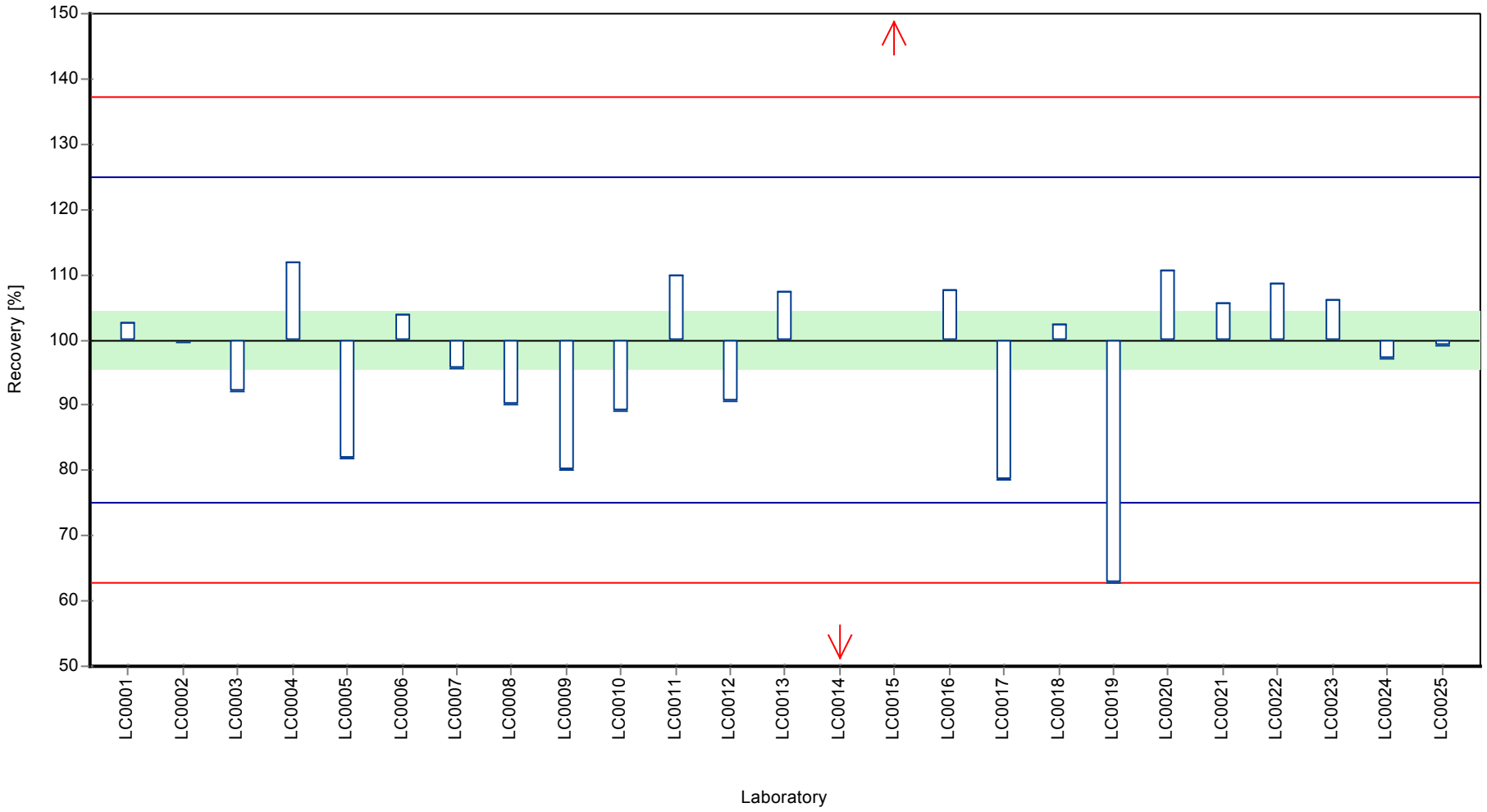
	all results	without outliers	Unit
Mean ± CI (99%)	91.6 ± 11.3	91.1 ± 7.3	mg/kg DM
Minimum	45.2	59	mg/kg DM
Maximum	149	105	mg/kg DM
Standard deviation	18.8	11.7	mg/kg DM
rel. standard deviation	20.5	12.8	%
n	25	23	-

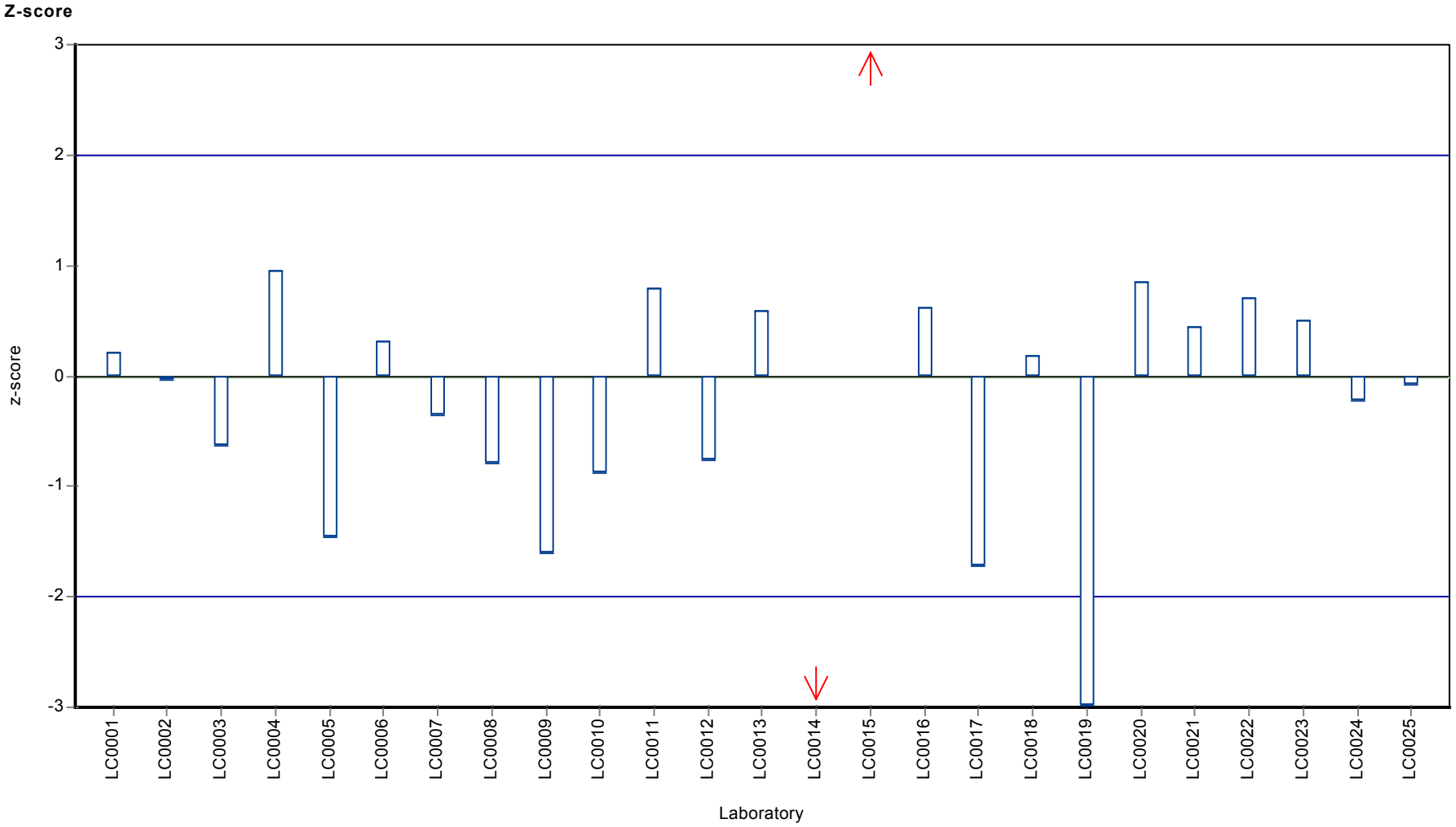
Graphical presentation of results

Results



Recovery rate




Z-score
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z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
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LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Mercury

Unit	mg/kg DM
Assigned value ± U (k=2)	0.13 ± 0.0204
Criterion	0.0367 (28 %)
Minimum - Maximum	0.06 - 0.201
Control test value ± U (k=2)	-

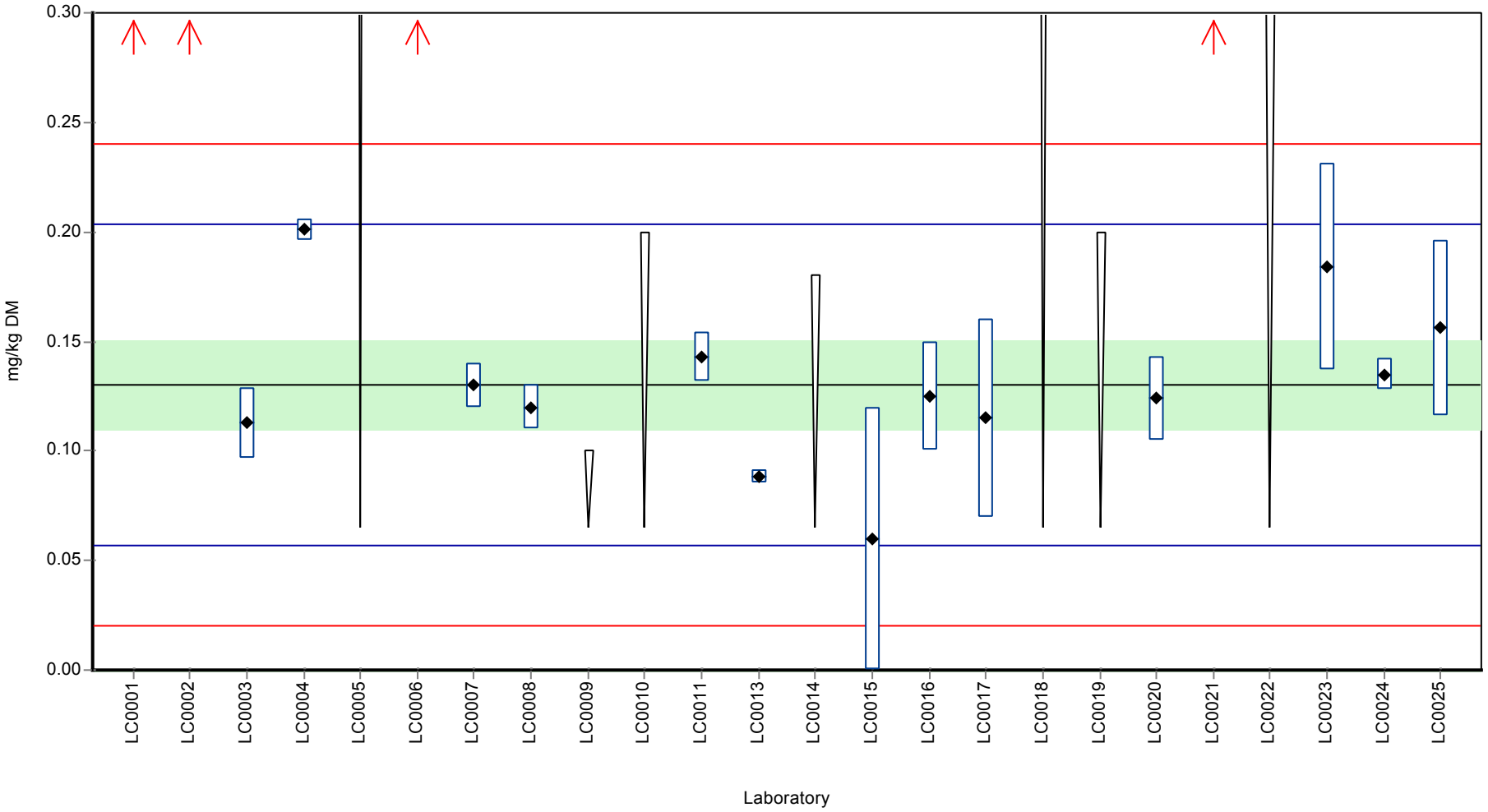
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	0.45	0.09	345	8.71	H
LC0002	0.711	0.228	546	15.8	H
LC0003	0.1127	0.016	86.5	-0.48	
LC0004	0.201	0.005	154	1.93	
LC0005	< 1 (LOQ)	-	-	-	
LC0006	0.93	0.14	714	21.8	H
LC0007	0.13	0.01	99.8	-0.01	
LC0008	0.12	0.01	92.1	-0.28	
LC0009	< 0.1 (LOQ)	-	-	-	
LC0010	< 0.2 (LOQ)	-199.8	-	-	
LC0011	0.143	0.0114	110	0.35	
LC0012	-	-	-	-	
LC0013	0.088	0.003	67.5	-1.15	
LC0014	< 0.18 (LOQ)	-	-	-	
LC0015	0.06	0.06	46.1	-1.91	
LC0016	0.125	0.025	95.9	-0.14	
LC0017	0.115	0.04531	88.3	-0.42	
LC0018	< 0.5 (LOQ)	-	-	-	
LC0019	< 0.2 (LOQ)	-	-	-	
LC0020	0.124	0.019	95.2	-0.17	
LC0021	0.47	0.055	361	9.25	H
LC0022	< 0.3 (LOQ)	-	-	-	
LC0023	0.184	0.0473	141	1.46	
LC0024	0.135	0.007	104	0.13	
LC0025	0.156	0.04	120	0.7	

Characteristics of parameter

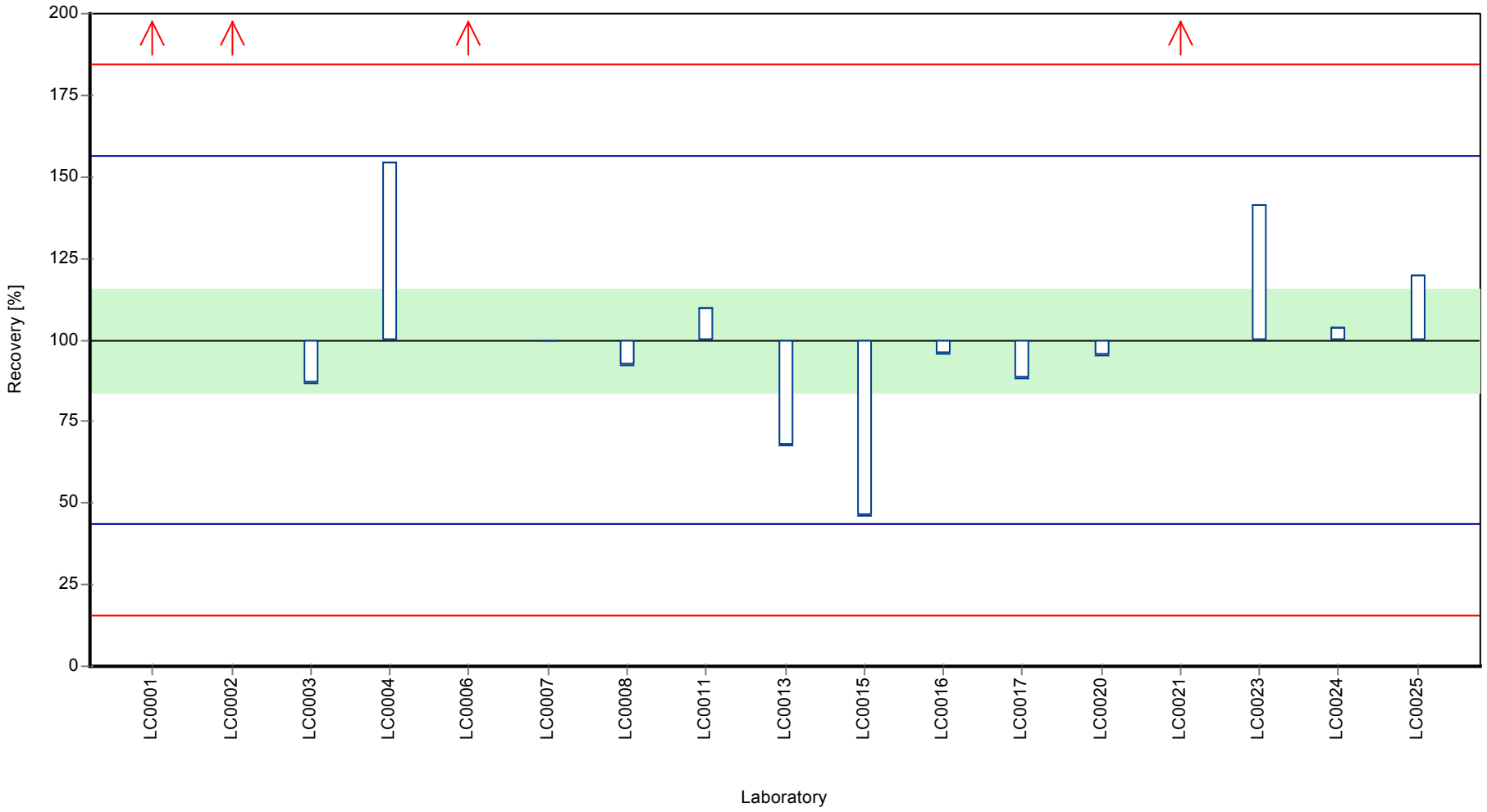
	all results	without outliers	Unit
Mean ± CI (99%)	0.25 ± 0.179	0.13 ± 0.0305	mg/kg DM
Minimum	0.06	0.06	mg/kg DM
Maximum	0.93	0.201	mg/kg DM
Standard deviation	0.246	0.0367	mg/kg DM
rel. standard deviation	98.2	28.2	%
n	17	13	-

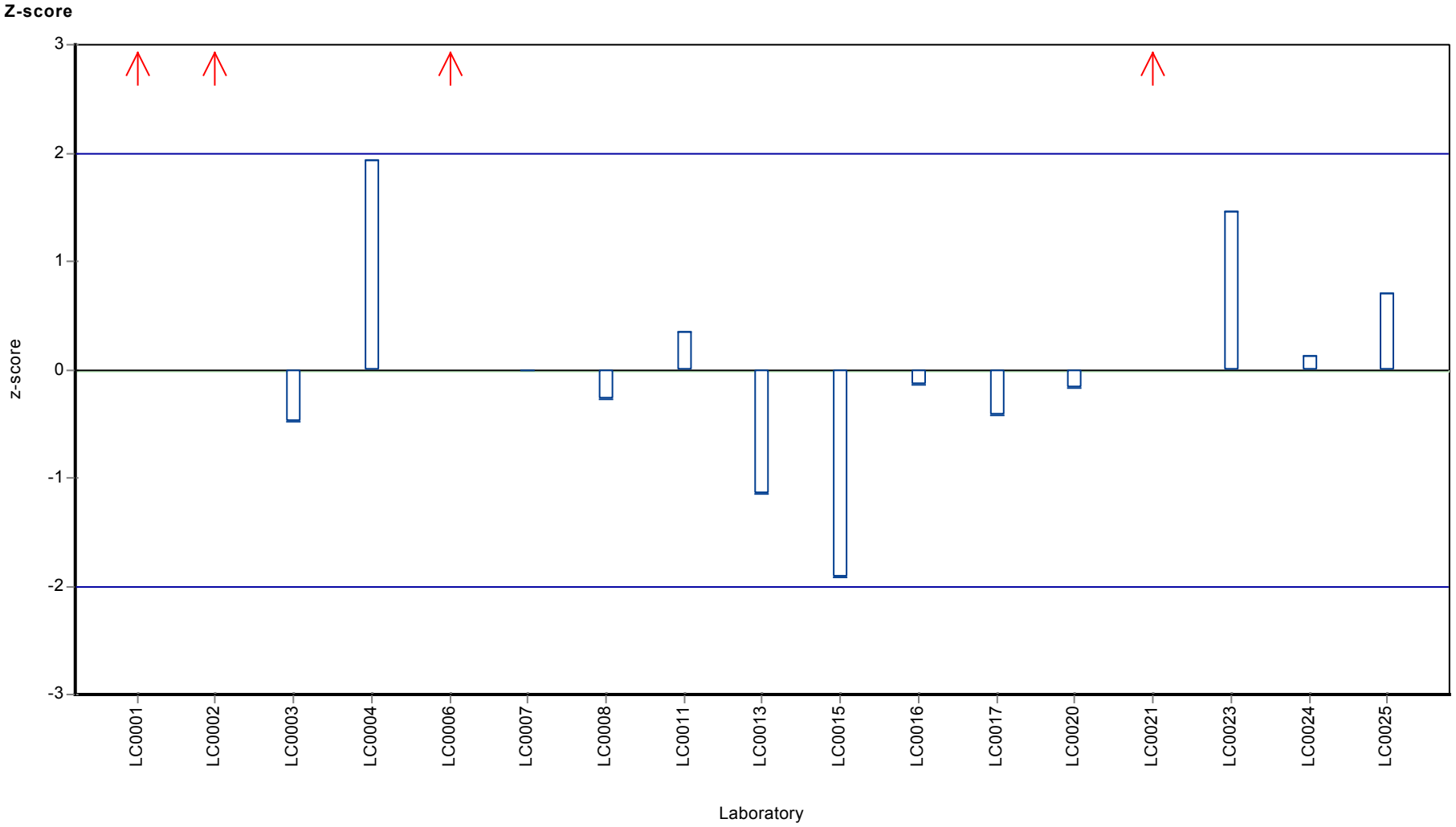
Graphical presentation of results

Results



Recovery rate




Z-score
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1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0006
LC0007
LC0008
LC0011
LC0013
LC0015
LC0016
LC0017
LC0020
LC0021
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Molybdenum

Unit	mg/kg DM
Assigned value ± U (k=2)	3.89 ± 0.607
Criterion	1.16 (30 %)
Minimum - Maximum	1.1 - 6.07
Control test value ± U (k=2)	-

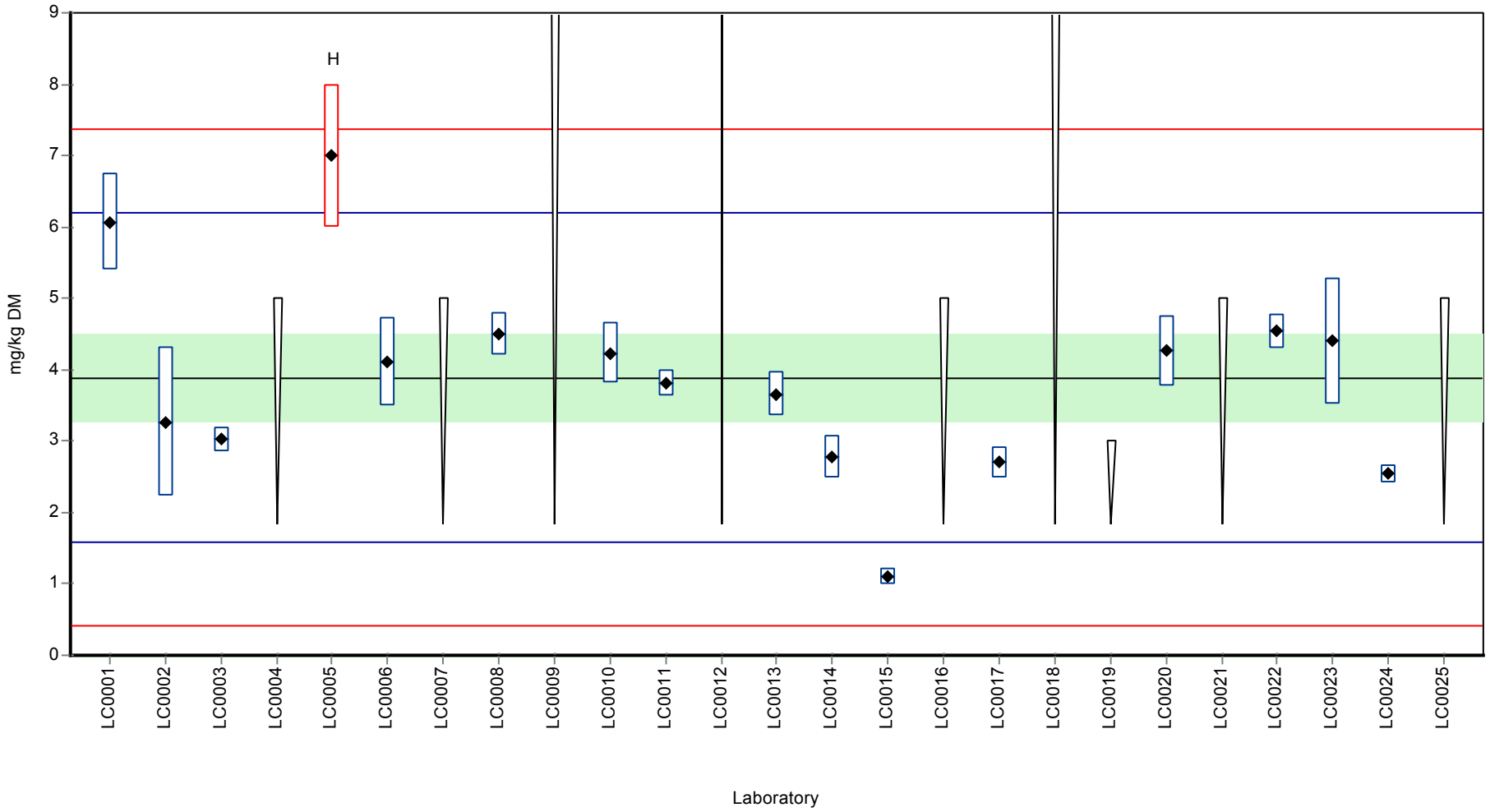
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	6.07	0.67	156	1.88	
LC0002	3.27	1.05	84	-0.54	
LC0003	3.021	0.163	77.6	-0.75	
LC0004	< 5 (LOQ)	-	-	-	
LC0005	7	1	180	2.68	H
LC0006	4.1	0.62	105	0.18	
LC0007	< 5 (LOQ)	-	-	-	
LC0008	4.492	0.295	115	0.52	
LC0009	< 10 (LOQ)	-	-	-	
LC0010	4.23	0.42	109	0.29	
LC0011	3.813	0.19	98	-0.07	
LC0012	< 100 (LOQ)	-	-	-	
LC0013	3.658	0.314	94	-0.2	
LC0014	2.78	0.3	71.5	-0.96	
LC0015	1.1	0.11	28.3	-2.41	
LC0016	< 5 (LOQ)	-	-	-	
LC0017	2.7034	0.22	69.5	-1.03	
LC0018	< 10 (LOQ)	-	-	-	
LC0019	< 3 (LOQ)	-	-	-	
LC0020	4.262	0.49	110	0.32	
LC0021	< 5 (LOQ)	-	-	-	
LC0022	4.54	0.245	117	0.56	
LC0023	4.4	0.88	113	0.44	
LC0024	2.543	0.13	65.4	-1.16	
LC0025	< 5 (LOQ)	-	-	-	

Characteristics of parameter

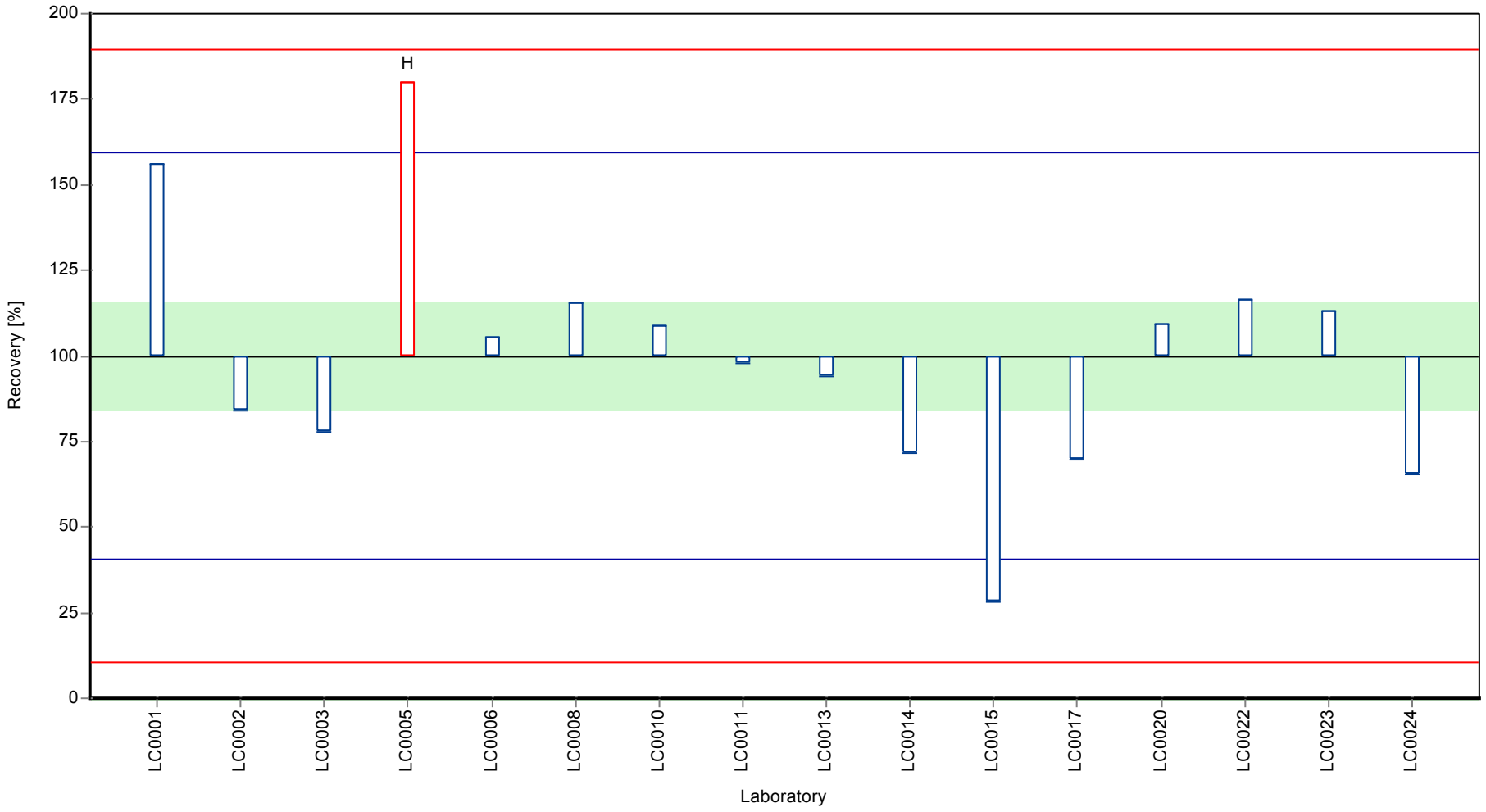
	all results	without outliers	Unit
Mean ± CI (99%)	3.87 ± 1.05	3.67 ± 0.897	mg/kg DM
Minimum	1.1	1.1	mg/kg DM
Maximum	7	6.07	mg/kg DM
Standard deviation	1.4	1.16	mg/kg DM
rel. standard deviation	36	31.6	%
n	16	15	-

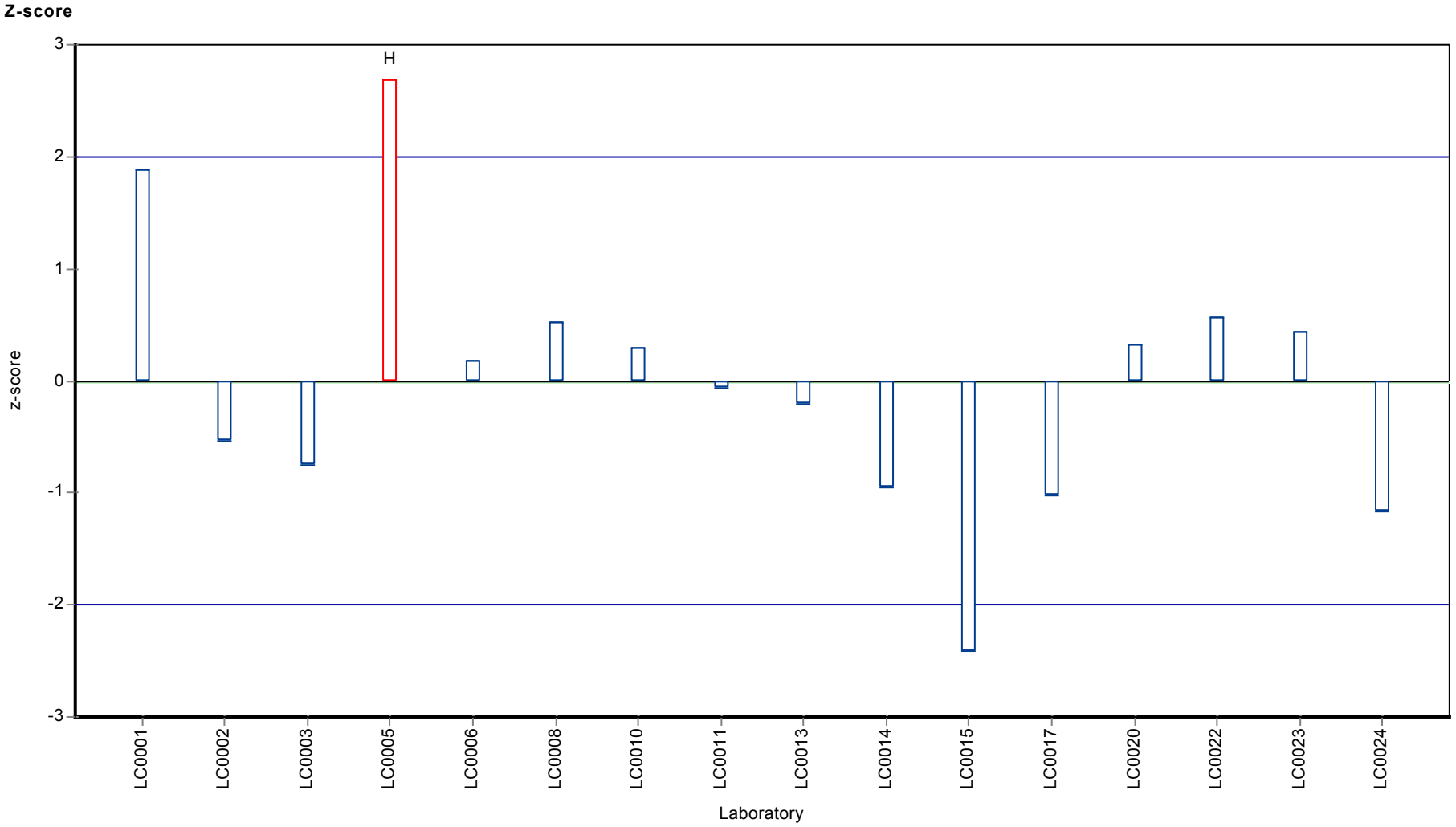
Graphical presentation of results

Results



Recovery rate




Z-score
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3
2
1
0
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-2
-3
z-score
LC0001
LC0002
LC0003
LC0005
LC0006
LC0008
LC0010
LC0011
LC0013
LC0014
LC0015
LC0017
LC0020
LC0022
LC0023
LC0024
Laboratory

Parameter oriented report

AB07

Nickel

Unit	mg/kg DM
Assigned value ± U (k=2)	300 ± 15.8
Criterion	38.3 (13 %)
Minimum - Maximum	212 - 358
Control test value ± U (k=2)	-

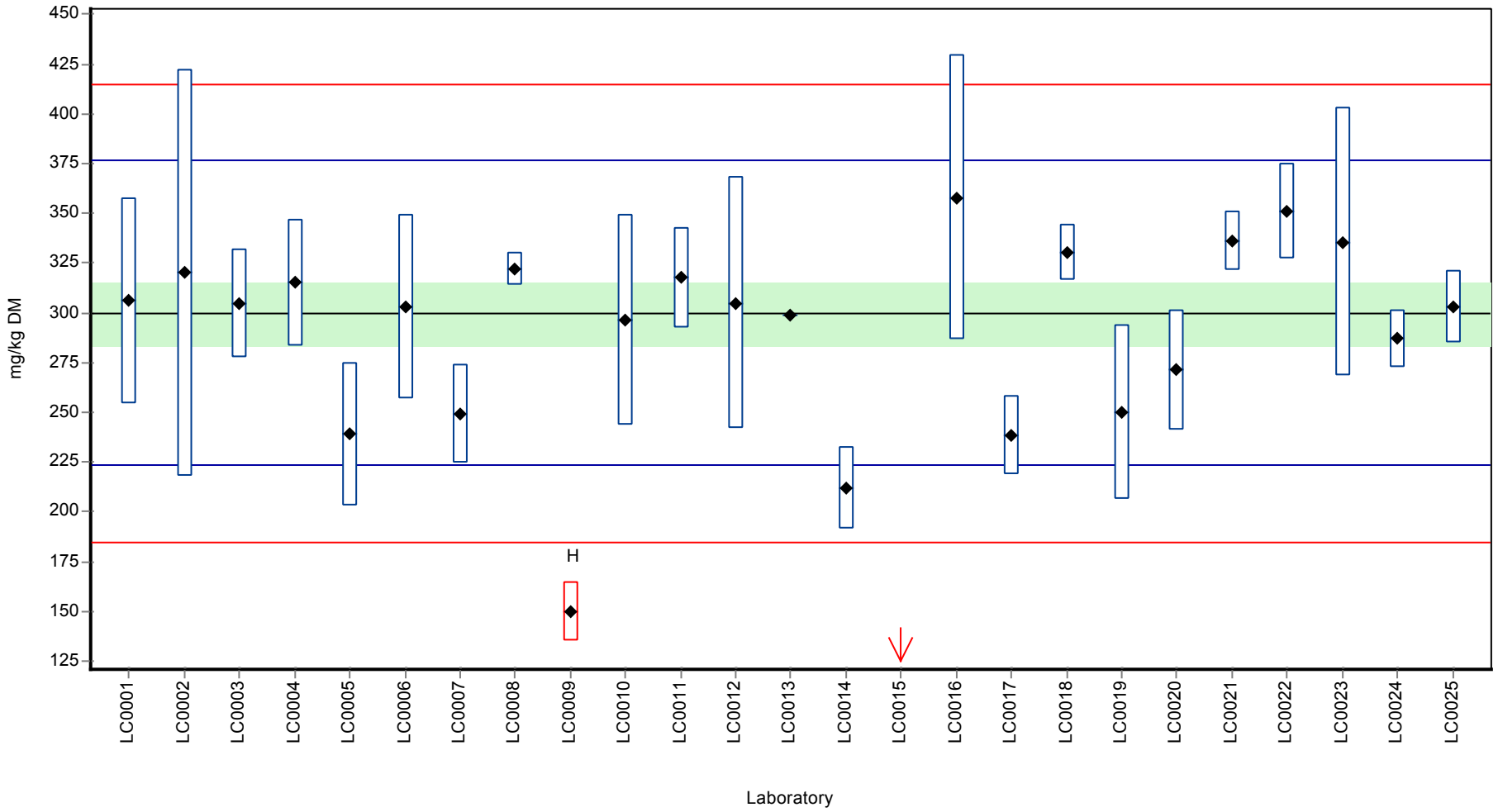
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	306	51.7	102	0.16	
LC0002	320	102	107	0.53	
LC0003	304.8	27.1	102	0.13	
LC0004	315	31.5	105	0.4	
LC0005	239	36	79.7	-1.59	
LC0006	303	46	101	0.09	
LC0007	249	25	83.1	-1.33	
LC0008	322	8.61	107	0.58	
LC0009	150	15	50	-3.91	H
LC0010	296	53	98.8	-0.1	
LC0011	317.5	24.95	106	0.46	
LC0012	305	63	102	0.14	
LC0013	299.1	0.4	99.8	-0.02	
LC0014	212	21	70.7	-2.29	
LC0015	109	11	36.4	-4.98	H
LC0016	358	72	119	1.52	
LC0017	238.34	19.8	79.5	-1.6	
LC0018	330	14	110	0.79	
LC0019	250	44	83.4	-1.3	
LC0020	271.21	30.38	90.5	-0.74	
LC0021	336	14.9	112	0.95	
LC0022	351	23.9	117	1.34	
LC0023	335.6	67.12	112	0.94	
LC0024	287.1	14.4	95.8	-0.33	
LC0025	303	18	101	0.09	

Characteristics of parameter

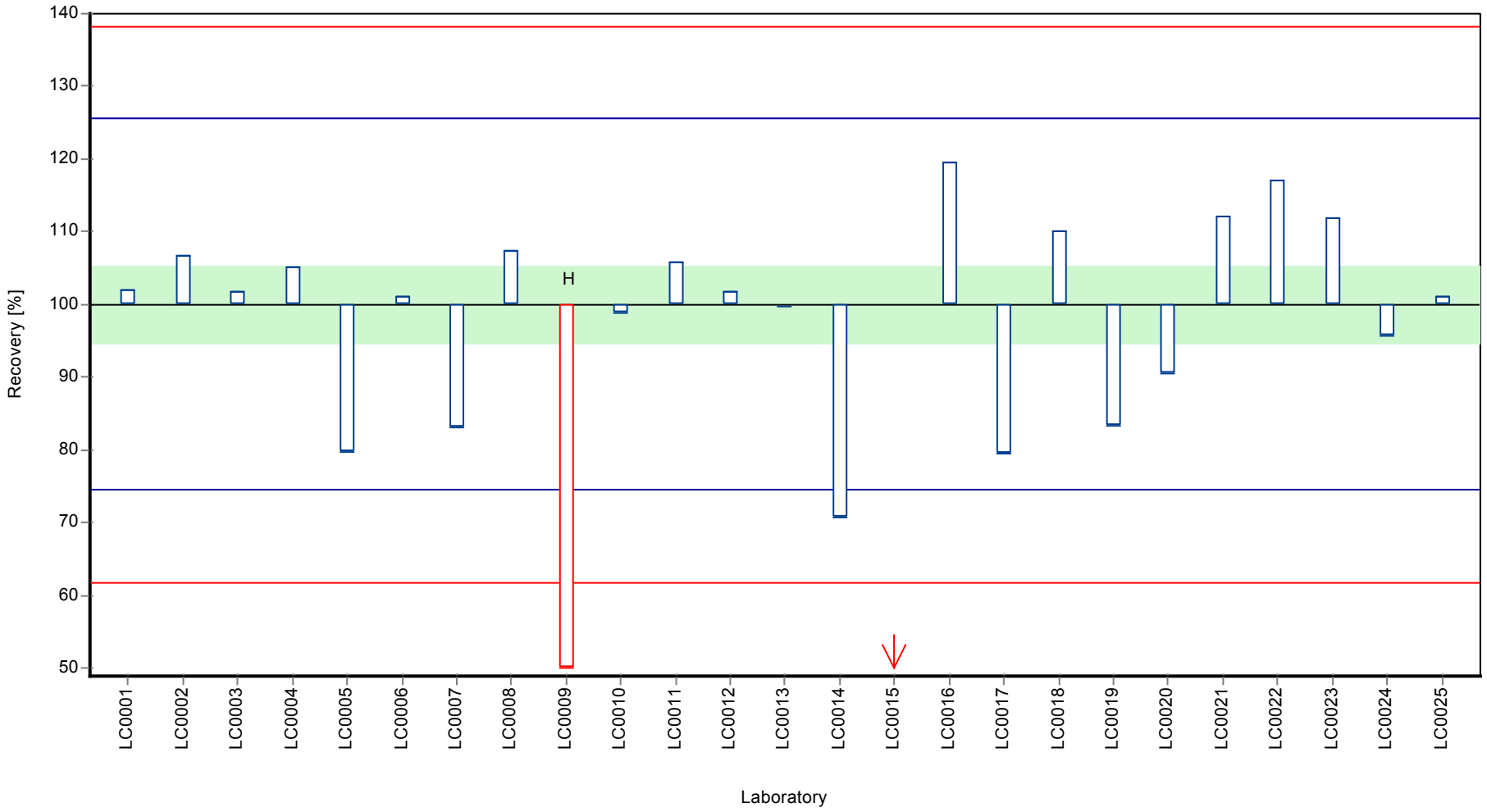
	all results	without outliers	Unit
Mean ± CI (99%)	284 ± 35.7	298 ± 23.9	mg/kg DM
Minimum	109	212	mg/kg DM
Maximum	358	358	mg/kg DM
Standard deviation	59.6	38.3	mg/kg DM
rel. standard deviation	21	12.9	%
n	25	23	-

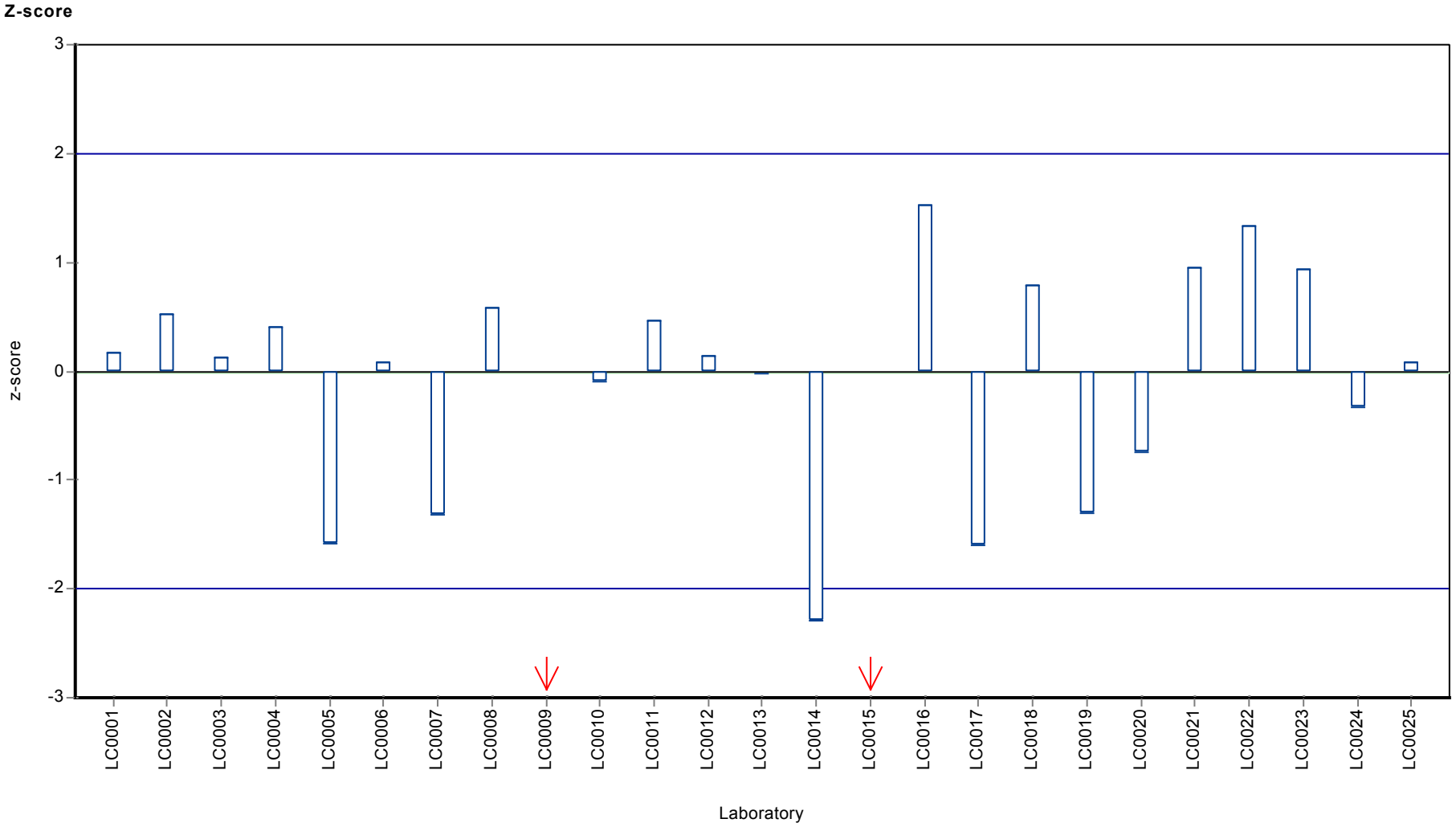
Graphical presentation of results

Results



Recovery rate




Z-score
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1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
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LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Selenium

Unit	mg/kg DM
Assigned value ± U (k=2)	2.38 ± 0.657
Criterion	1.19 (50 %)
Minimum - Maximum	0.999 - 5.17
Control test value ± U (k=2)	-

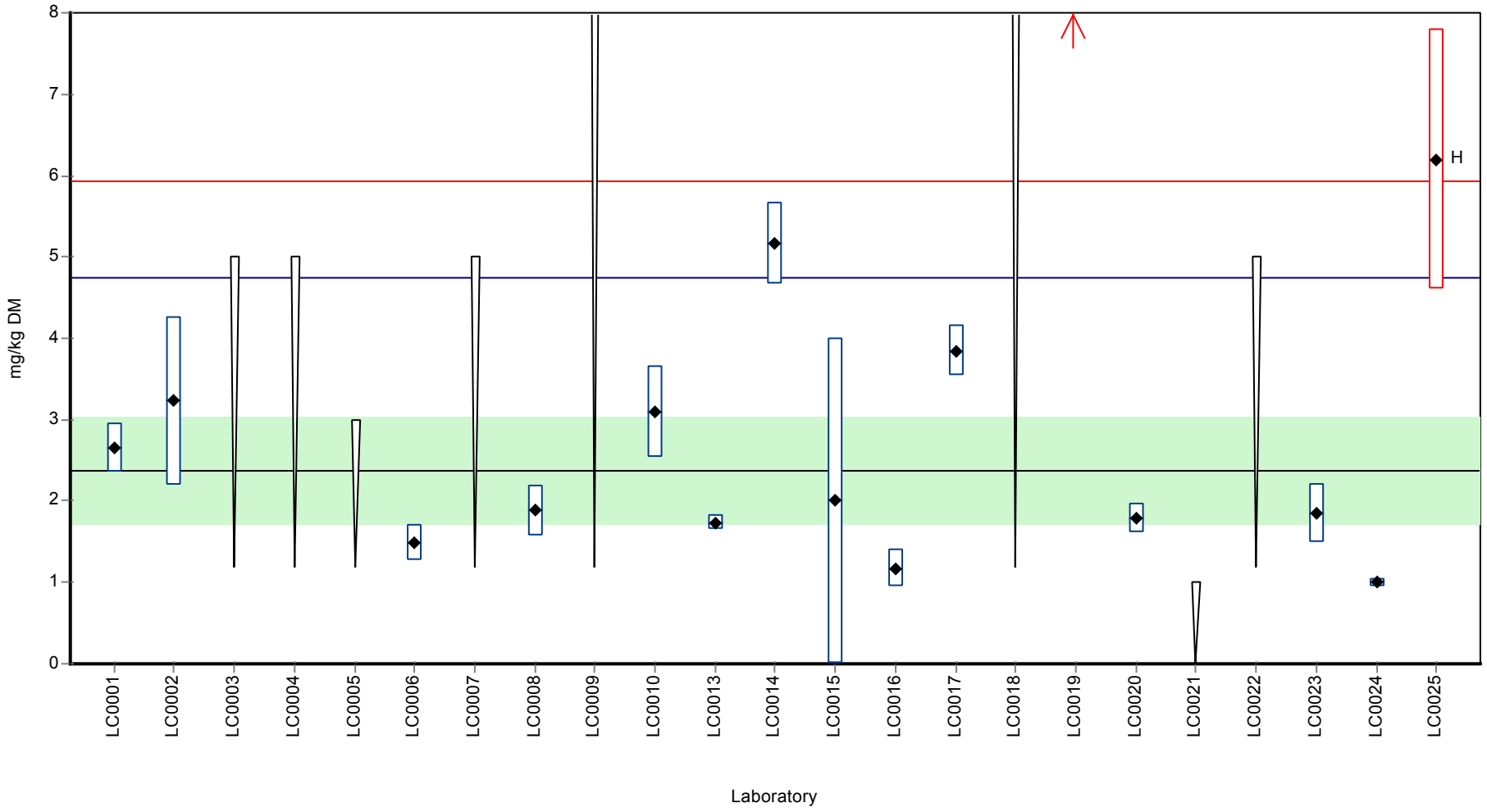
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	2.65	0.3	111	0.23	
LC0002	3.23	1.03	136	0.72	
LC0003	< 5 (LOQ)	-	-	-	
LC0004	< 5 (LOQ)	-	-	-	
LC0005	< 3 (LOQ)	-	-	-	
LC0006	1.49	0.22	62.7	-0.75	
LC0007	< 5 (LOQ)	-	-	-	
LC0008	1.883	0.307	79.2	-0.42	
LC0009	< 10 (LOQ)	-	-	-	
LC0010	3.1	0.56	130	0.61	
LC0011	-	-	-	-	
LC0012	-	-	-	-	
LC0013	1.735	0.091	73	-0.54	
LC0014	5.17	0.5	217	2.36	
LC0015	2	2	84.1	-0.32	
LC0016	1.17	0.23	49.2	-1.02	
LC0017	3.8452	0.31	162	1.24	
LC0018	< 10 (LOQ)	-	-	-	
LC0019	14	13	589	9.81	H
LC0020	1.782	0.184	75	-0.5	
LC0021	< 1 (LOQ)	-	-	-	
LC0022	< 5 (LOQ)	-	-	-	
LC0023	1.85	0.37	77.8	-0.45	
LC0024	0.999	0.05	42	-1.16	
LC0025	6.2	1.6	261	3.23	H

Characteristics of parameter

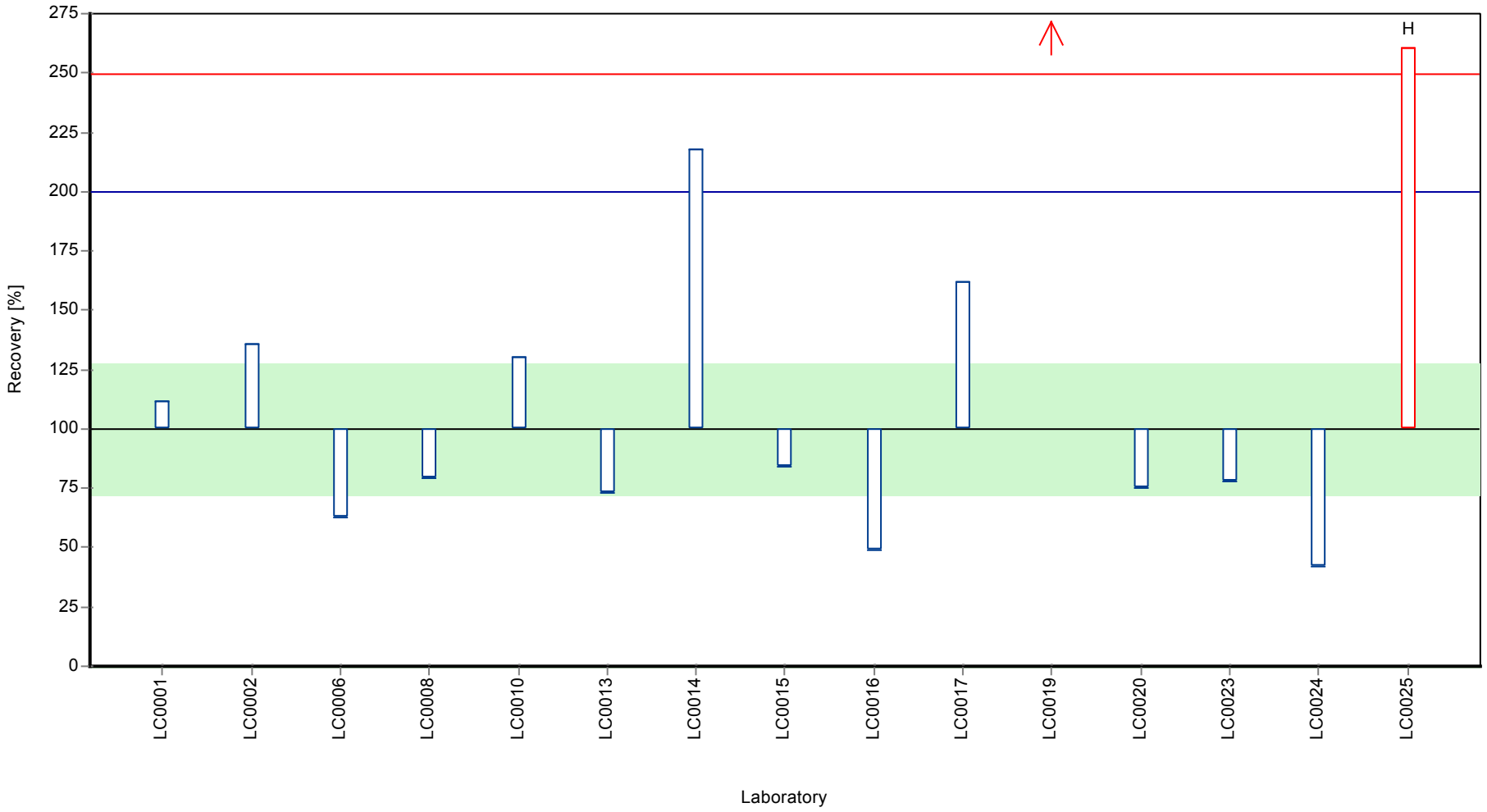
	all results	without outliers	Unit
Mean ± CI (99%)	3.41 ± 2.54	2.38 ± 0.986	mg/kg DM
Minimum	0.999	0.999	mg/kg DM
Maximum	14	5.17	mg/kg DM
Standard deviation	3.28	1.19	mg/kg DM
rel. standard deviation	96.3	49.9	%
n	15	13	-

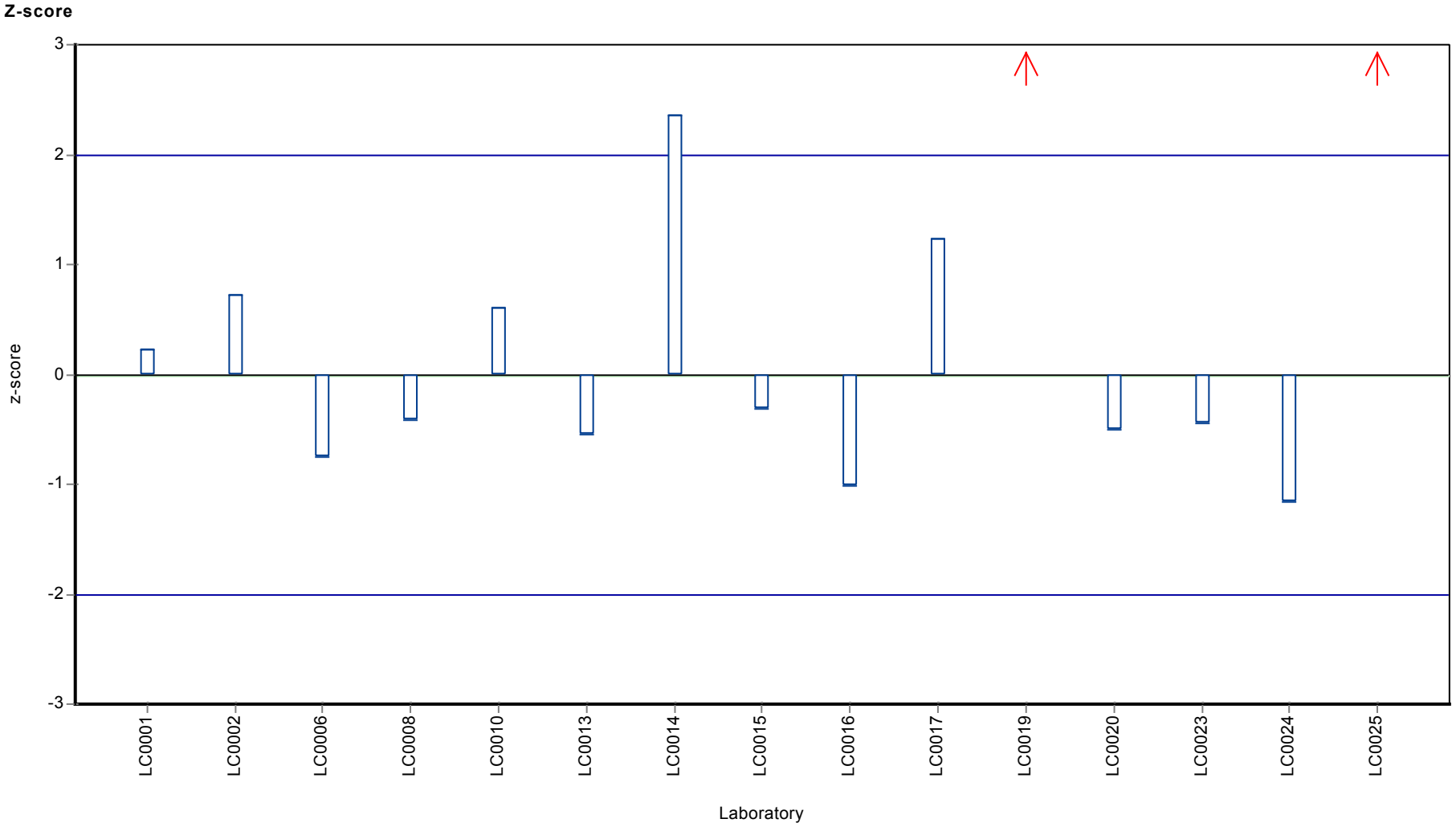
Graphical presentation of results

Results



Recovery rate




Z-score
3
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1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0006
LC0008
LC0010
LC0013
LC0014
LC0015
LC0016
LC0017
LC0019
LC0020
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Silver

Unit	mg/kg DM
Assigned value ± U (k=2)	13 ± 0.967
Criterion	2.05 (16 %)
Minimum - Maximum	8.45 - 16.9
Control test value ± U (k=2)	-

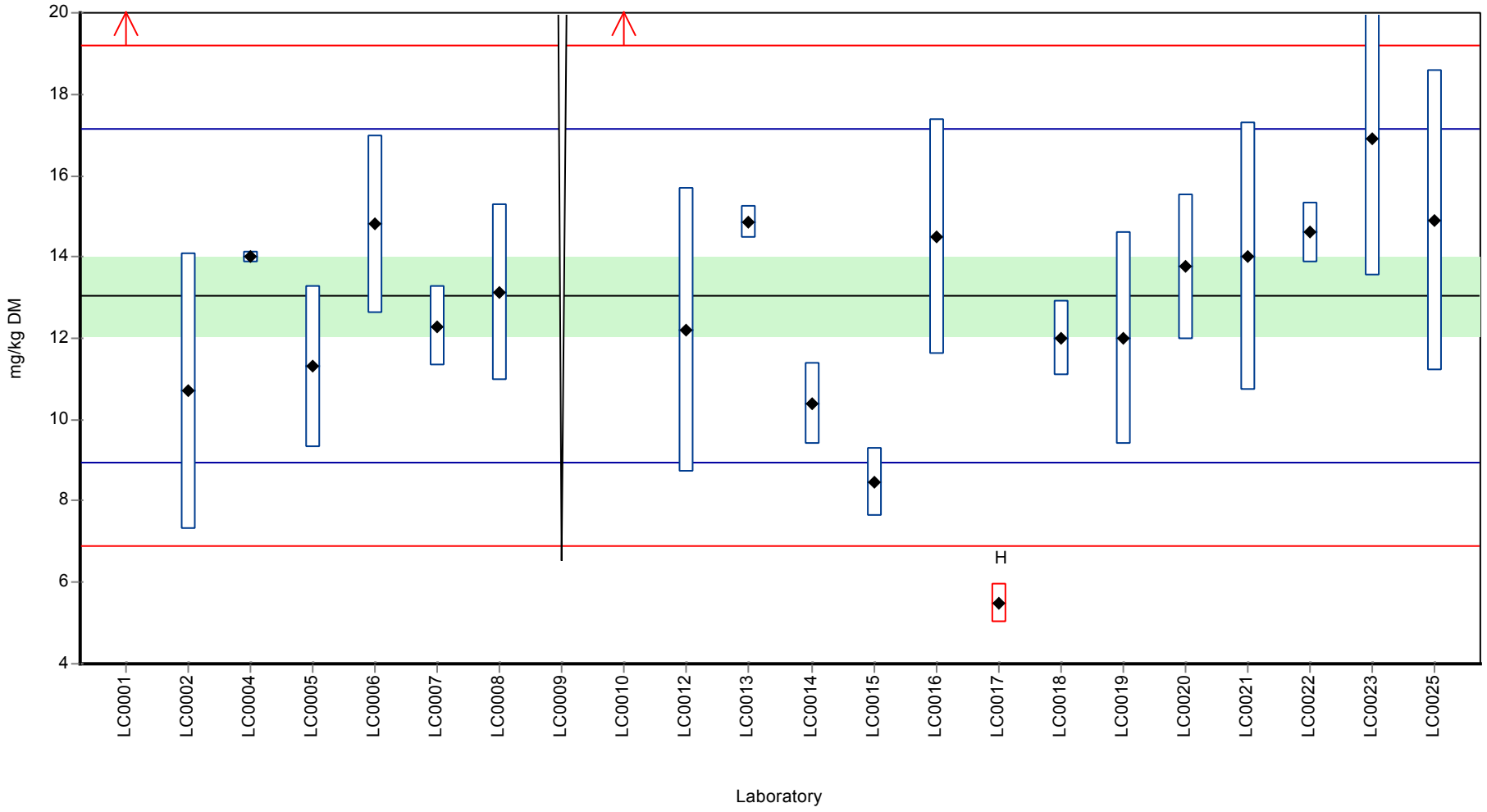
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	24	2.71	184	5.34	H
LC0002	10.7	3.4	82	-1.14	
LC0003	-	-	-	-	
LC0004	14	0.14	107	0.47	
LC0005	11.3	2	86.6	-0.85	
LC0006	14.8	2.2	113	0.86	
LC0007	12.3	1	94.3	-0.36	
LC0008	13.125	2.171	101	0.04	
LC0009	< 20 (LOQ)	-	-	-	
LC0010	23.2	2.3	178	4.95	H
LC0011	-	-	-	-	
LC0012	12.2	3.5	93.5	-0.41	
LC0013	14.84	0.4	114	0.88	
LC0014	10.4	1	79.7	-1.29	
LC0015	8.45	0.85	64.8	-2.24	
LC0016	14.5	2.9	111	0.71	
LC0017	5.4882	0.479	42.1	-3.68	H
LC0018	12	0.92	92	-0.51	
LC0019	12	2.6	92	-0.51	
LC0020	13.75	1.802	105	0.34	
LC0021	14	3.3	107	0.47	
LC0022	14.6	0.745	112	0.76	
LC0023	16.9	3.38	130	1.88	
LC0024	-	-	-	-	
LC0025	14.9	3.7	114	0.91	

Characteristics of parameter

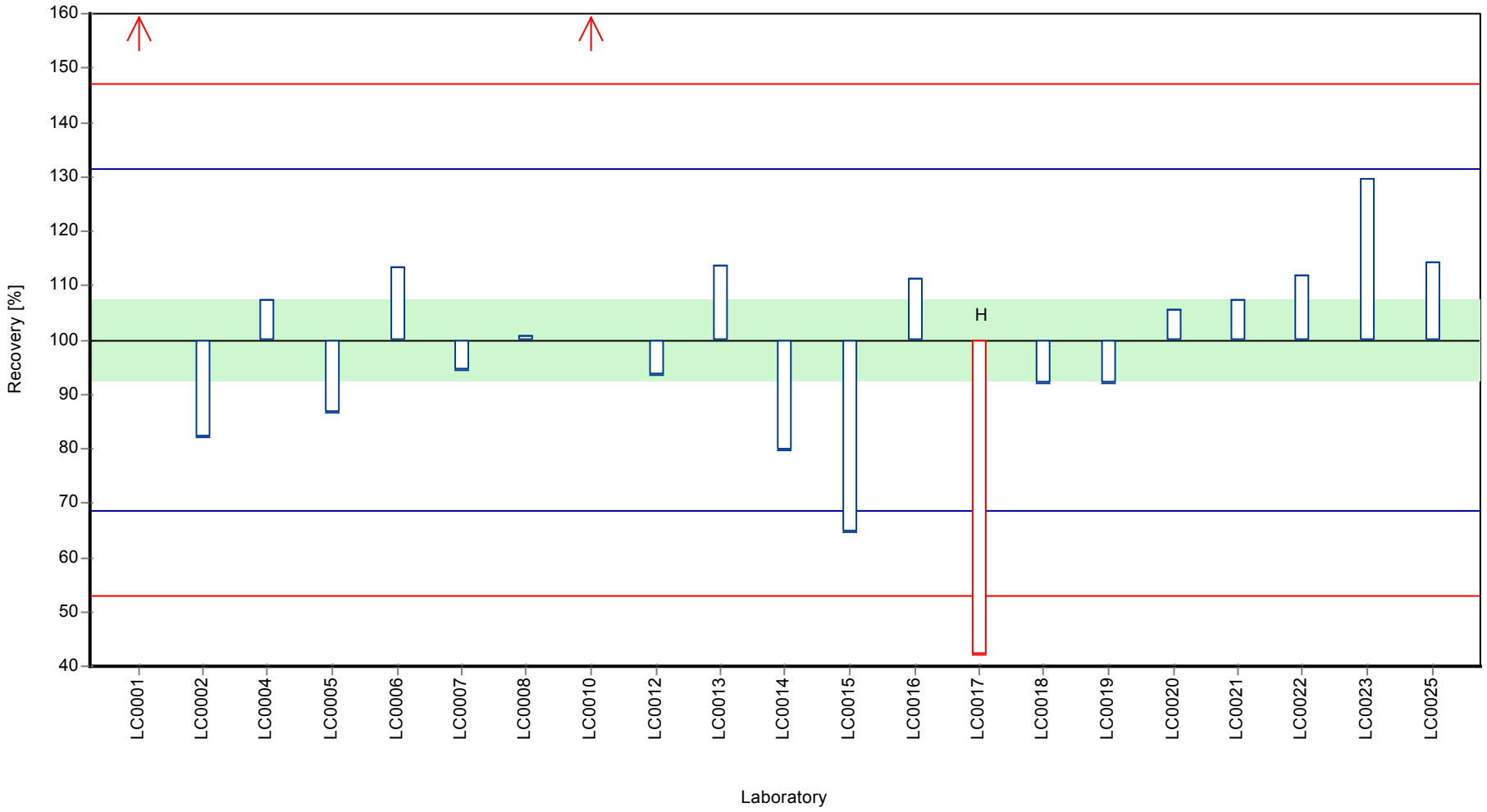
	all results	without outliers	Unit
Mean ± CI (99%)	13.7 ± 2.71	13 ± 1.45	mg/kg DM
Minimum	5.49	8.45	mg/kg DM
Maximum	24	16.9	mg/kg DM
Standard deviation	4.14	2.05	mg/kg DM
rel. standard deviation	30.3	15.7	%
n	21	18	-

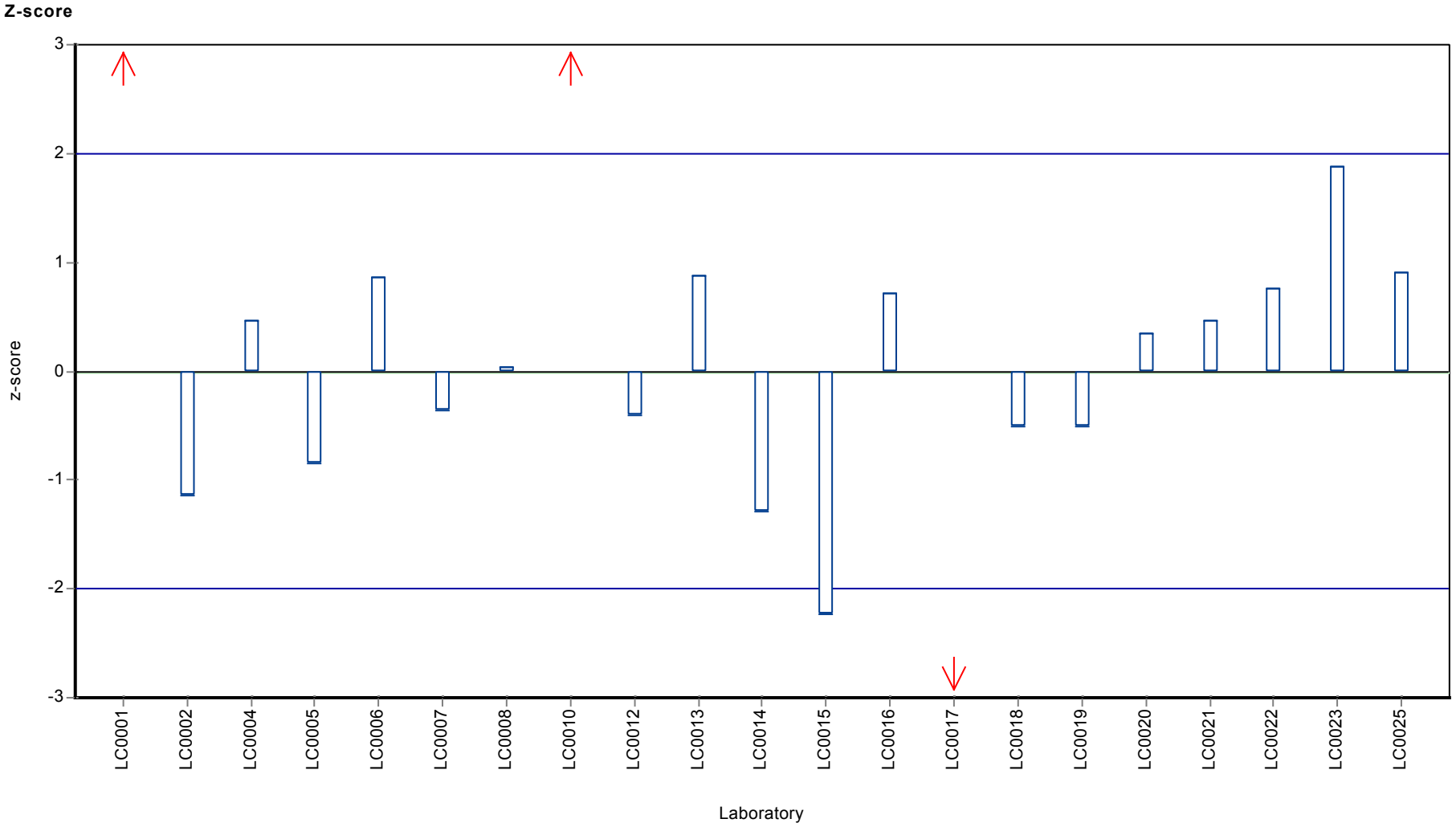
Graphical presentation of results

Results



Recovery rate

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z-score
LC0001
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LC0008
LC0010
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0025
Laboratory

Parameter oriented report

AB07

Sum 16 PAH (acc. to EPA)

Unit	mg/kg DM
Assigned value ± U (k=2)	1.78 ± 0.295
Criterion	0.644 (36 %)
Minimum - Maximum	0.63 - 2.8
Control test value ± U (k=2)	-

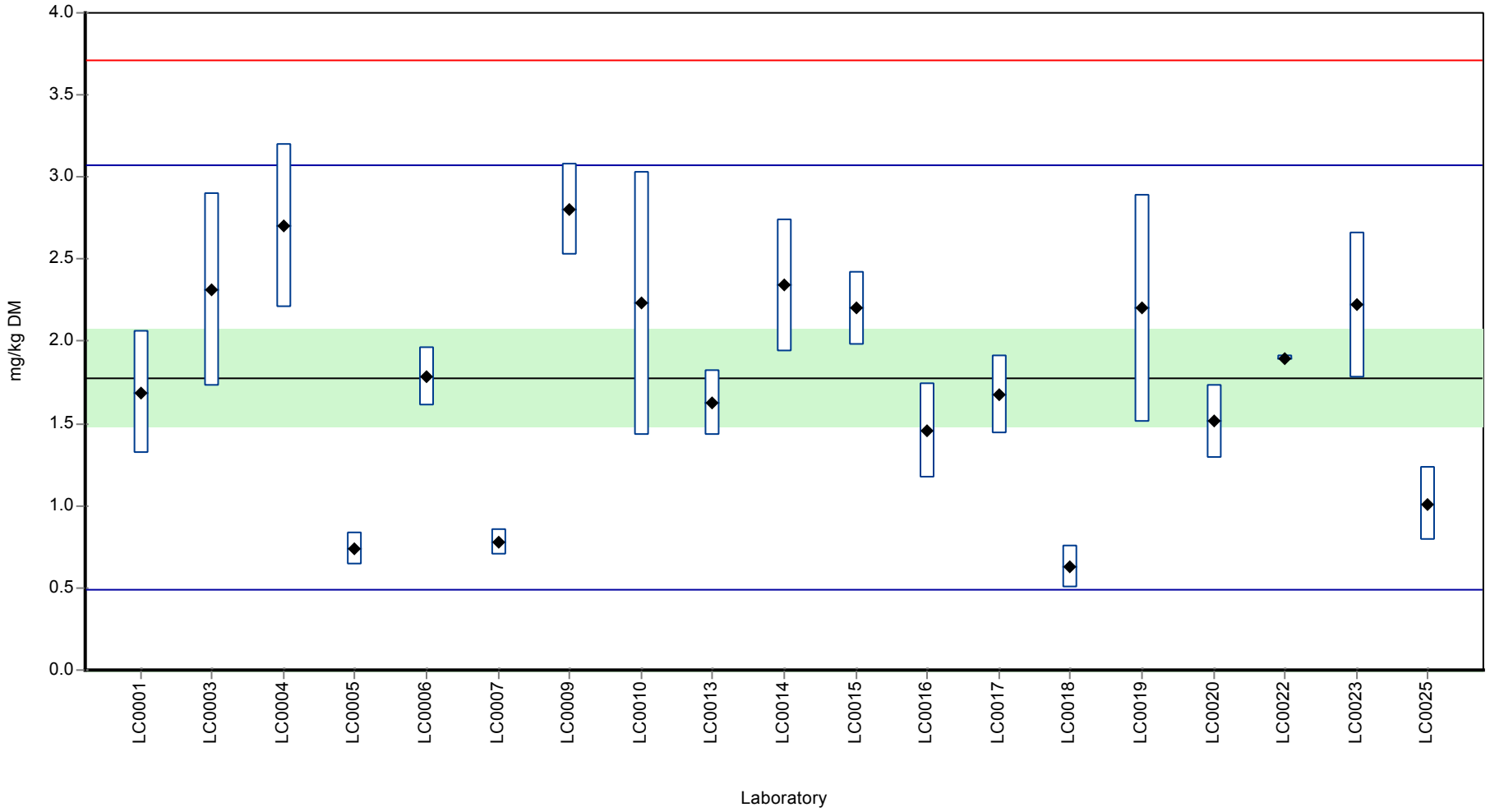
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	1.69	0.37	95	-0.14	
LC0002	-	-	-	-	
LC0003	2.313	0.592	130	0.83	
LC0004	2.7	0.5	152	1.43	
LC0005	0.74	0.1	41.6	-1.61	
LC0006	1.784	0.178	100	0.01	
LC0007	0.78	0.08	43.8	-1.55	
LC0008	-	-	-	-	
LC0009	2.8	0.28	157	1.58	
LC0010	2.23	0.8	125	0.7	
LC0011	-	-	-	-	
LC0012	-	-	-	-	
LC0013	1.63	0.2	91.6	-0.23	
LC0014	2.34	0.4	131	0.87	
LC0015	2.2	0.22	124	0.65	
LC0016	1.46	0.29	82	-0.5	
LC0017	1.675	0.238	94.1	-0.16	
LC0018	0.63	0.13	35.4	-1.79	
LC0019	2.2	0.69	124	0.65	
LC0020	1.512	0.227	85	-0.42	
LC0021	-	-	-	-	
LC0022	1.9	0.0154	107	0.19	
LC0023	2.2232	0.44464	125	0.69	
LC0024	-	-	-	-	
LC0025	1.01	0.225	56.7	-1.2	

Characteristics of parameter

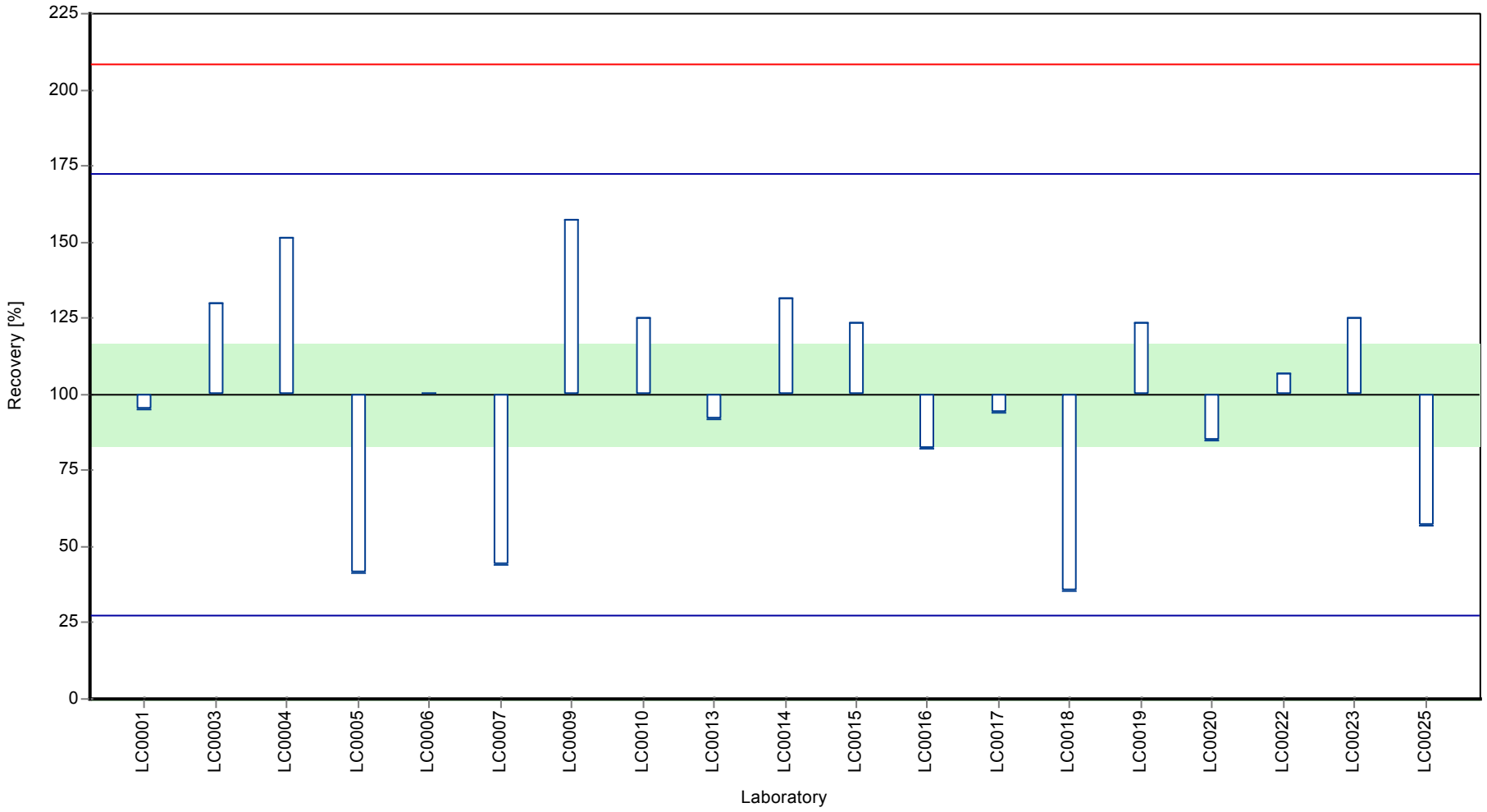
	all results	without outliers	Unit
Mean ± CI (99%)	1.78 ± 0.443	1.78 ± 0.443	mg/kg DM
Minimum	0.63	0.63	mg/kg DM
Maximum	2.8	2.8	mg/kg DM
Standard deviation	0.644	0.644	mg/kg DM
rel. standard deviation	36.2	36.2	%
n	19	19	-

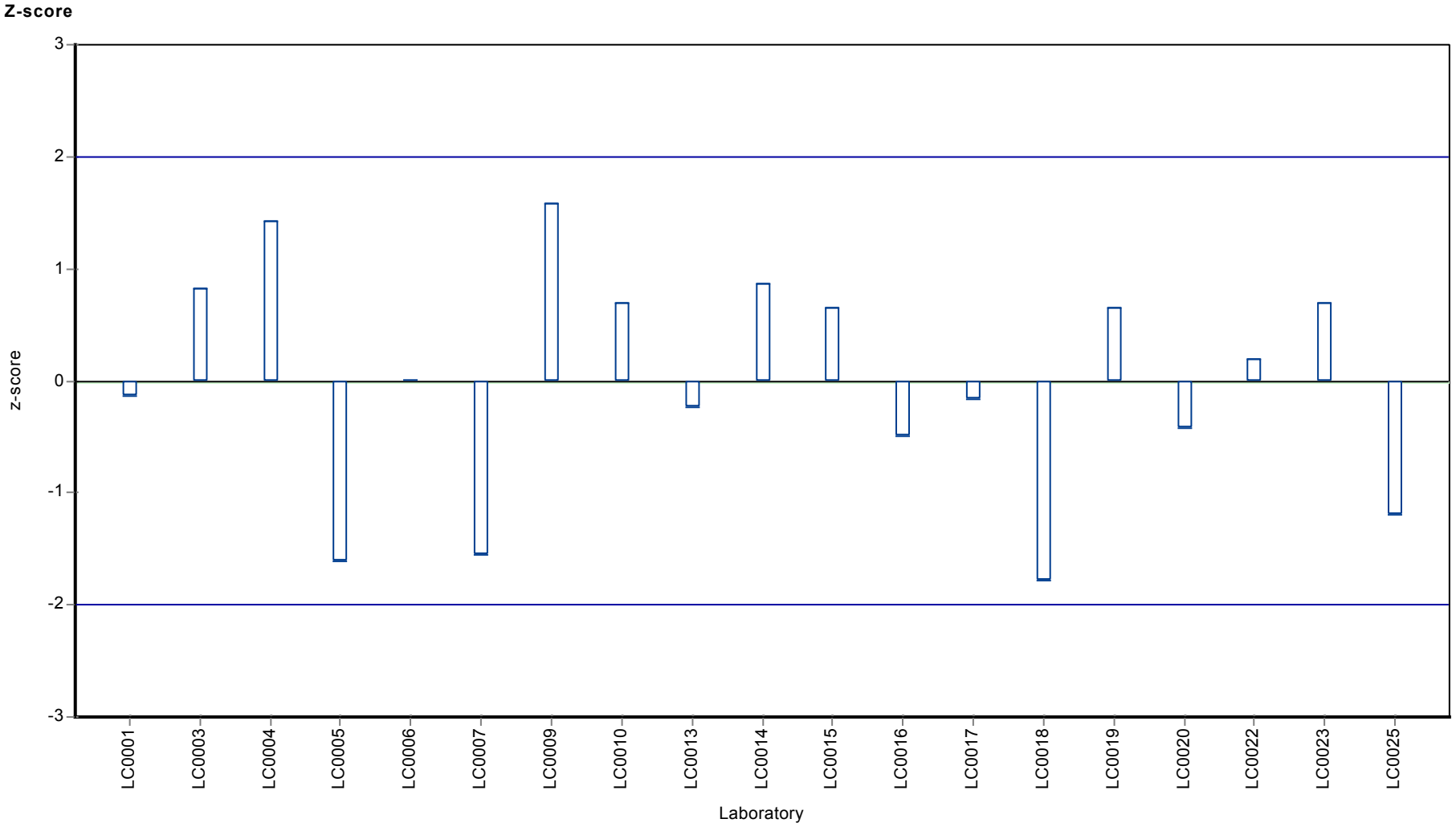
Graphical presentation of results

Results



Recovery rate

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LC0001
LC0003
LC0004
LC0005
LC0006
LC0007
LC0009
LC0010
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0022
LC0023
LC0025
Laboratory

Parameter oriented report

AB07

Tin

Unit	mg/kg DM
Assigned value ± U (k=2)	36.2 ± 2.3
Criterion	4.99 (14 %)
Minimum - Maximum	28.5 - 46.5
Control test value ± U (k=2)	-

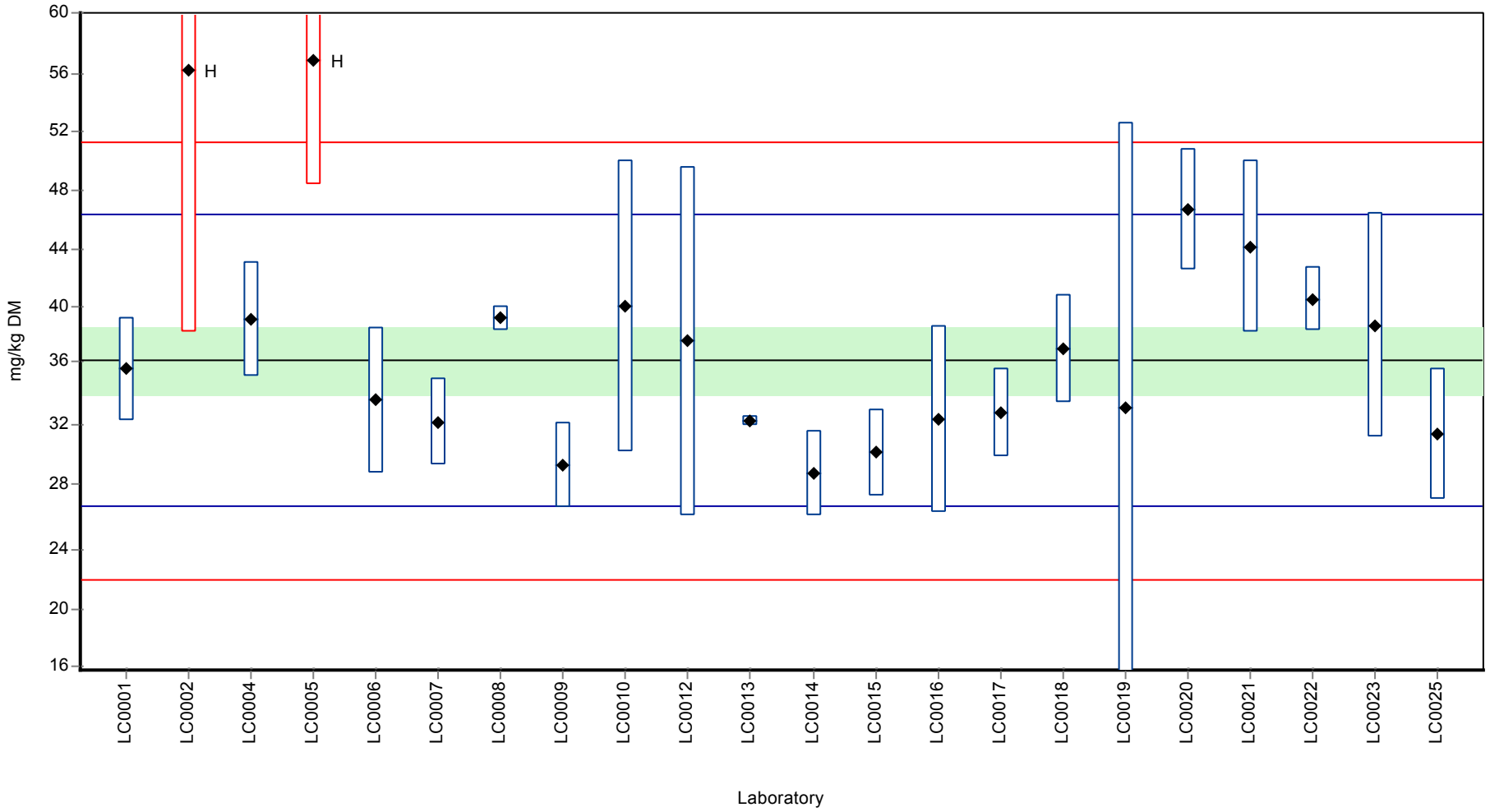
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	35.6	3.52	98.4	-0.12	
LC0002	56.1	18	155	3.99	H
LC0003	-	-	-	-	
LC0004	39	3.9	108	0.57	
LC0005	56.7	8.5	157	4.11	H
LC0006	33.5	5	92.6	-0.54	
LC0007	32	3	88.5	-0.84	
LC0008	39.092	0.856	108	0.58	
LC0009	29	2.9	80.2	-1.44	
LC0010	39.9	10	110	0.75	
LC0011	-	-	-	-	
LC0012	37.5	12	104	0.27	
LC0013	32.06	0.35	88.6	-0.82	
LC0014	28.5	2.9	78.8	-1.54	
LC0015	29.9	2.99	82.6	-1.26	
LC0016	32.2	6.4	89	-0.8	
LC0017	32.617	2.98	90.2	-0.71	
LC0018	37	3.7	102	0.17	
LC0019	33	19.5	91.2	-0.64	
LC0020	46.53	4.141	129	2.08	
LC0021	44	5.9	122	1.57	
LC0022	40.4	2.18	112	0.85	
LC0023	38.6	7.72	107	0.49	
LC0024	-	-	-	-	
LC0025	31.2	4.5	86.2	-1	

Characteristics of parameter

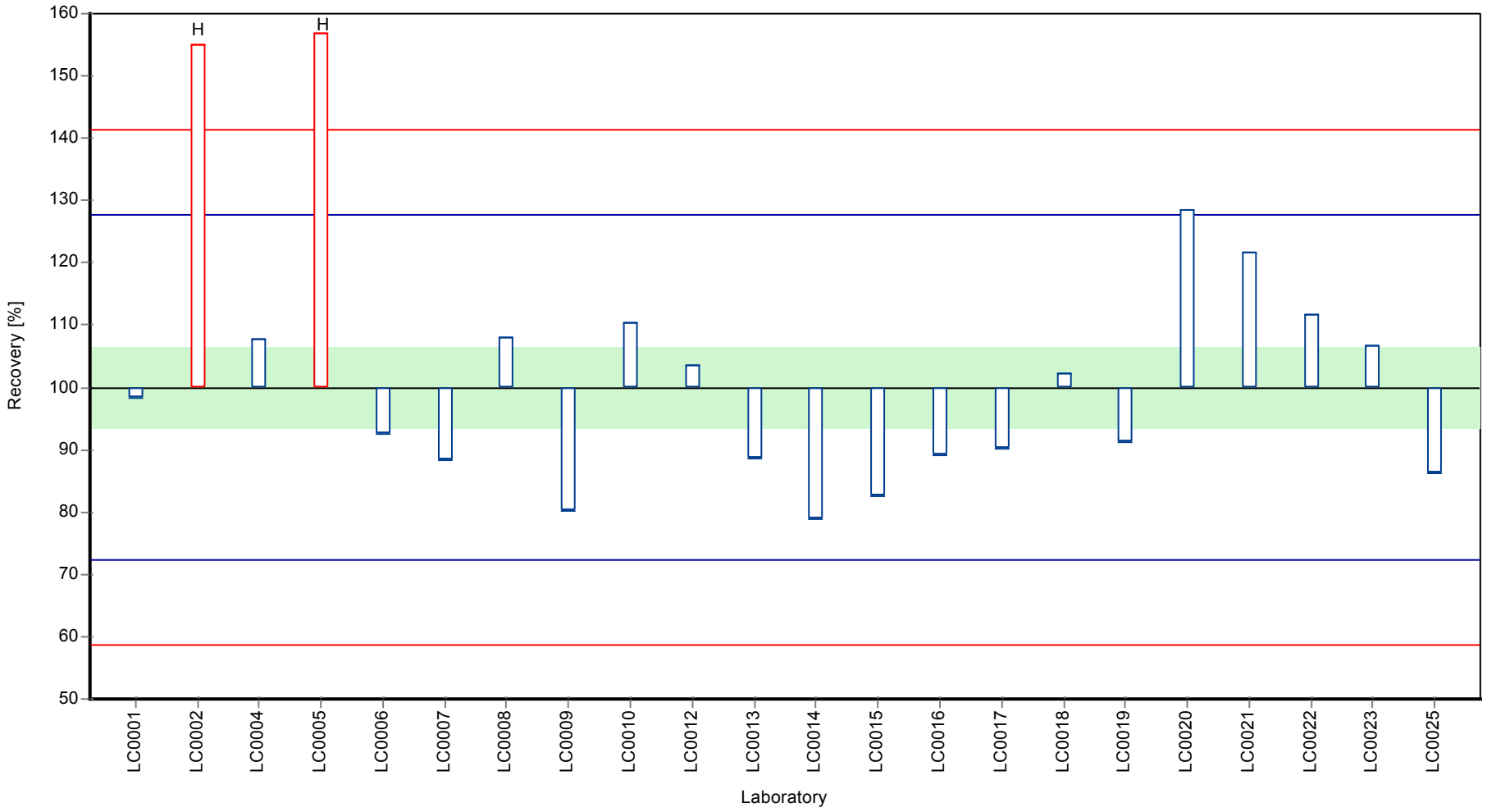
	all results	without outliers	Unit
Mean ± CI (99%)	37.5 ± 4.96	35.6 ± 3.35	mg/kg DM
Minimum	28.5	28.5	mg/kg DM
Maximum	56.7	46.5	mg/kg DM
Standard deviation	7.75	4.99	mg/kg DM
rel. standard deviation	20.7	14	%
n	22	20	-

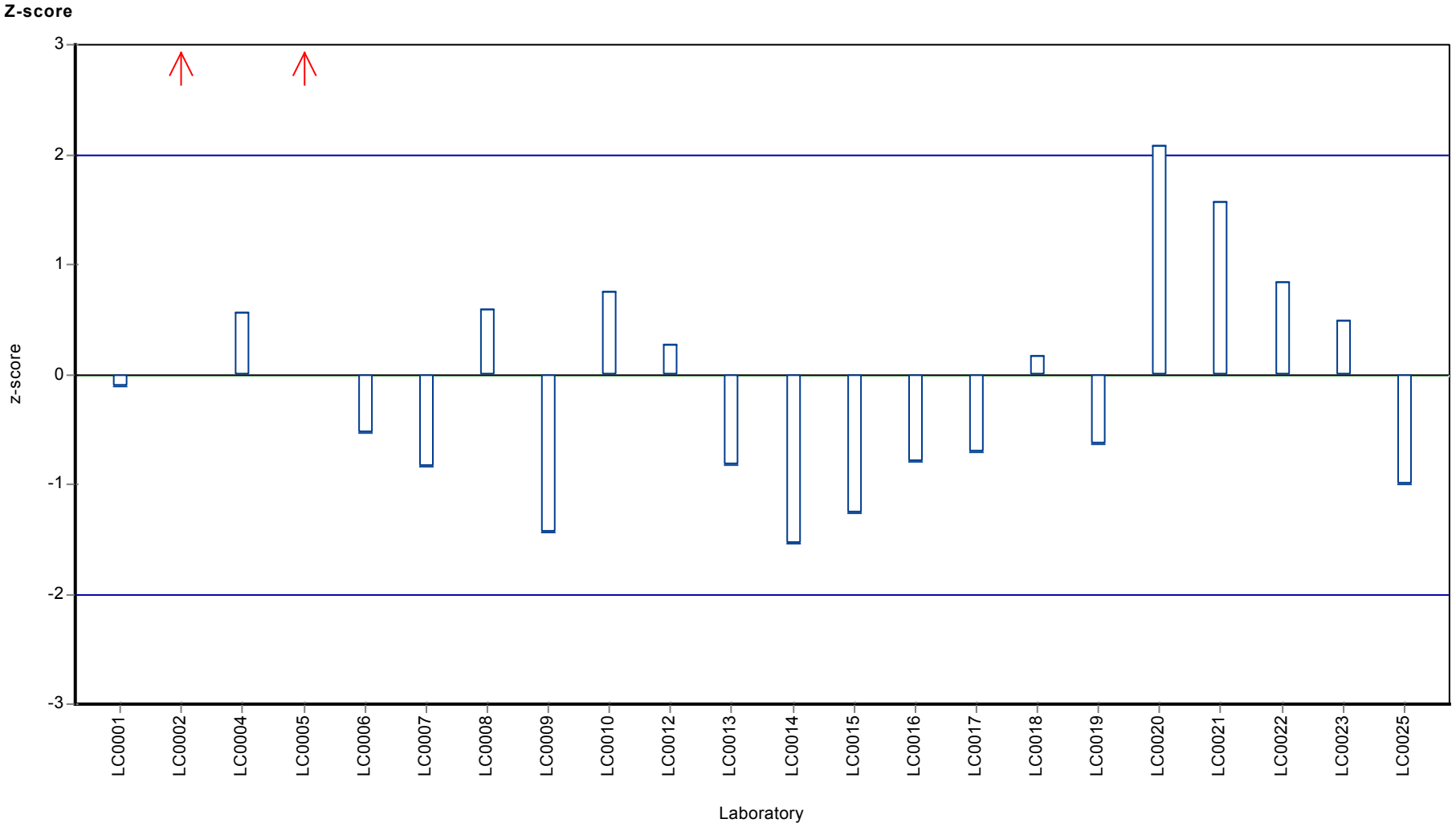
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0004
LC0005
LC0006
LC0007
LC0008
LC0009
LC0010
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0025
Laboratory

Parameter oriented report

AB07

TOC (as C)

Unit	mg/kg DM
Assigned value ± U (k=2)	41100 ± 2100
Criterion	4810 (12 %)
Minimum - Maximum	31000 - 48000
Control test value ± U (k=2)	-

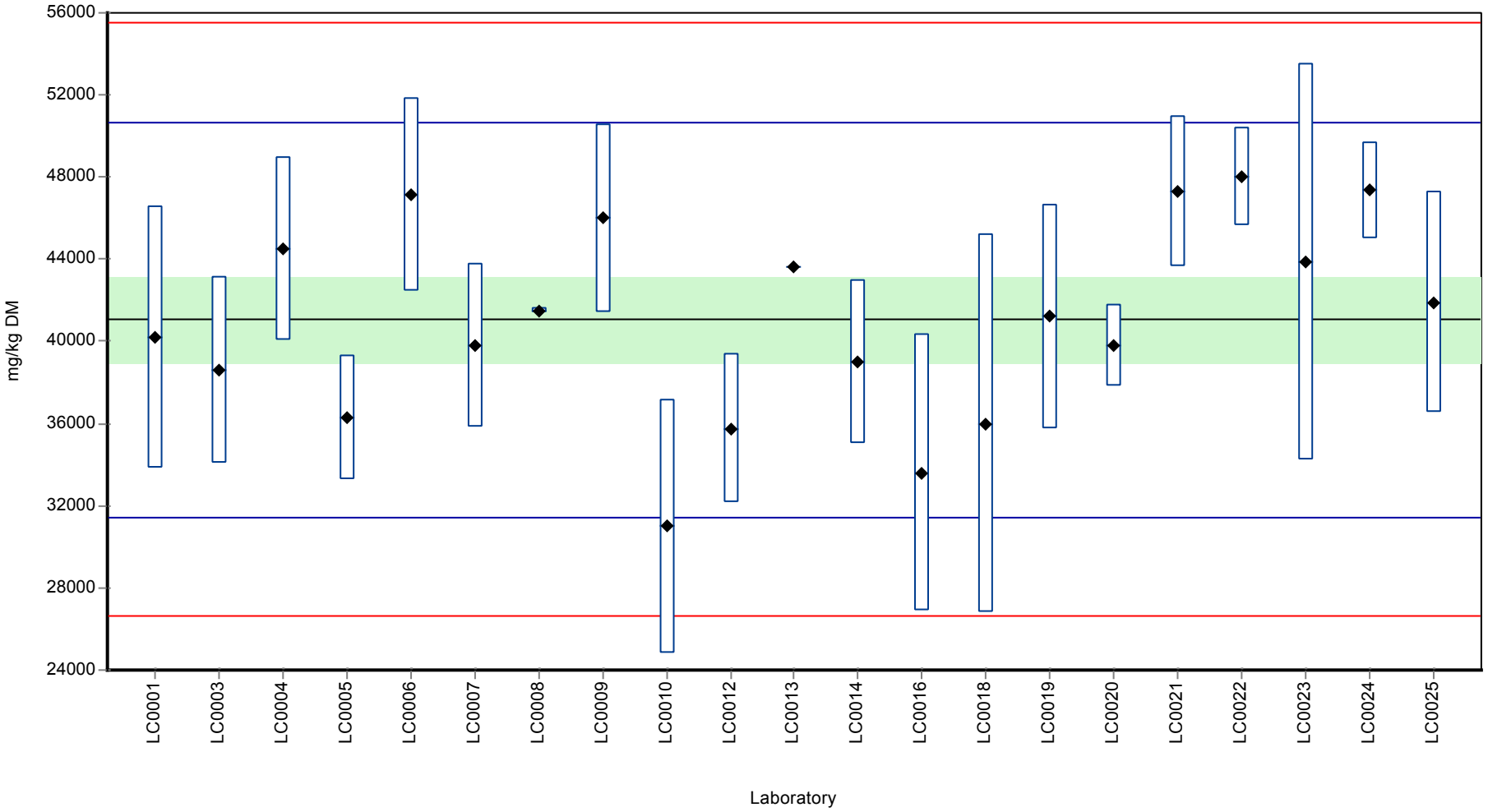
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	40200	6350	97.9	-0.18	
LC0002	-	-	-	-	
LC0003	38600	4516	94	-0.51	
LC0004	44500	4450	108	0.71	
LC0005	36295	3000	88.4	-0.99	
LC0006	47153	4715	115	1.26	
LC0007	39800	4000	96.9	-0.26	
LC0008	41500	120	101	0.09	
LC0009	46000	4600	112	1.03	
LC0010	31000	6200	75.5	-2.09	
LC0011	-	-	-	-	
LC0012	35765	3600	87.1	-1.1	
LC0013	43600	10	106	0.53	
LC0014	39000	4000	95	-0.43	
LC0015	-	-	-	-	
LC0016	33600	6720	81.8	-1.55	
LC0017	-	-	-	-	
LC0018	36000	9200	87.7	-1.05	
LC0019	41200	5500	100	0.03	
LC0020	39800	1990	96.9	-0.26	
LC0021	47300	3700	115	1.3	
LC0022	48000	2400	117	1.44	
LC0023	43900	9658	107	0.59	
LC0024	47343.3	2367	115	1.3	
LC0025	41900	5400	102	0.17	

Characteristics of parameter

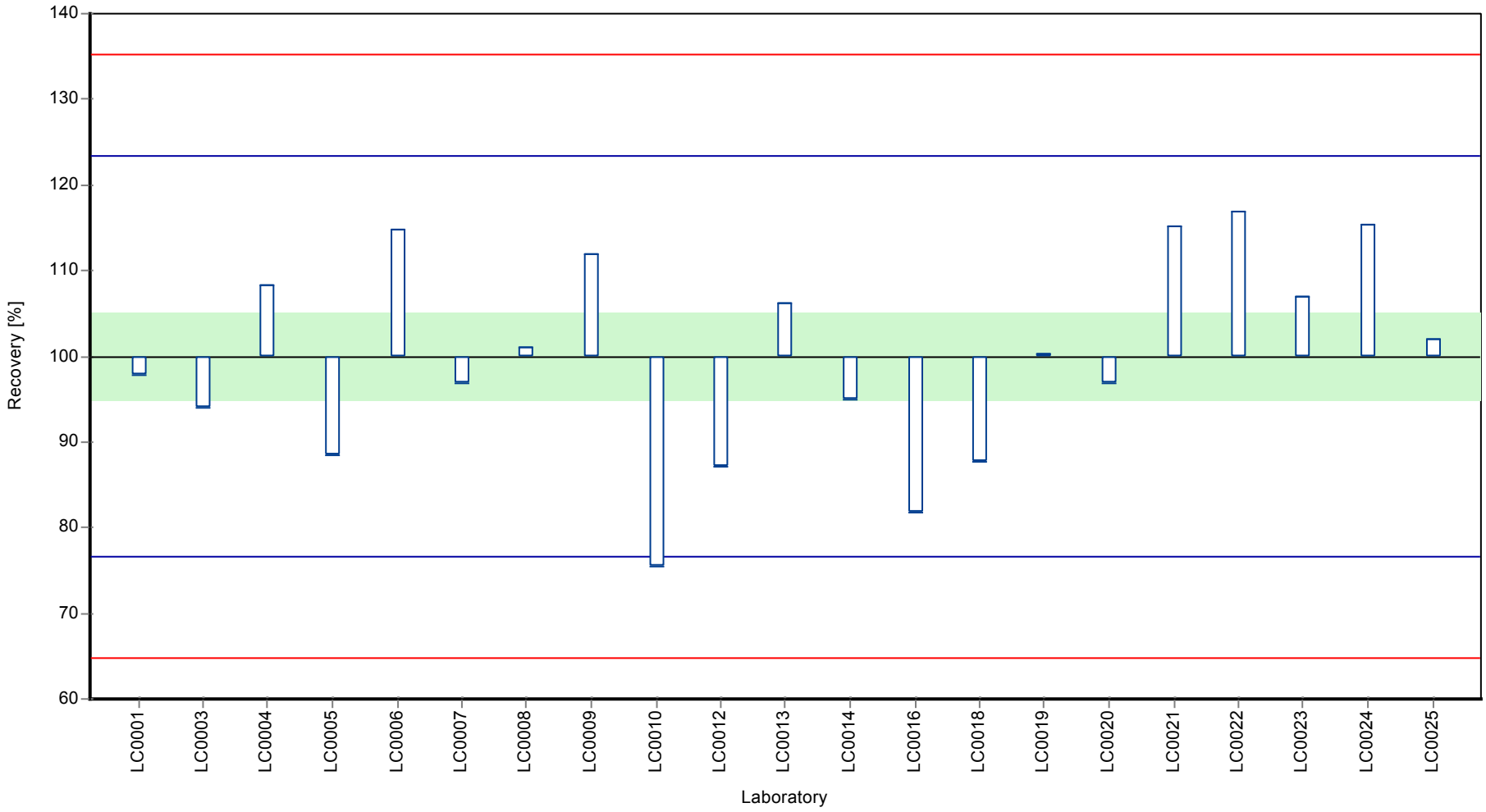
	all results	without outliers	Unit
Mean ± CI (99%)	41100 ± 3150	41100 ± 3150	mg/kg DM
Minimum	31000	31000	mg/kg DM
Maximum	48000	48000	mg/kg DM
Standard deviation	4810	4810	mg/kg DM
rel. standard deviation	11.7	11.7	%
n	21	21	-

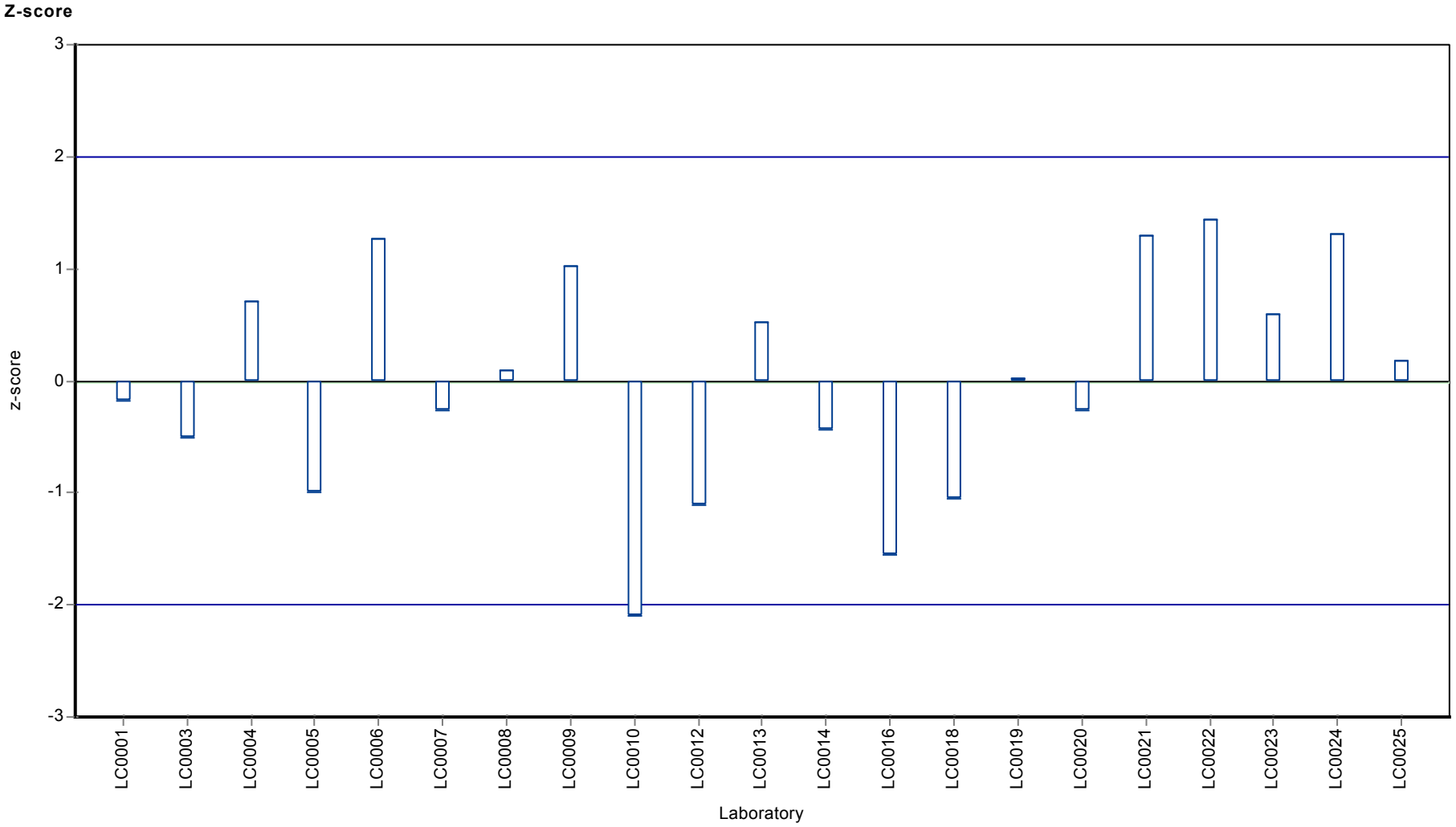
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0003
LC0004
LC0005
LC0006
LC0007
LC0008
LC0009
LC0010
LC0012
LC0013
LC0014
LC0016
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

Parameter oriented report

AB07

Vanadium

Unit	mg/kg DM
Assigned value ± U (k=2)	20.1 ± 2.56
Criterion	4.96 (25 %)
Minimum - Maximum	10 - 33
Control test value ± U (k=2)	-

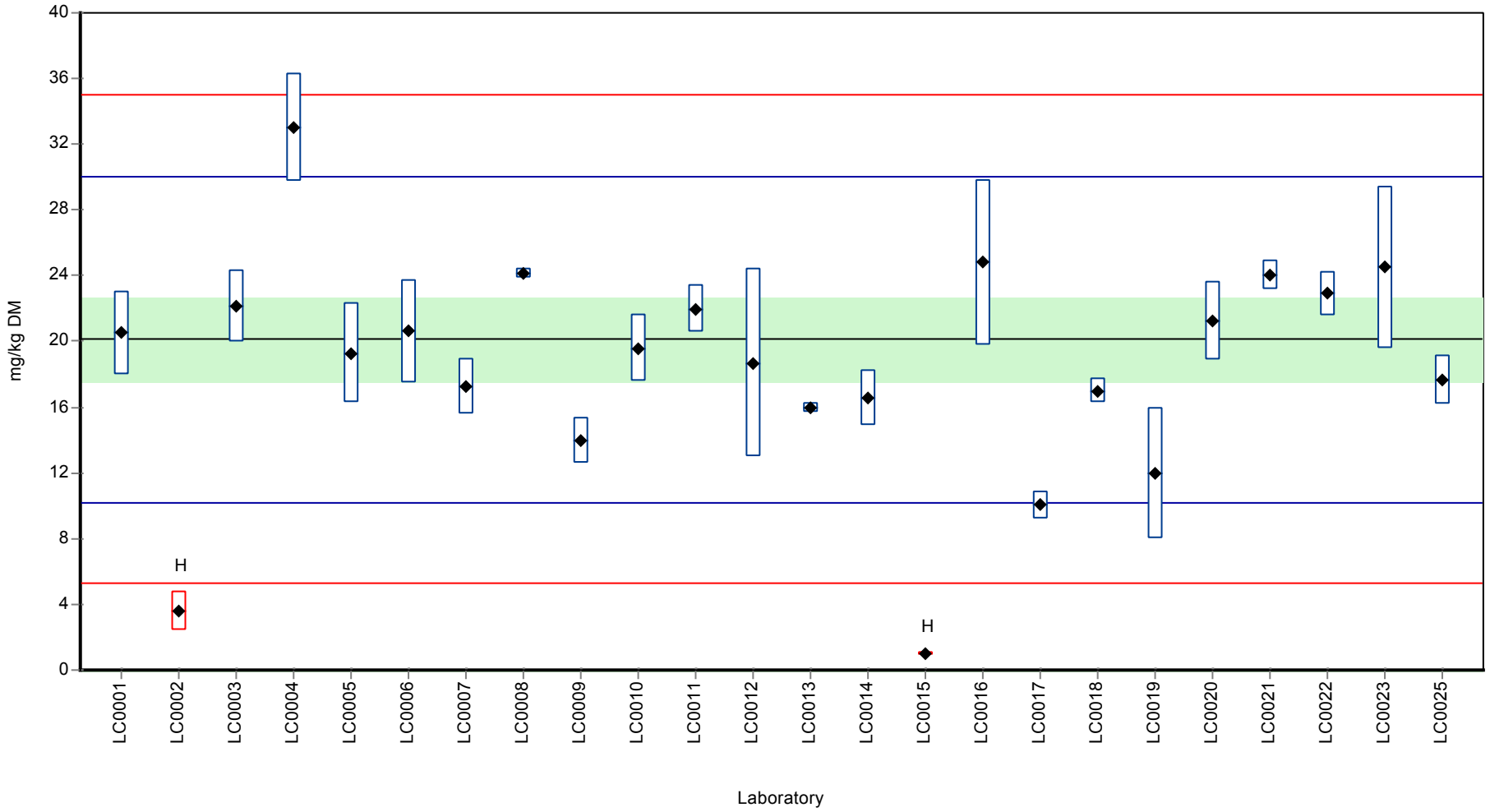
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	20.5	2.52	102	0.08	
LC0002	3.59	1.15	17.8	-3.33	H
LC0003	22.15	2.21	110	0.41	
LC0004	33	3.3	164	2.6	
LC0005	19.3	3	96	-0.16	
LC0006	20.6	3.1	102	0.1	
LC0007	17.3	1.7	86	-0.57	
LC0008	24.167	0.294	120	0.82	
LC0009	14	1.4	69.6	-1.23	
LC0010	19.6	2	97.5	-0.1	
LC0011	21.97	1.47	109	0.38	
LC0012	18.7	5.7	93	-0.28	
LC0013	15.93	0.28	79.2	-0.84	
LC0014	16.6	1.7	82.5	-0.71	
LC0015	1	0.1	5	-3.86	H
LC0016	24.8	5	123	0.95	
LC0017	10.025	0.897	49.8	-2.03	
LC0018	17	0.74	84.5	-0.63	
LC0019	12	4	59.7	-1.64	
LC0020	21.2	2.395	105	0.22	
LC0021	24	0.9	119	0.78	
LC0022	22.9	1.35	114	0.56	
LC0023	24.5	4.9	122	0.89	
LC0024	-	-	-	-	
LC0025	17.7	1.5	88	-0.49	

Characteristics of parameter

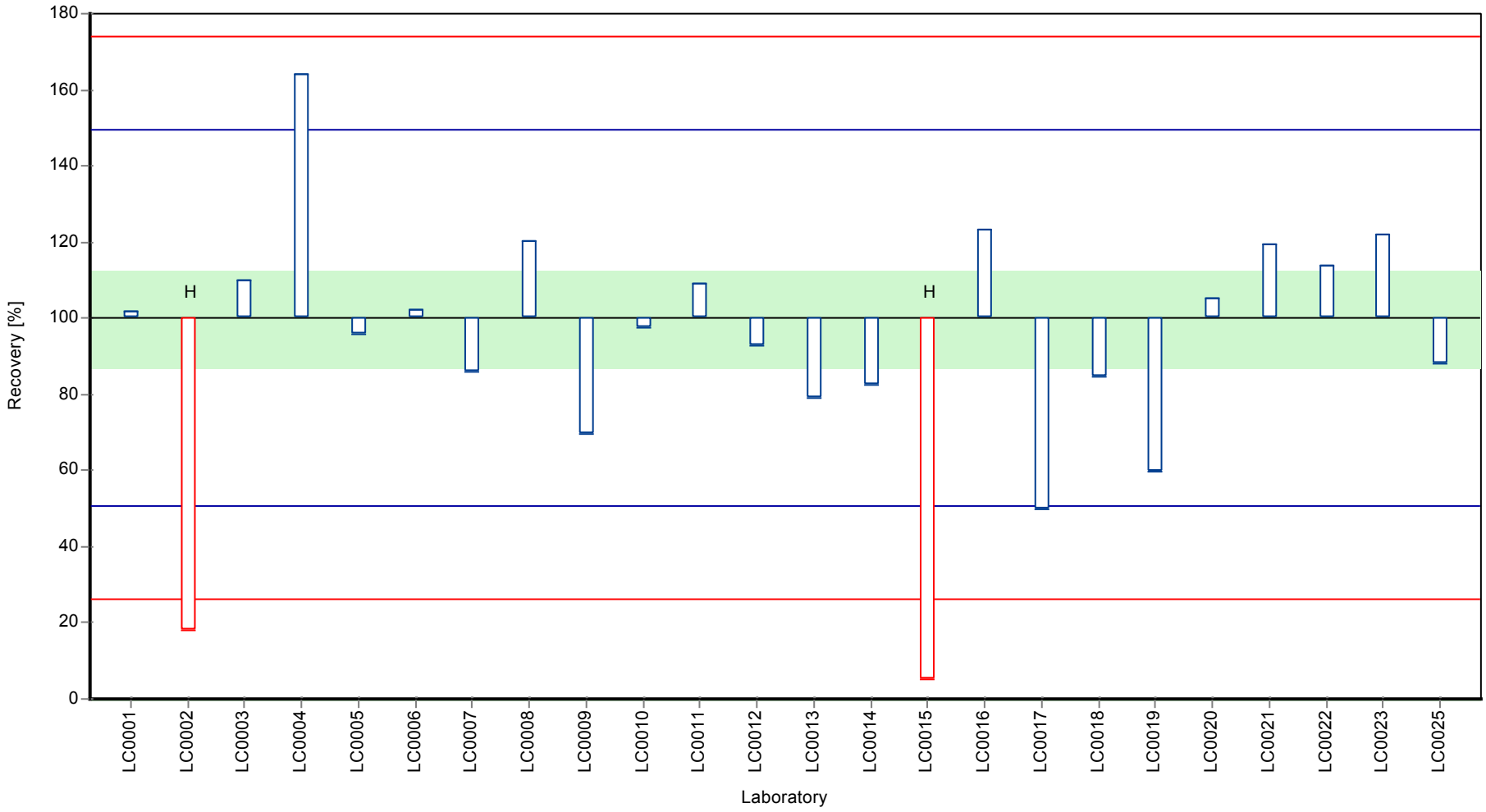
	all results	without outliers	Unit
Mean ± CI (99%)	18.4 ± 4.21	19.9 ± 3.17	mg/kg DM
Minimum	1	10	mg/kg DM
Maximum	33	33	mg/kg DM
Standard deviation	6.88	4.96	mg/kg DM
rel. standard deviation	37.3	24.9	%
n	24	22	-

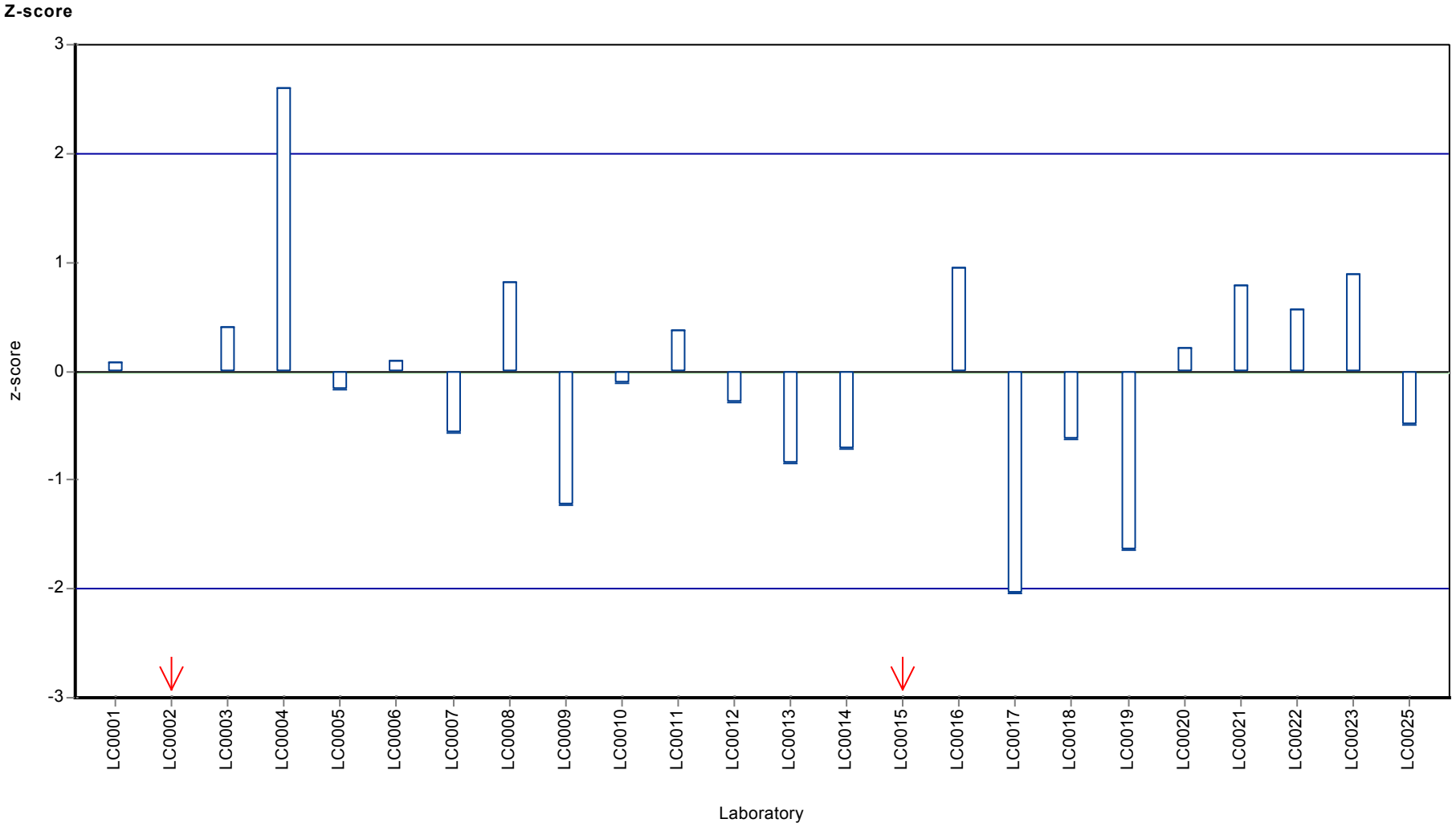
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
z-score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
LC0007
LC0008
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0025
Laboratory

Parameter oriented report

AB07

Zinc

Unit	mg/kg DM
Assigned value ± U (k=2)	2370 ± 117
Criterion	300 (13 %)
Minimum - Maximum	1630 - 2900
Control test value ± U (k=2)	-

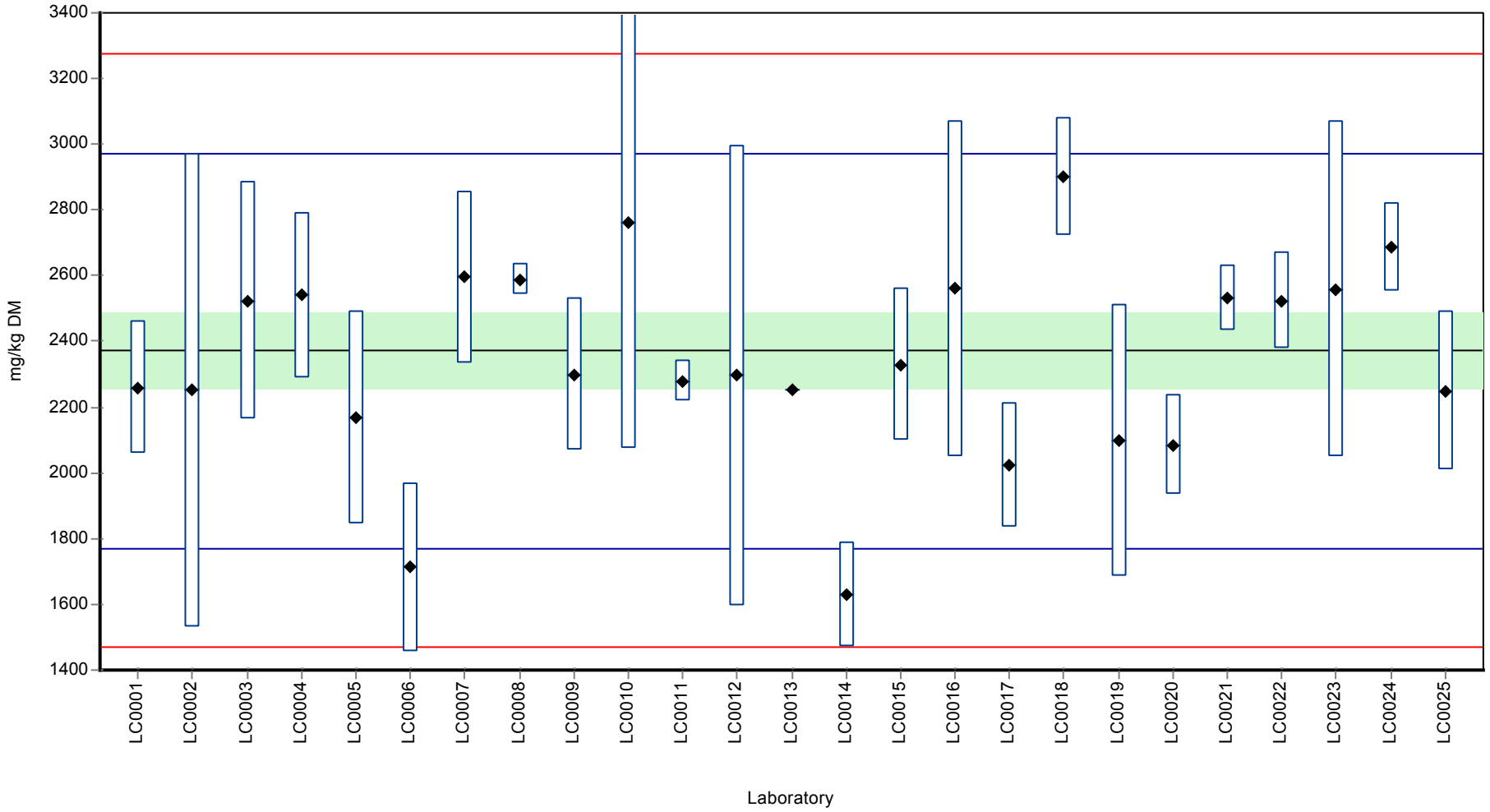
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	2260	203	95.3	-0.37	
LC0002	2251	720	94.9	-0.4	
LC0003	2524	363	106	0.51	
LC0004	2540	254	107	0.56	
LC0005	2167	325	91.3	-0.68	
LC0006	1713	257	72.2	-2.19	
LC0007	2595	260	109	0.74	
LC0008	2589.42	46.21	109	0.72	
LC0009	2300	230	97	-0.24	
LC0010	2763	691	116	1.3	
LC0011	2279	63.15	96.1	-0.31	
LC0012	2297	700	96.8	-0.25	
LC0013	2250.8	0.6	94.9	-0.4	
LC0014	1630	160	68.7	-2.47	
LC0015	2330	233	98.2	-0.14	
LC0016	2560	512	108	0.63	
LC0017	2023.6	187.5	85.3	-1.16	
LC0018	2900	180	122	1.76	
LC0019	2100	414	88.5	-0.91	
LC0020	2085.5	150.16	87.9	-0.95	
LC0021	2533	100	107	0.54	
LC0022	2524	146	106	0.51	
LC0023	2559.6	511.92	108	0.62	
LC0024	2685	134.3	113	1.04	
LC0025	2250	240	94.8	-0.41	

Characteristics of parameter

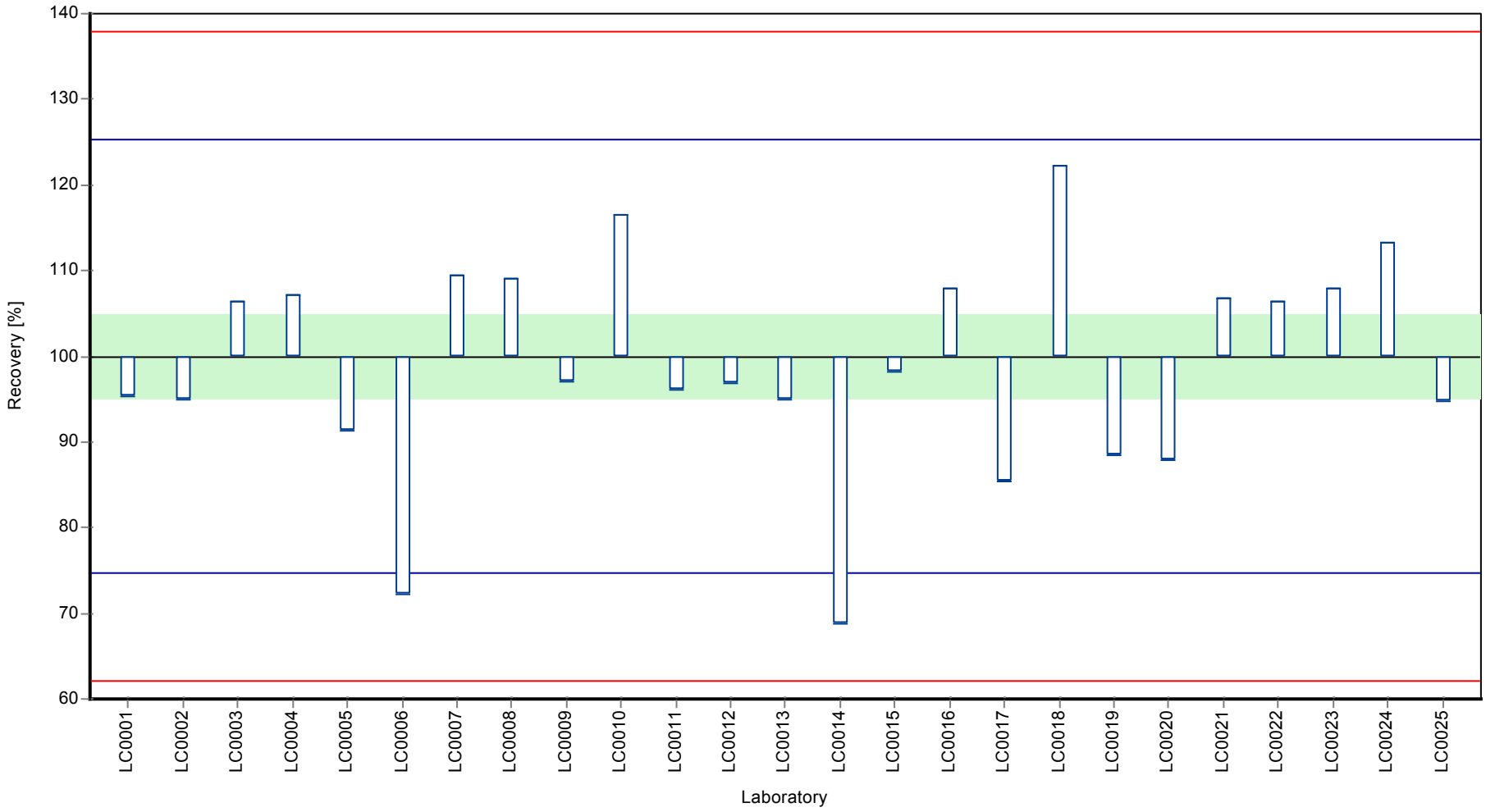
	all results	without outliers	Unit
Mean ± CI (99%)	2350 ± 180	2350 ± 180	mg/kg DM
Minimum	1630	1630	mg/kg DM
Maximum	2900	2900	mg/kg DM
Standard deviation	300	300	mg/kg DM
rel. standard deviation	12.8	12.8	%
n	25	25	-

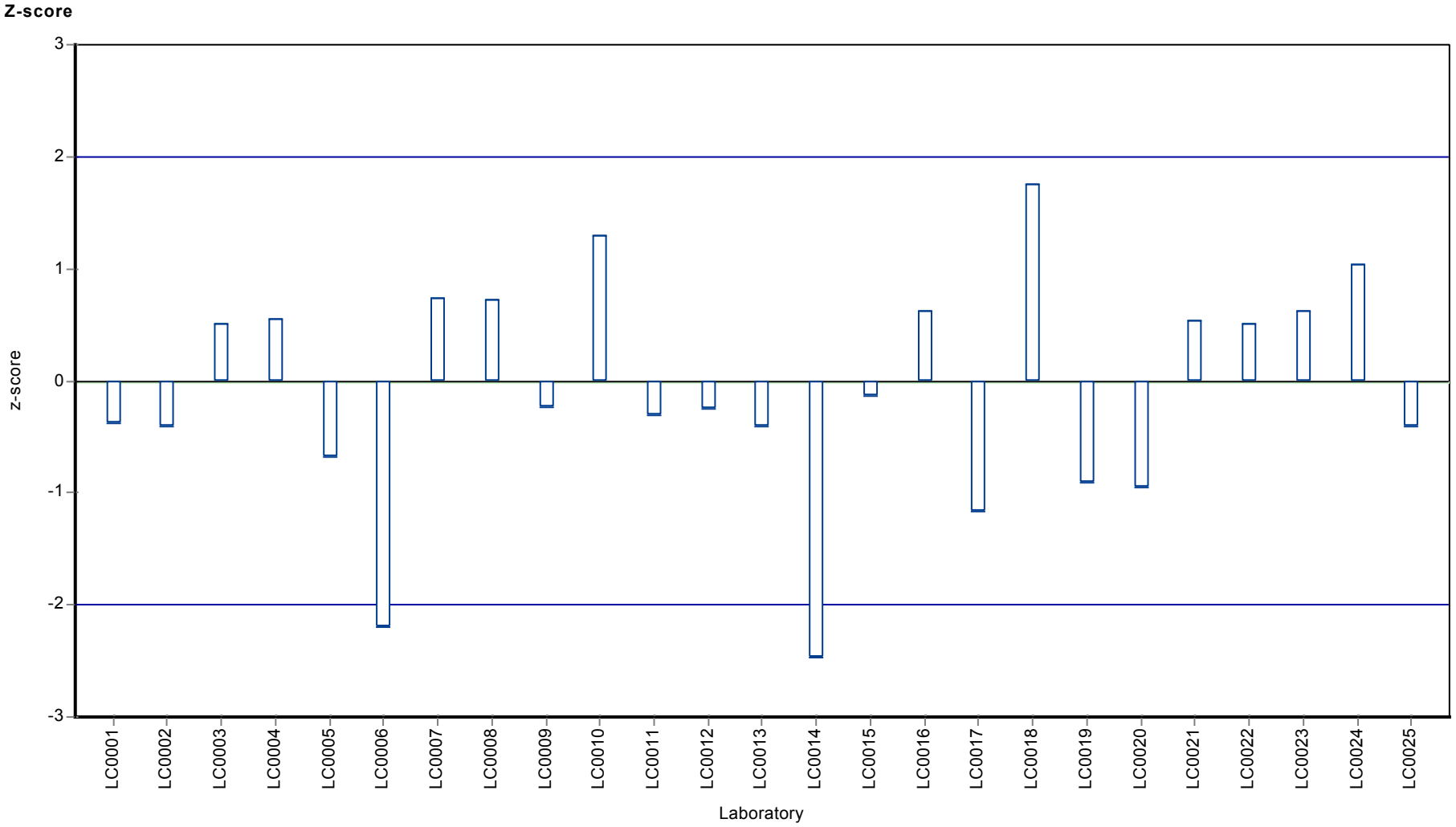
Graphical presentation of results

Results



Recovery rate




Z-score
z-score
3
2
1
0
-1
-2
-3
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
LC0007
LC0008
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0017
LC0018
LC0019
LC0020
LC0021
LC0022
LC0023
LC0024
LC0025
Laboratory

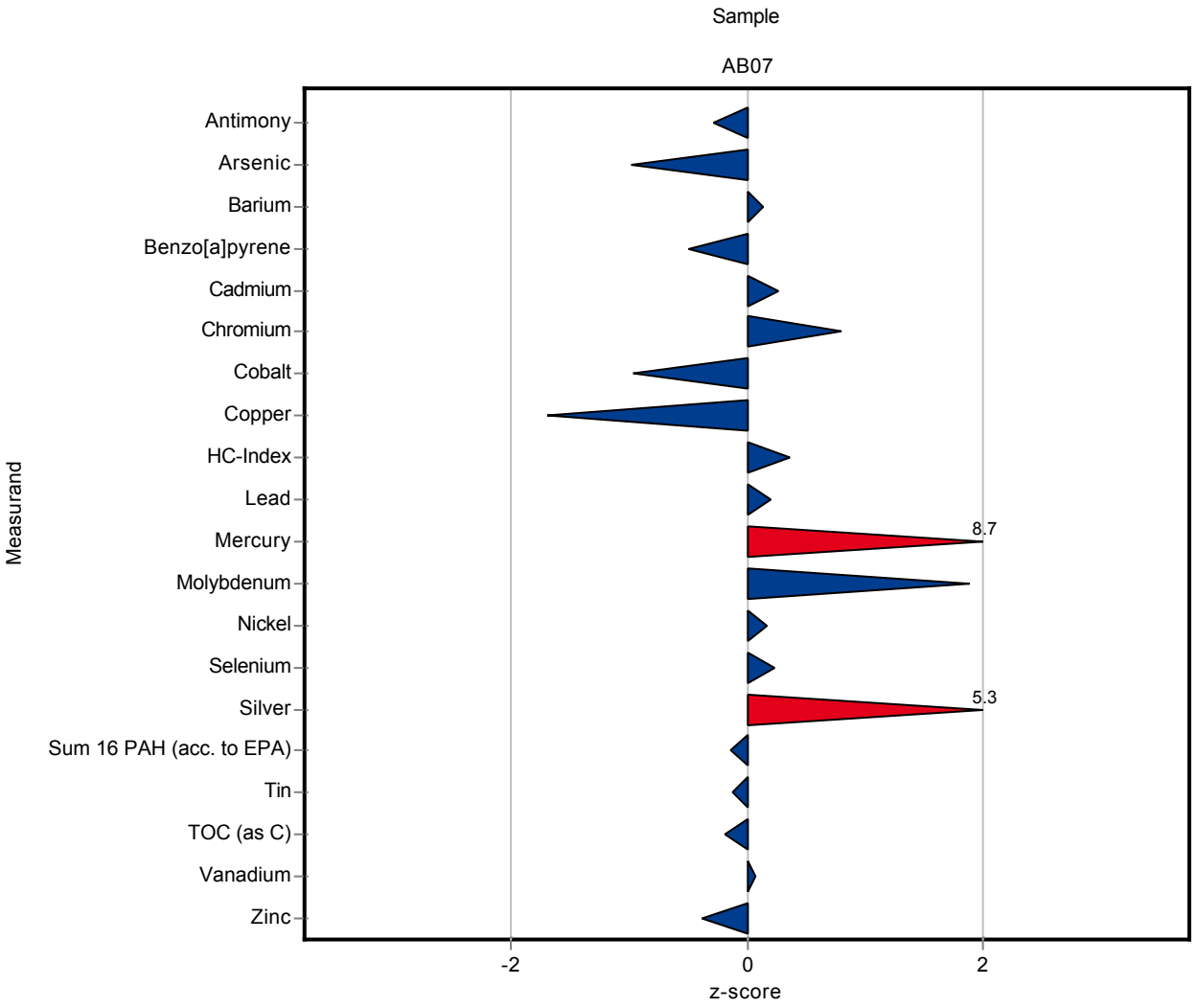
E8. Labororientierte Auswertung / Laboratory oriented report

Die Labororientierte Auswertung ist nach dem Laborcode sortiert.

The laboratory oriented report is sorted by laboratory code.

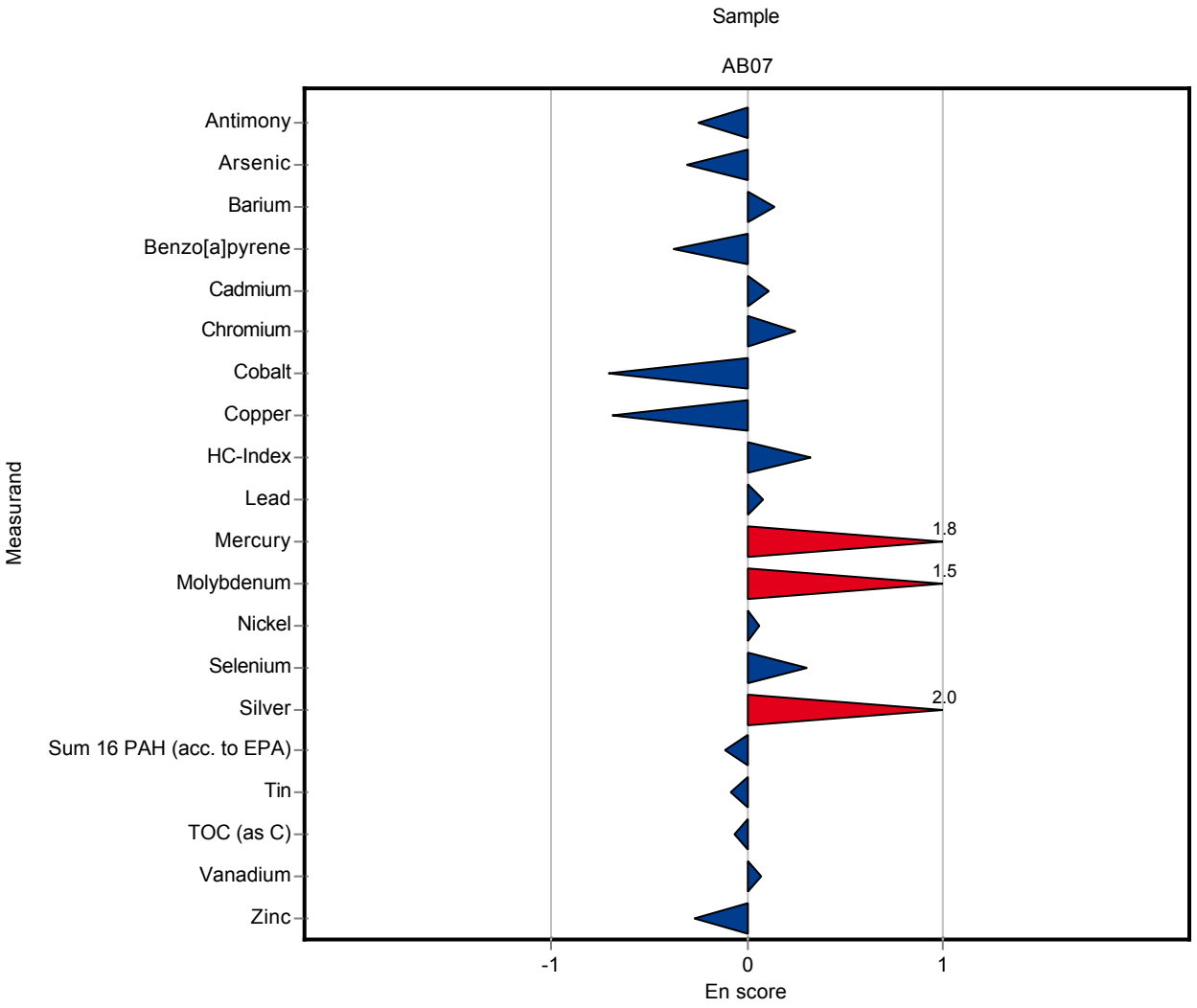
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.51 ± 0.39	0.803	93.9	-0.28
Arsenic	mg/kg DM	147 ± 3.34	139 ± 12.5	8.02	94.7	-0.97
Barium	mg/kg DM	732 ± 51.4	756 ± 82.4	176	103	0.13
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.06 ± 0.015	0.0244	83.3	-0.49
Cadmium	mg/kg DM	10.9 ± 0.473	11.2 ± 1.41	1.18	103	0.27
Chromium	mg/kg DM	324 ± 13.2	353 ± 59.7	36.6	109	0.80
Cobalt	mg/kg DM	297 ± 18.9	258 ± 25.5	40	87	-0.96
Copper	mg/kg DM	619 ± 18.8	544 ± 53.3	44.1	87.9	-1.69
HC-Index	mg/kg DM	437 ± 93.7	515 ± 109	215	118	0.36
Lead	mg/kg DM	93.8 ± 4	96.2 ± 14.2	11.7	103	0.20
Mercury	mg/kg DM	0.13 ± 0.0204	0.45 ± 0.09	0.0367	345	8.71
Molybdenum	mg/kg DM	3.89 ± 0.607	6.07 ± 0.67	1.16	156	1.88
Nickel	mg/kg DM	300 ± 15.8	306 ± 51.7	38.3	102	0.16
Selenium	mg/kg DM	2.38 ± 0.657	2.65 ± 0.3	1.19	111	0.23
Silver	mg/kg DM	13 ± 0.967	24 ± 2.71	2.05	184	5.34
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.69 ± 0.37	0.644	95	-0.14
Tin	mg/kg DM	36.2 ± 2.3	35.6 ± 3.52	4.99	98.4	-0.12
TOC (as C)	mg/kg DM	41100 ± 2100	40200 ± 6350	4810	97.9	-0.18
Vanadium	mg/kg DM	20.1 ± 2.56	20.5 ± 2.52	4.96	102	0.08
Zinc	mg/kg DM	2370 ± 117	2260 ± 203	300	95.3	-0.37


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
8.7
5.3
-2
0
2
z-score

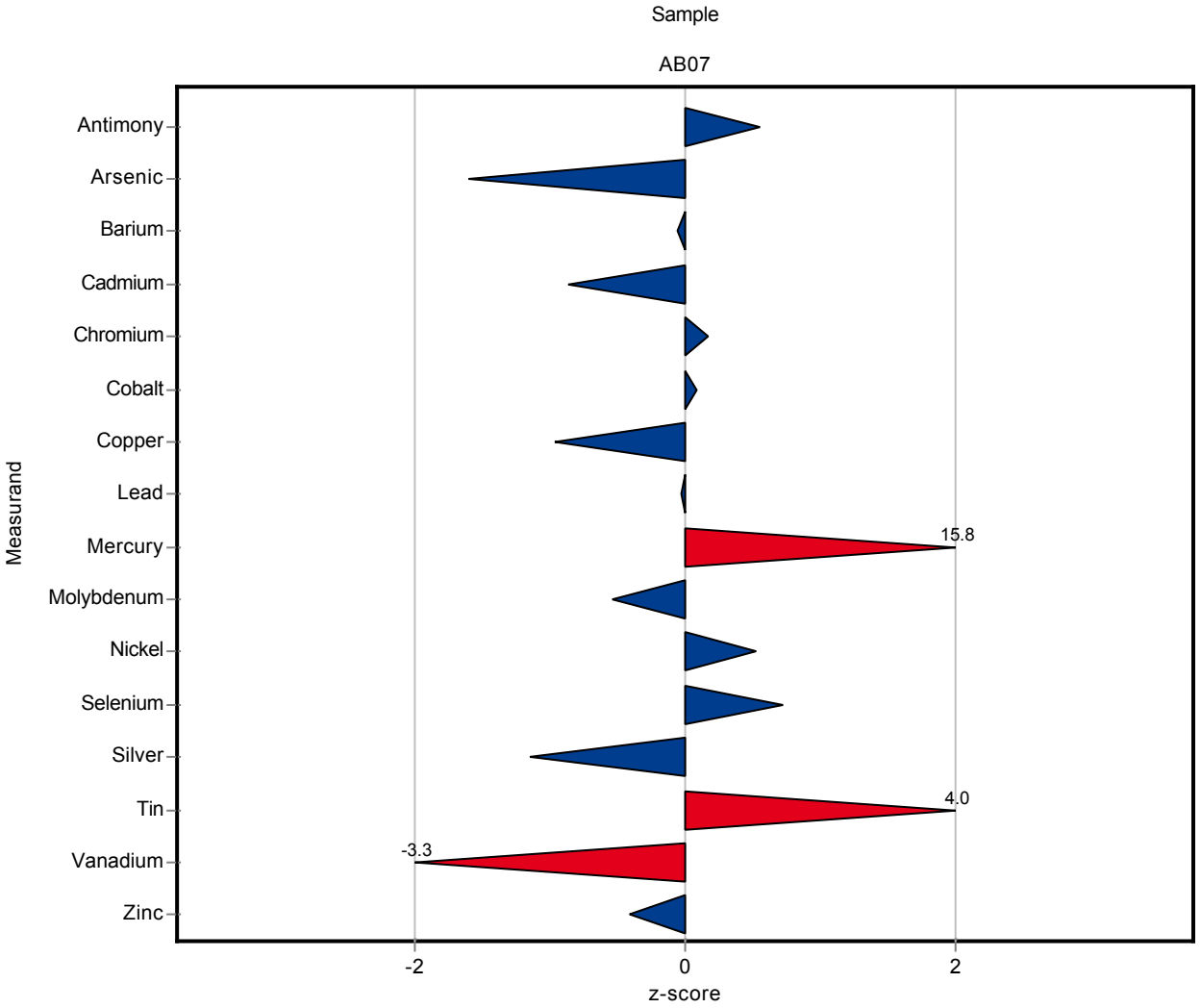
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.51 ± 0.39	0.803	93.9	-0.25
Arsenic	mg/kg DM	147 ± 3.34	139 ± 12.5	8.02	94.7	-0.31
Barium	mg/kg DM	732 ± 51.4	756 ± 82.4	176	103	0.14
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.06 ± 0.015	0.0244	83.3	-0.37
Cadmium	mg/kg DM	10.9 ± 0.473	11.2 ± 1.41	1.18	103	0.11
Chromium	mg/kg DM	324 ± 13.2	353 ± 59.7	36.6	109	0.24
Cobalt	mg/kg DM	297 ± 18.9	258 ± 25.5	40	87	-0.71
Copper	mg/kg DM	619 ± 18.8	544 ± 53.3	44.1	87.9	-0.69
HC-Index	mg/kg DM	437 ± 93.7	515 ± 109	215	118	0.33
Lead	mg/kg DM	93.8 ± 4	96.2 ± 14.2	11.7	103	0.08
Mercury	mg/kg DM	0.13 ± 0.0204	0.45 ± 0.09	0.0367	345	1.76
Molybdenum	mg/kg DM	3.89 ± 0.607	6.07 ± 0.67	1.16	156	1.48
Nickel	mg/kg DM	300 ± 15.8	306 ± 51.7	38.3	102	0.06
Selenium	mg/kg DM	2.38 ± 0.657	2.65 ± 0.3	1.19	111	0.31
Silver	mg/kg DM	13 ± 0.967	24 ± 2.71	2.05	184	1.99
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.69 ± 0.37	0.644	95	-0.11
Tin	mg/kg DM	36.2 ± 2.3	35.6 ± 3.52	4.99	98.4	-0.08
TOC (as C)	mg/kg DM	41100 ± 2100	40200 ± 6350	4810	97.9	-0.07
Vanadium	mg/kg DM	20.1 ± 2.56	20.5 ± 2.52	4.96	102	0.07
Zinc	mg/kg DM	2370 ± 117	2260 ± 203	300	95.3	-0.27


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
1.8
1.5
2.0
-1
0
1
En score

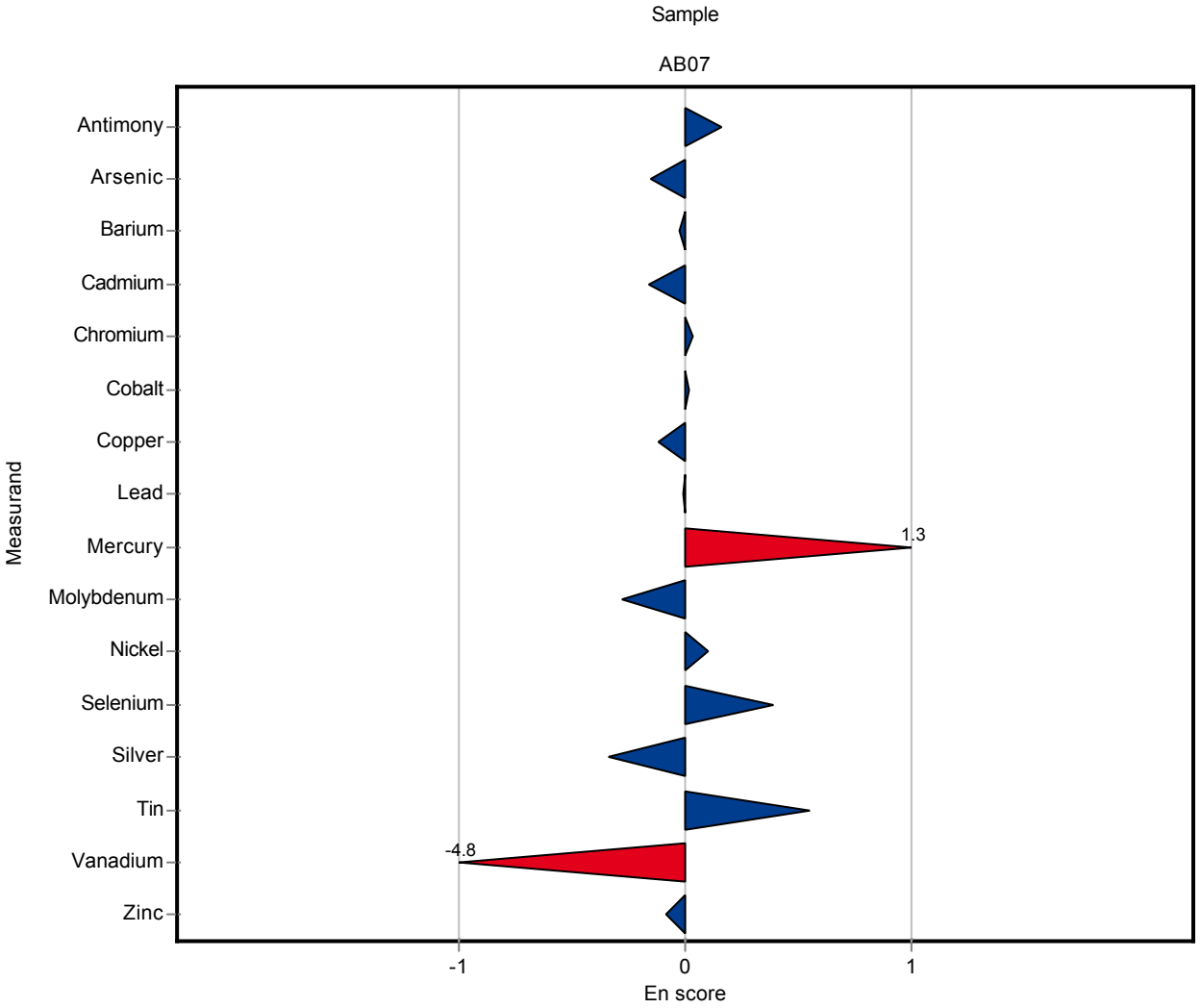
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.18 ± 1.34	0.803	112	0.55
Arsenic	mg/kg DM	147 ± 3.34	134 ± 42	8.02	91.3	-1.60
Barium	mg/kg DM	732 ± 51.4	722 ± 231	176	98.6	-0.06
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	9.86 ± 3.16	1.18	90.7	-0.86
Chromium	mg/kg DM	324 ± 13.2	330 ± 106	36.6	102	0.17
Cobalt	mg/kg DM	297 ± 18.9	300 ± 96	40	101	0.09
Copper	mg/kg DM	619 ± 18.8	576 ± 184	44.1	93.1	-0.97
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	93.4 ± 29.9	11.7	99.6	-0.03
Mercury	mg/kg DM	0.13 ± 0.0204	0.711 ± 0.228	0.0367	546	15.80
Molybdenum	mg/kg DM	3.89 ± 0.607	3.27 ± 1.05	1.16	84	-0.54
Nickel	mg/kg DM	300 ± 15.8	320 ± 102	38.3	107	0.53
Selenium	mg/kg DM	2.38 ± 0.657	3.23 ± 1.03	1.19	136	0.72
Silver	mg/kg DM	13 ± 0.967	10.7 ± 3.4	2.05	82	-1.14
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	56.1 ± 18	4.99	155	3.99
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	3.59 ± 1.15	4.96	17.8	-3.33
Zinc	mg/kg DM	2370 ± 117	2251 ± 720	300	94.9	-0.40


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Tin
Vanadium
Zinc
Measurand
15.8
4.0
-3.3
-2
0
2
z-score

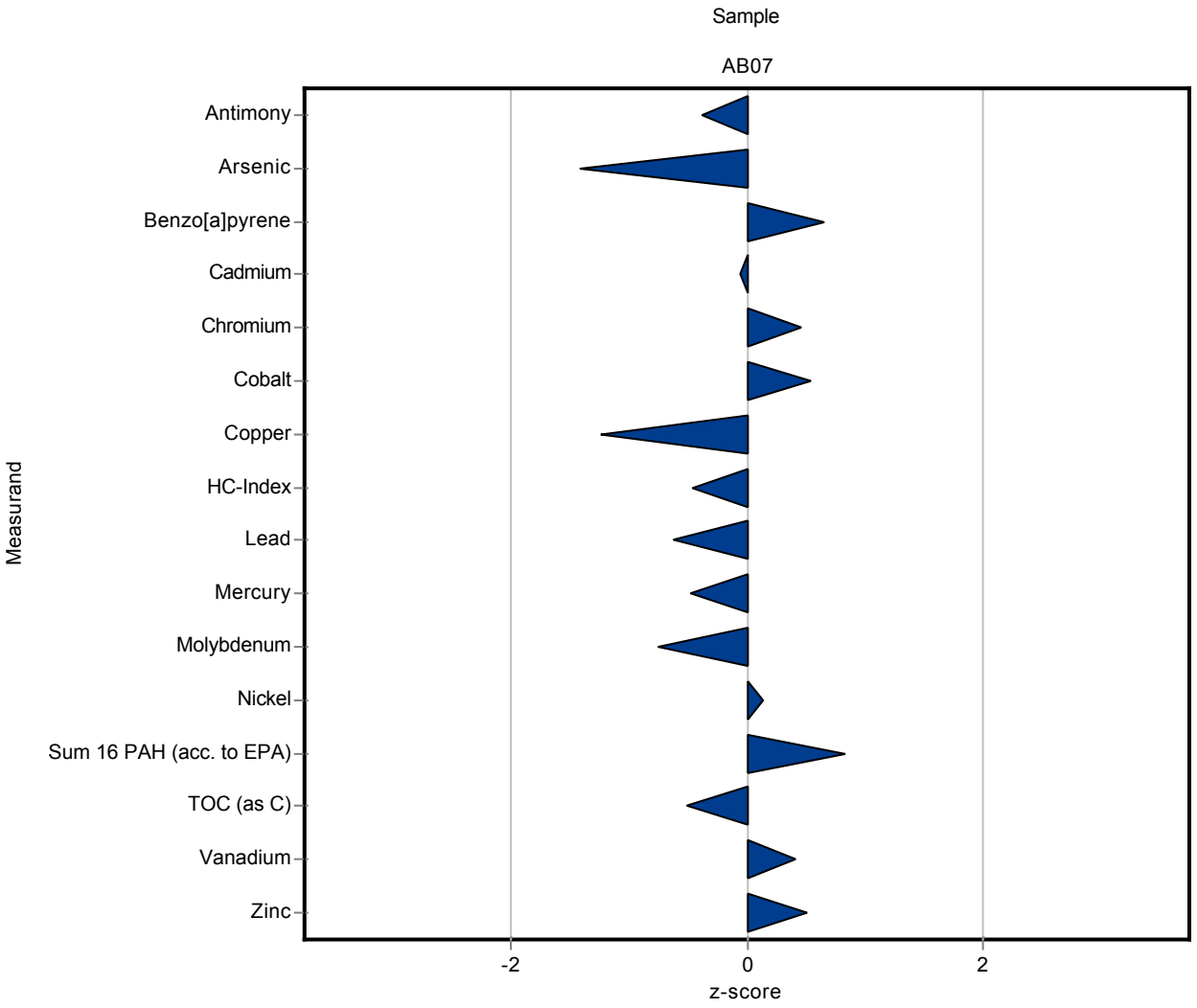
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.18 ± 1.34	0.803	112	0.16
Arsenic	mg/kg DM	147 ± 3.34	134 ± 42	8.02	91.3	-0.15
Barium	mg/kg DM	732 ± 51.4	722 ± 231	176	98.6	-0.02
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	9.86 ± 3.16	1.18	90.7	-0.16
Chromium	mg/kg DM	324 ± 13.2	330 ± 106	36.6	102	0.03
Cobalt	mg/kg DM	297 ± 18.9	300 ± 96	40	101	0.02
Copper	mg/kg DM	619 ± 18.8	576 ± 184	44.1	93.1	-0.12
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	93.4 ± 29.9	11.7	99.6	-0.01
Mercury	mg/kg DM	0.13 ± 0.0204	0.711 ± 0.228	0.0367	546	1.27
Molybdenum	mg/kg DM	3.89 ± 0.607	3.27 ± 1.05	1.16	84	-0.28
Nickel	mg/kg DM	300 ± 15.8	320 ± 102	38.3	107	0.10
Selenium	mg/kg DM	2.38 ± 0.657	3.23 ± 1.03	1.19	136	0.39
Silver	mg/kg DM	13 ± 0.967	10.7 ± 3.4	2.05	82	-0.34
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	56.1 ± 18	4.99	155	0.55
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	3.59 ± 1.15	4.96	17.8	-4.80
Zinc	mg/kg DM	2370 ± 117	2251 ± 720	300	94.9	-0.08


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Tin
Vanadium
Zinc
Measurand
1.3
-4.8
-1
0
1
En score

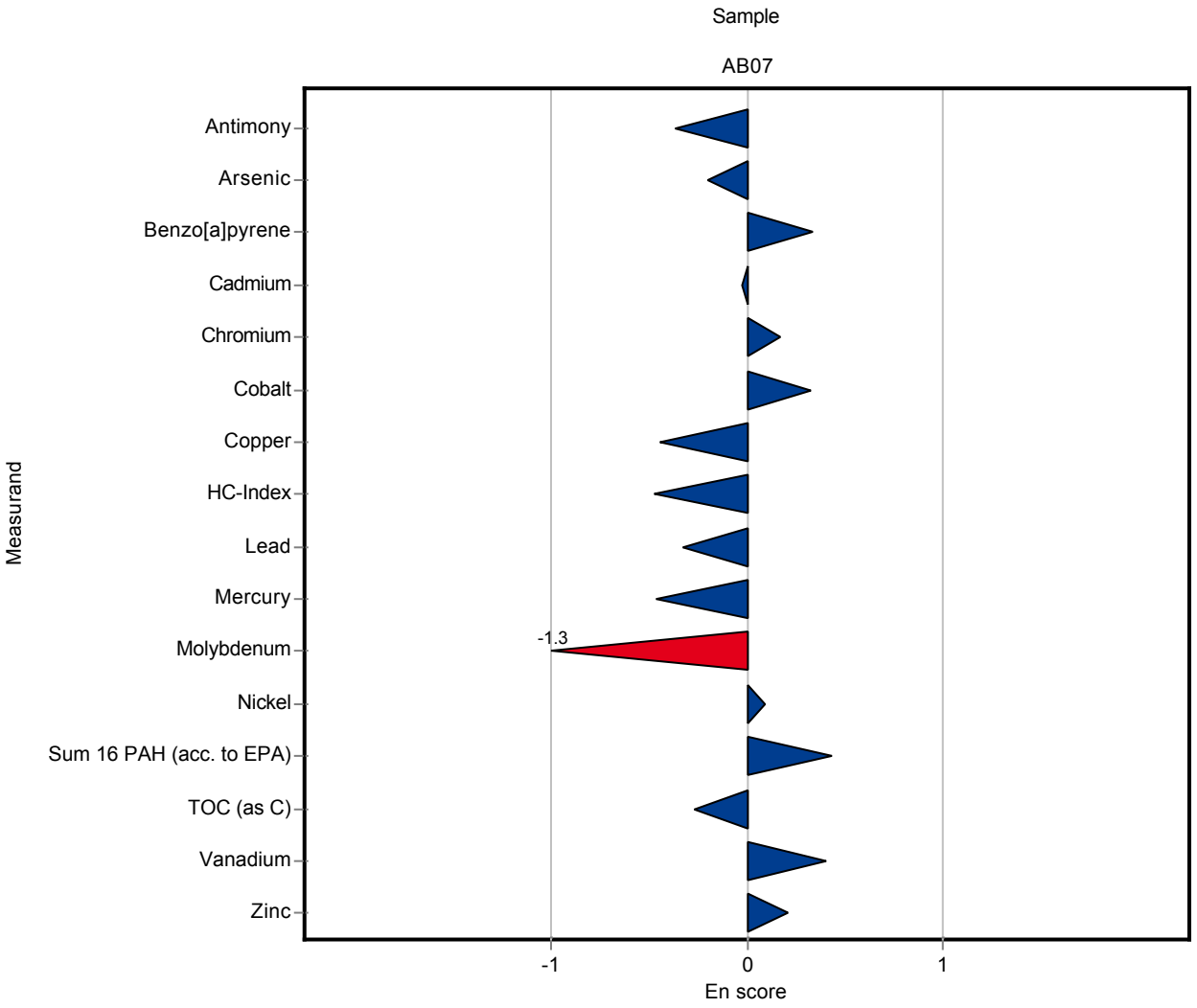
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.431 ± 0.343	0.803	91.8	-0.38
Arsenic	mg/kg DM	147 ± 3.34	135.5 ± 27.9	8.02	92.3	-1.41
Barium	mg/kg DM	732 ± 51.4	- ± -	176	-	-
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.088 ± 0.023	0.0244	122	0.65
Cadmium	mg/kg DM	10.9 ± 0.473	10.8 ± 1.3	1.18	99.3	-0.06
Chromium	mg/kg DM	324 ± 13.2	340.8 ± 49.7	36.6	105	0.47
Cobalt	mg/kg DM	297 ± 18.9	318.1 ± 31.8	40	107	0.54
Copper	mg/kg DM	619 ± 18.8	564 ± 60.9	44.1	91.2	-1.24
HC-Index	mg/kg DM	437 ± 93.7	340 ± 91	215	77.7	-0.45
Lead	mg/kg DM	93.8 ± 4	86.51 ± 11.1	11.7	92.2	-0.63
Mercury	mg/kg DM	0.13 ± 0.0204	0.1127 ± 0.016	0.0367	86.5	-0.48
Molybdenum	mg/kg DM	3.89 ± 0.607	3.021 ± 0.163	1.16	77.6	-0.75
Nickel	mg/kg DM	300 ± 15.8	304.8 ± 27.1	38.3	102	0.13
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	- ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.313 ± 0.592	0.644	130	0.83
Tin	mg/kg DM	36.2 ± 2.3	- ± -	4.99	-	-
TOC (as C)	mg/kg DM	41100 ± 2100	38600 ± 4516	4810	94	-0.51
Vanadium	mg/kg DM	20.1 ± 2.56	22.15 ± 2.21	4.96	110	0.41
Zinc	mg/kg DM	2370 ± 117	2524 ± 363	300	106	0.51


Sample
AB07
Measurand
Antimony
Arsenic
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Sum 16 PAH (acc. to EPA)
TOC (as C)
Vanadium
Zinc
-2
0
2
z-score

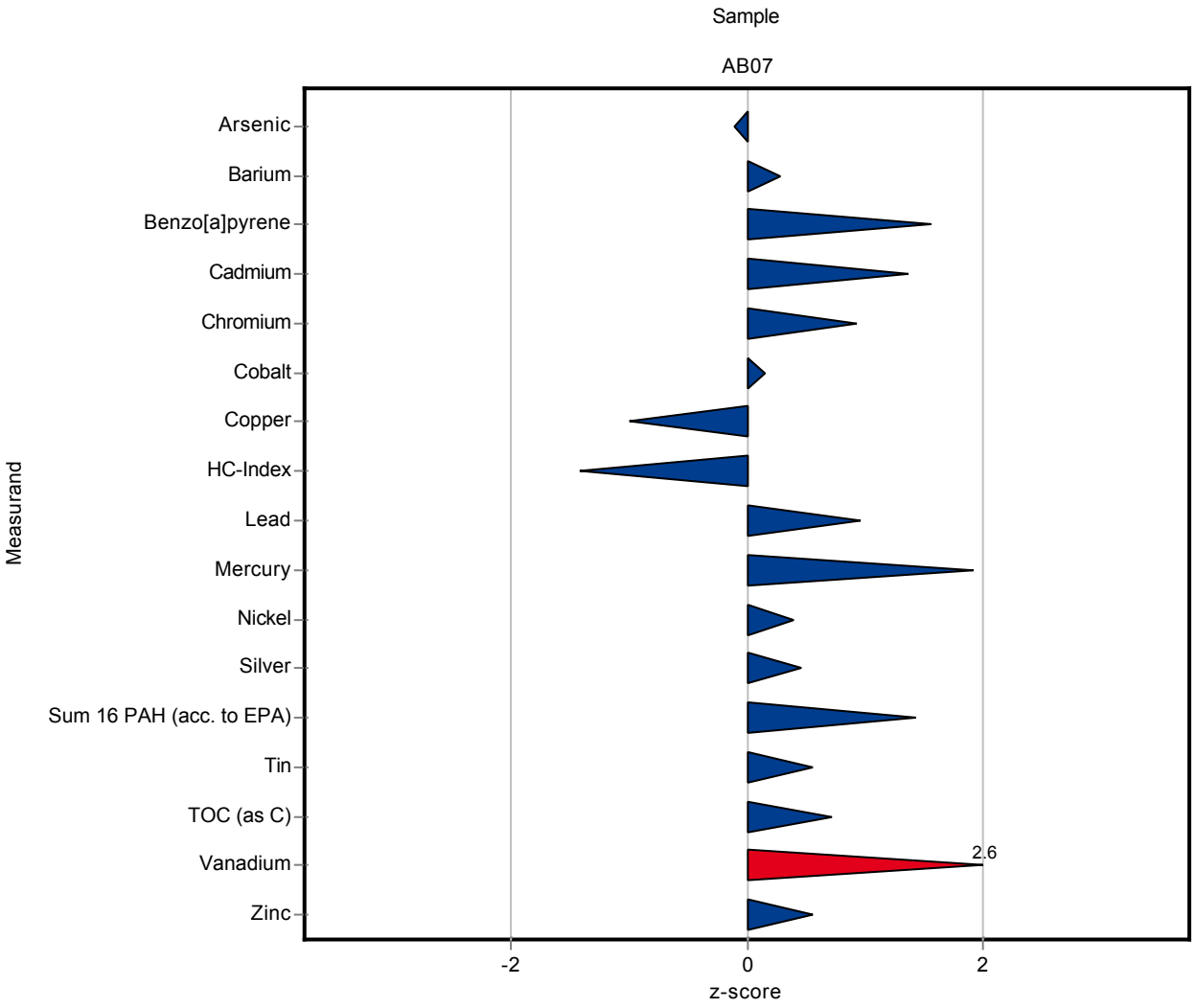
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.431 ± 0.343	0.803	91.8	-0.37
Arsenic	mg/kg DM	147 ± 3.34	135.5 ± 27.9	8.02	92.3	-0.20
Barium	mg/kg DM	732 ± 51.4	- ± -	176	-	-
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.088 ± 0.023	0.0244	122	0.34
Cadmium	mg/kg DM	10.9 ± 0.473	10.8 ± 1.3	1.18	99.3	-0.03
Chromium	mg/kg DM	324 ± 13.2	340.8 ± 49.7	36.6	105	0.17
Cobalt	mg/kg DM	297 ± 18.9	318.1 ± 31.8	40	107	0.33
Copper	mg/kg DM	619 ± 18.8	564 ± 60.9	44.1	91.2	-0.44
HC-Index	mg/kg DM	437 ± 93.7	340 ± 91	215	77.7	-0.48
Lead	mg/kg DM	93.8 ± 4	86.51 ± 11.1	11.7	92.2	-0.32
Mercury	mg/kg DM	0.13 ± 0.0204	0.1127 ± 0.016	0.0367	86.5	-0.46
Molybdenum	mg/kg DM	3.89 ± 0.607	3.021 ± 0.163	1.16	77.6	-1.26
Nickel	mg/kg DM	300 ± 15.8	304.8 ± 27.1	38.3	102	0.09
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	- ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.313 ± 0.592	0.644	130	0.44
Tin	mg/kg DM	36.2 ± 2.3	- ± -	4.99	-	-
TOC (as C)	mg/kg DM	41100 ± 2100	38600 ± 4516	4810	94	-0.27
Vanadium	mg/kg DM	20.1 ± 2.56	22.15 ± 2.21	4.96	110	0.40
Zinc	mg/kg DM	2370 ± 117	2524 ± 363	300	106	0.21


Sample
AB07
Measurand
Antimony
Arsenic
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Sum 16 PAH (acc. to EPA)
TOC (as C)
Vanadium
Zinc
-1.3
-1
0
1
En score

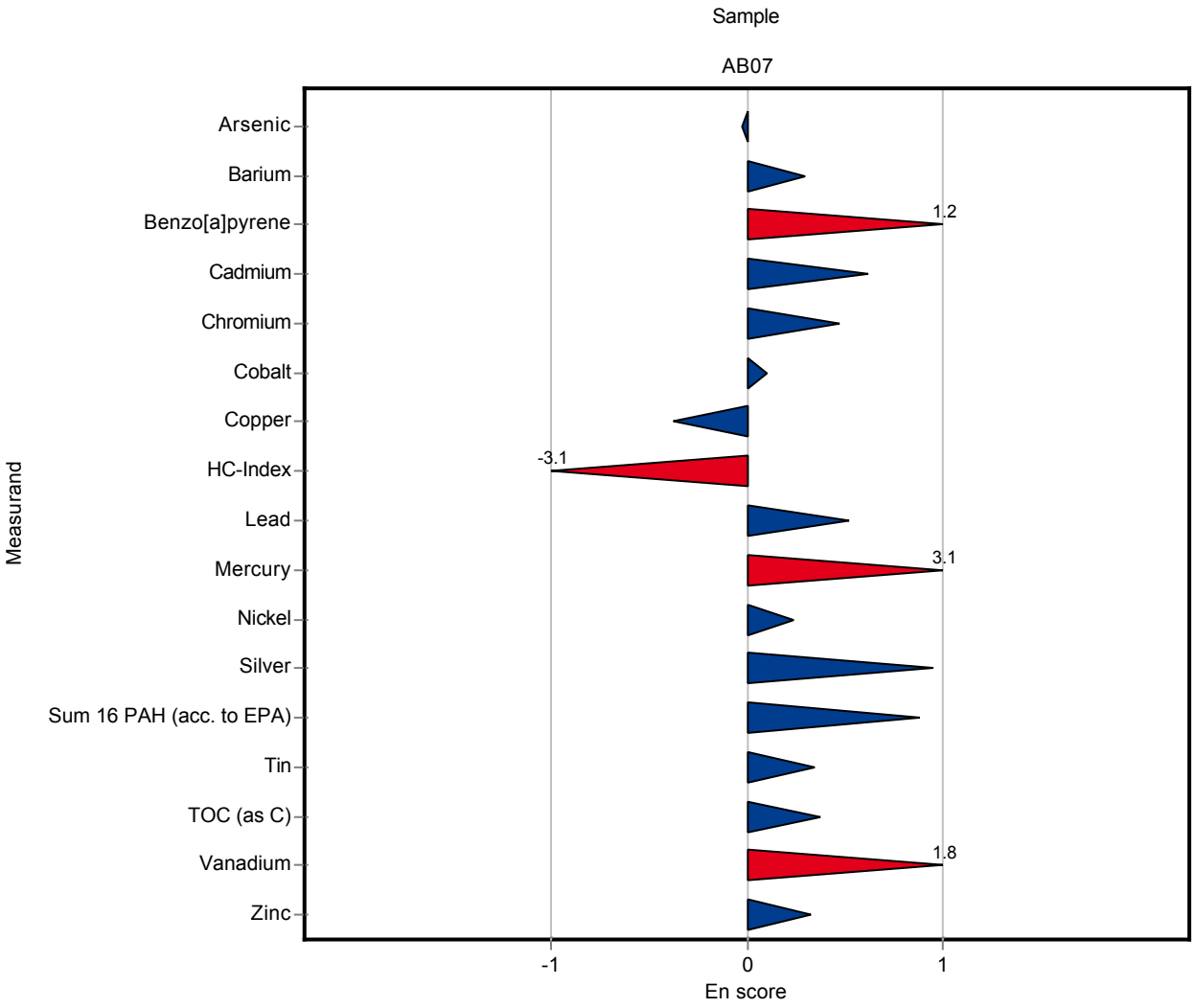
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<5 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	146 ± 14.6	8.02	99.4	-0.10
Barium	mg/kg DM	732 ± 51.4	782 ± 78.2	176	107	0.28
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.11 ± 0.015	0.0244	153	1.56
Cadmium	mg/kg DM	10.9 ± 0.473	12.5 ± 1.3	1.18	115	1.37
Chromium	mg/kg DM	324 ± 13.2	358 ± 35.8	36.6	111	0.94
Cobalt	mg/kg DM	297 ± 18.9	303 ± 30.3	40	102	0.16
Copper	mg/kg DM	619 ± 18.8	575 ± 57.5	44.1	93	-0.99
HC-Index	mg/kg DM	437 ± 93.7	134 ± 13.4	215	30.6	-1.41
Lead	mg/kg DM	93.8 ± 4	105 ± 10.5	11.7	112	0.96
Mercury	mg/kg DM	0.13 ± 0.0204	0.201 ± 0.005	0.0367	154	1.93
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	315 ± 31.5	38.3	105	0.40
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	14 ± 0.14	2.05	107	0.47
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.7 ± 0.5	0.644	152	1.43
Tin	mg/kg DM	36.2 ± 2.3	39 ± 3.9	4.99	108	0.57
TOC (as C)	mg/kg DM	41100 ± 2100	44500 ± 4450	4810	108	0.71
Vanadium	mg/kg DM	20.1 ± 2.56	33 ± 3.3	4.96	164	2.60
Zinc	mg/kg DM	2370 ± 117	2540 ± 254	300	107	0.56


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
2.6
-2
0
2
z-score

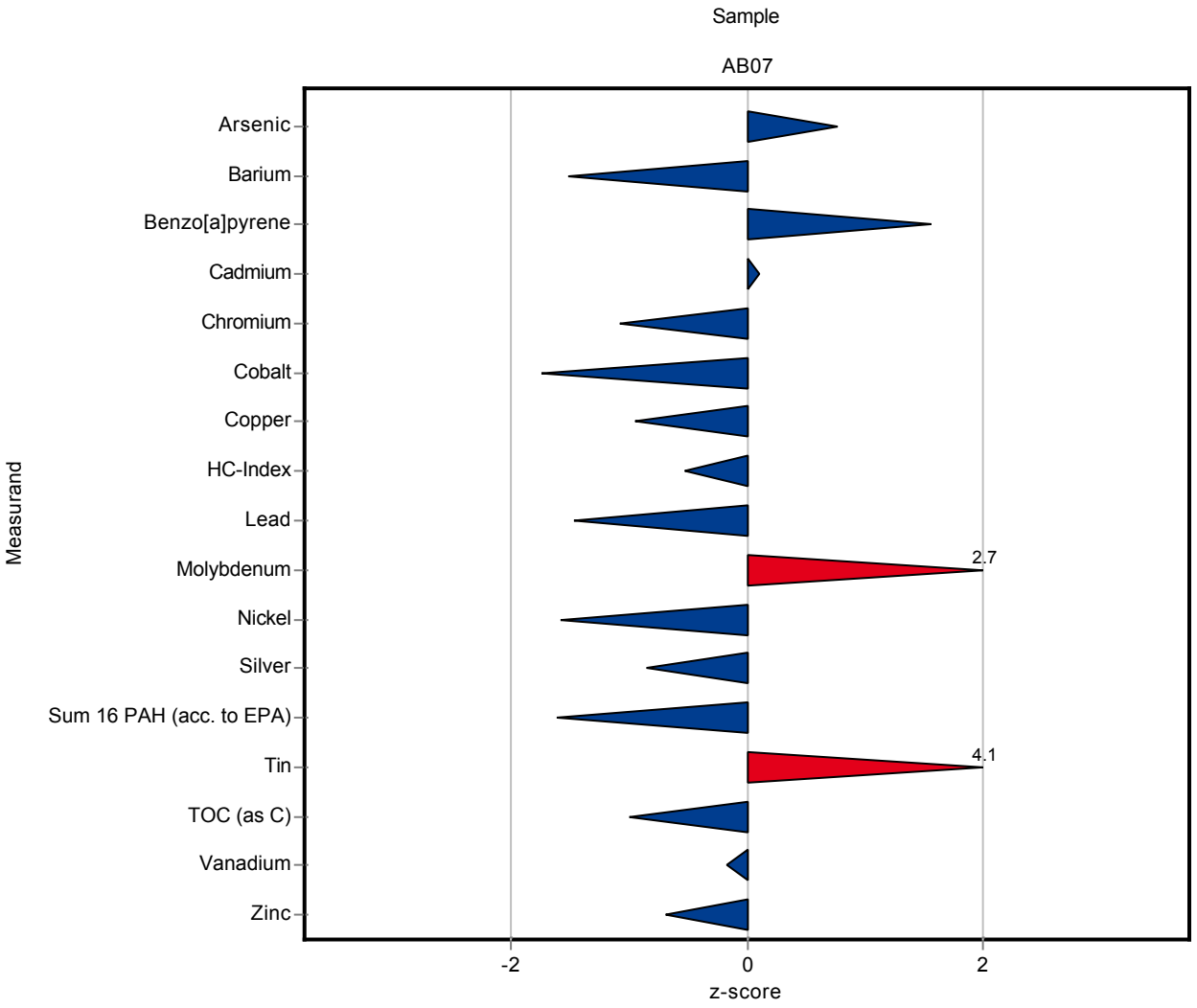
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<5 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	146 ± 14.6	8.02	99.4	-0.03
Barium	mg/kg DM	732 ± 51.4	782 ± 78.2	176	107	0.30
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.11 ± 0.015	0.0244	153	1.18
Cadmium	mg/kg DM	10.9 ± 0.473	12.5 ± 1.3	1.18	115	0.61
Chromium	mg/kg DM	324 ± 13.2	358 ± 35.8	36.6	111	0.47
Cobalt	mg/kg DM	297 ± 18.9	303 ± 30.3	40	102	0.10
Copper	mg/kg DM	619 ± 18.8	575 ± 57.5	44.1	93	-0.37
HC-Index	mg/kg DM	437 ± 93.7	134 ± 13.4	215	30.6	-3.11
Lead	mg/kg DM	93.8 ± 4	105 ± 10.5	11.7	112	0.52
Mercury	mg/kg DM	0.13 ± 0.0204	0.201 ± 0.005	0.0367	154	3.12
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	315 ± 31.5	38.3	105	0.23
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	14 ± 0.14	2.05	107	0.95
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.7 ± 0.5	0.644	152	0.88
Tin	mg/kg DM	36.2 ± 2.3	39 ± 3.9	4.99	108	0.35
TOC (as C)	mg/kg DM	41100 ± 2100	44500 ± 4450	4810	108	0.38
Vanadium	mg/kg DM	20.1 ± 2.56	33 ± 3.3	4.96	164	1.82
Zinc	mg/kg DM	2370 ± 117	2540 ± 254	300	107	0.32


Sample
AB07
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
1.2
-3.1
3.1
1.8
-1
0
1
En score

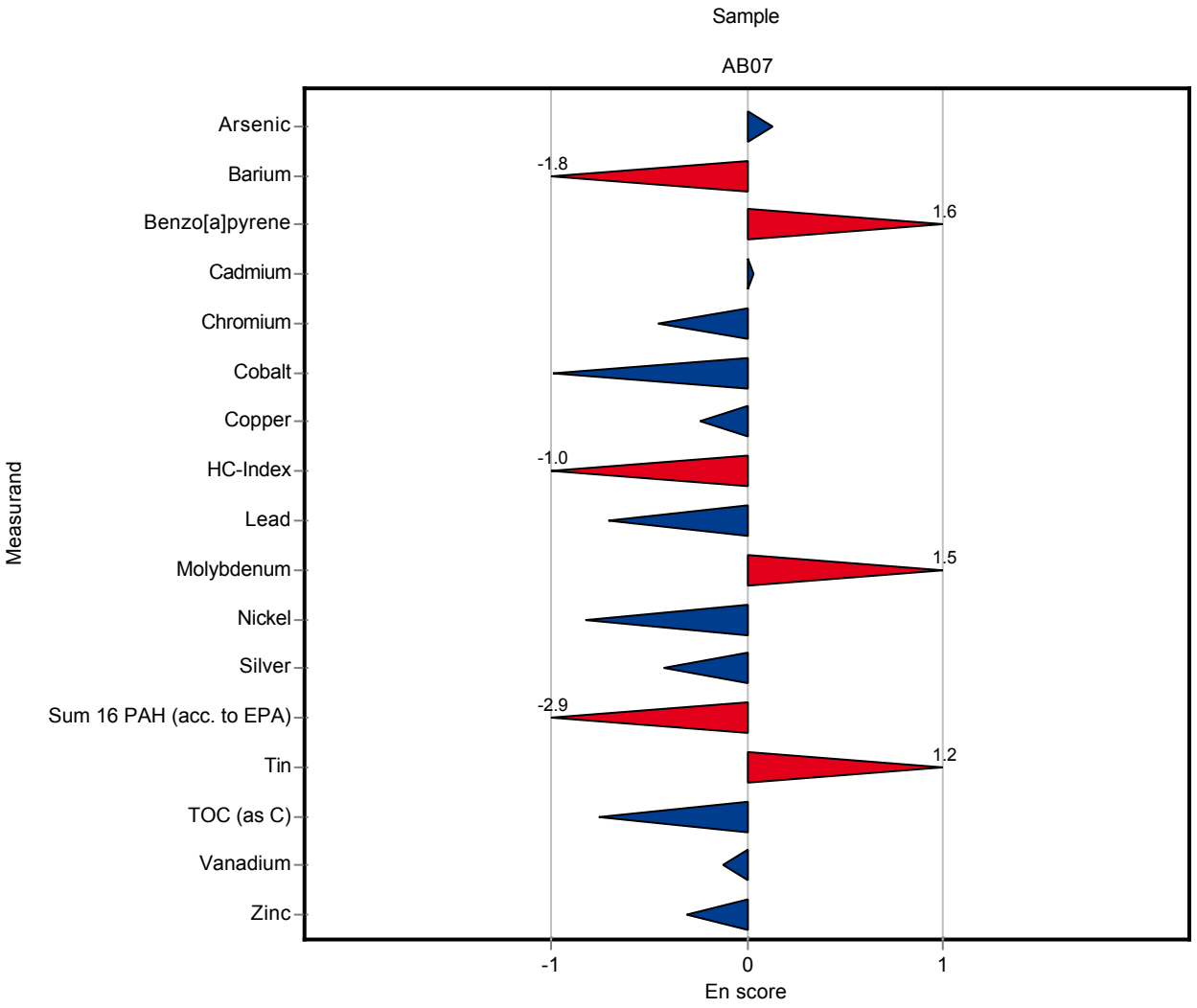
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<3 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	153 ± 23	8.02	104	0.77
Barium	mg/kg DM	732 ± 51.4	467 ± 70	176	63.8	-1.51
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.11 ± 0.01	0.0244	153	1.56
Cadmium	mg/kg DM	10.9 ± 0.473	11 ± 2	1.18	101	0.10
Chromium	mg/kg DM	324 ± 13.2	284 ± 43	36.6	87.7	-1.08
Cobalt	mg/kg DM	297 ± 18.9	227 ± 34	40	76.6	-1.74
Copper	mg/kg DM	619 ± 18.8	577 ± 87	44.1	93.3	-0.94
HC-Index	mg/kg DM	437 ± 93.7	324 ± 30	215	74.1	-0.53
Lead	mg/kg DM	93.8 ± 4	76.7 ± 12	11.7	81.8	-1.46
Mercury	mg/kg DM	0.13 ± 0.0204	<1 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	7 ± 1	1.16	180	2.68
Nickel	mg/kg DM	300 ± 15.8	239 ± 36	38.3	79.7	-1.59
Selenium	mg/kg DM	2.38 ± 0.657	<3 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	11.3 ± 2	2.05	86.6	-0.85
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	0.74 ± 0.1	0.644	41.6	-1.61
Tin	mg/kg DM	36.2 ± 2.3	56.7 ± 8.5	4.99	157	4.11
TOC (as C)	mg/kg DM	41100 ± 2100	36295 ± 3000	4810	88.4	-0.99
Vanadium	mg/kg DM	20.1 ± 2.56	19.3 ± 3	4.96	96	-0.16
Zinc	mg/kg DM	2370 ± 117	2167 ± 325	300	91.3	-0.68


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
2.7
4.1
-2
0
2
z-score

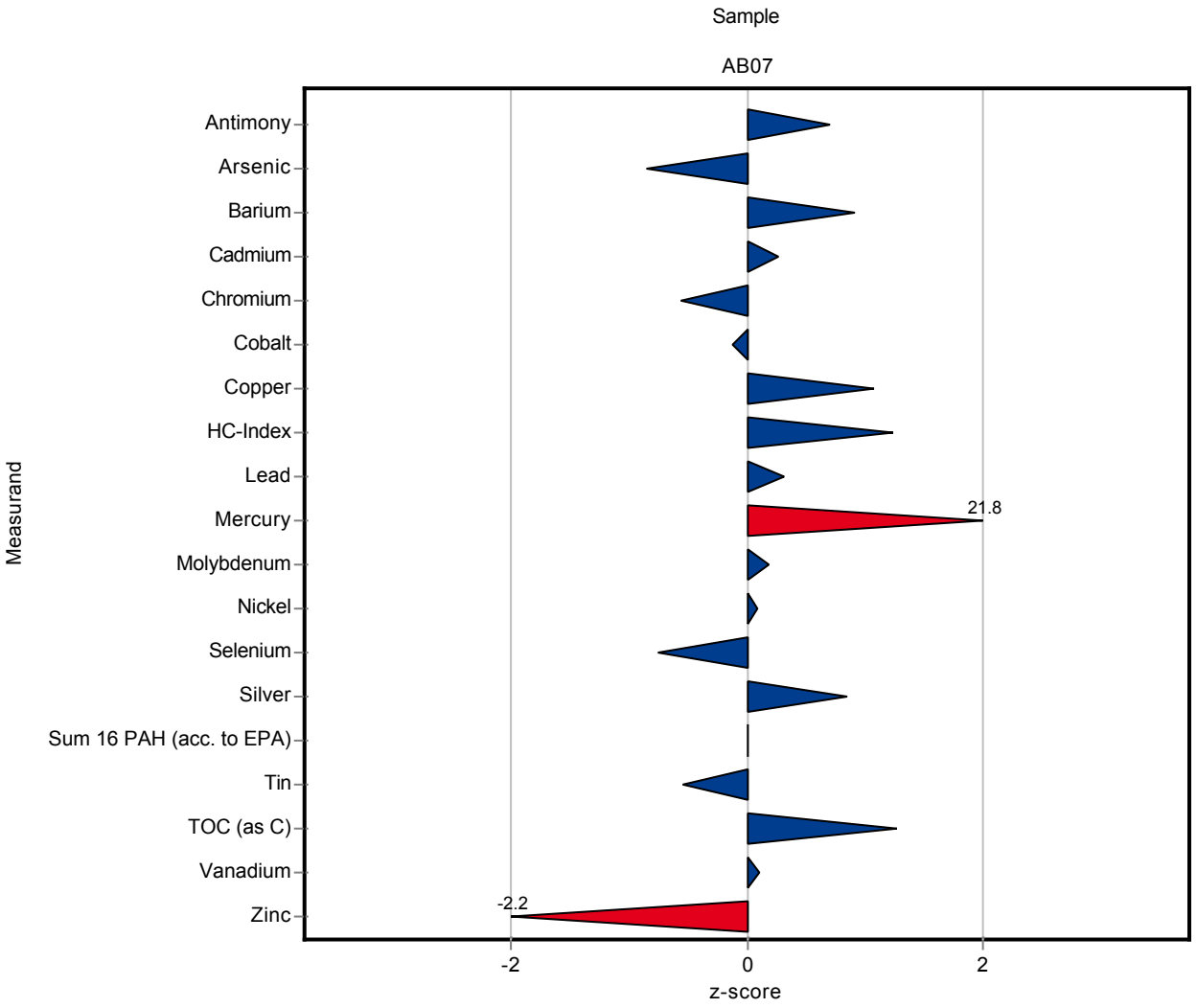
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<3 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	153 ± 23	8.02	104	0.13
Barium	mg/kg DM	732 ± 51.4	467 ± 70	176	63.8	-1.78
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.11 ± 0.01	0.0244	153	1.63
Cadmium	mg/kg DM	10.9 ± 0.473	11 ± 2	1.18	101	0.03
Chromium	mg/kg DM	324 ± 13.2	284 ± 43	36.6	87.7	-0.46
Cobalt	mg/kg DM	297 ± 18.9	227 ± 34	40	76.6	-0.98
Copper	mg/kg DM	619 ± 18.8	577 ± 87	44.1	93.3	-0.24
HC-Index	mg/kg DM	437 ± 93.7	324 ± 30	215	74.1	-1.02
Lead	mg/kg DM	93.8 ± 4	76.7 ± 12	11.7	81.8	-0.70
Mercury	mg/kg DM	0.13 ± 0.0204	<1 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	7 ± 1	1.16	180	1.49
Nickel	mg/kg DM	300 ± 15.8	239 ± 36	38.3	79.7	-0.82
Selenium	mg/kg DM	2.38 ± 0.657	<3 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	11.3 ± 2	2.05	86.6	-0.42
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	0.74 ± 0.1	0.644	41.6	-2.91
Tin	mg/kg DM	36.2 ± 2.3	56.7 ± 8.5	4.99	157	1.20
TOC (as C)	mg/kg DM	41100 ± 2100	36295 ± 3000	4810	88.4	-0.75
Vanadium	mg/kg DM	20.1 ± 2.56	19.3 ± 3	4.96	96	-0.12
Zinc	mg/kg DM	2370 ± 117	2167 ± 325	300	91.3	-0.31


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-1.8
1.6
-1.0
1.5
-2.9
1.2
-1
0
1
En score

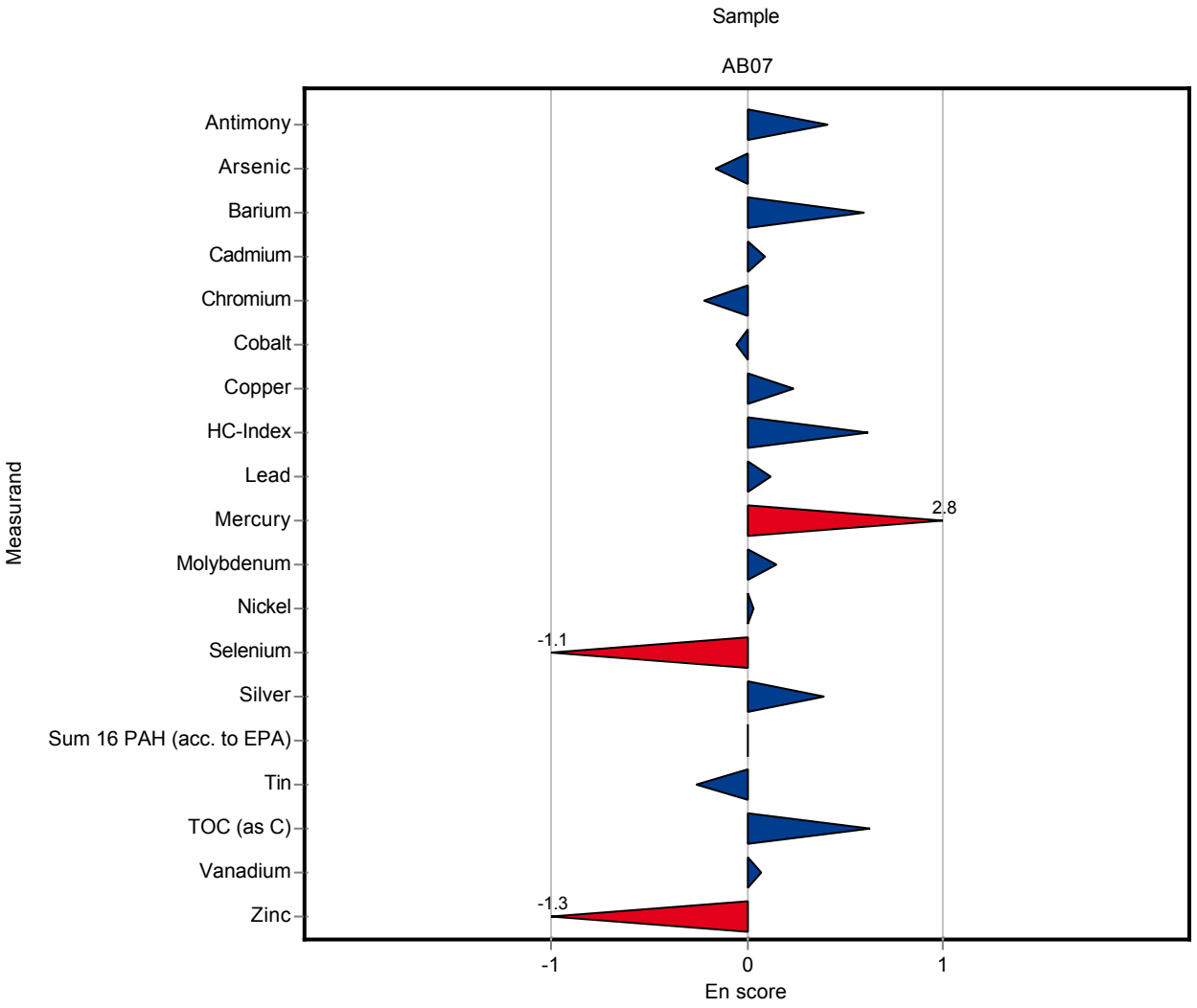
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.3 ± 0.64	0.803	115	0.70
Arsenic	mg/kg DM	147 ± 3.34	140 ± 21	8.02	95.4	-0.85
Barium	mg/kg DM	732 ± 51.4	895 ± 134	176	122	0.92
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	<0.05 (LOQ) ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.2 ± 1.7	1.18	103	0.27
Chromium	mg/kg DM	324 ± 13.2	303 ± 46	36.6	93.6	-0.56
Cobalt	mg/kg DM	297 ± 18.9	292 ± 44	40	98.5	-0.11
Copper	mg/kg DM	619 ± 18.8	666 ± 100	44.1	108	1.08
HC-Index	mg/kg DM	437 ± 93.7	705 ± 212	215	161	1.25
Lead	mg/kg DM	93.8 ± 4	97.4 ± 14.6	11.7	104	0.31
Mercury	mg/kg DM	0.13 ± 0.0204	0.93 ± 0.14	0.0367	714	21.80
Molybdenum	mg/kg DM	3.89 ± 0.607	4.1 ± 0.62	1.16	105	0.18
Nickel	mg/kg DM	300 ± 15.8	303 ± 46	38.3	101	0.09
Selenium	mg/kg DM	2.38 ± 0.657	1.49 ± 0.22	1.19	62.7	-0.75
Silver	mg/kg DM	13 ± 0.967	14.8 ± 2.2	2.05	113	0.86
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.784 ± 0.178	0.644	100	0.01
Tin	mg/kg DM	36.2 ± 2.3	33.5 ± 5	4.99	92.6	-0.54
TOC (as C)	mg/kg DM	41100 ± 2100	47153 ± 4715	4810	115	1.26
Vanadium	mg/kg DM	20.1 ± 2.56	20.6 ± 3.1	4.96	102	0.10
Zinc	mg/kg DM	2370 ± 117	1713 ± 257	300	72.2	-2.19


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
21.8
-2.2
-2
0
2
z-score

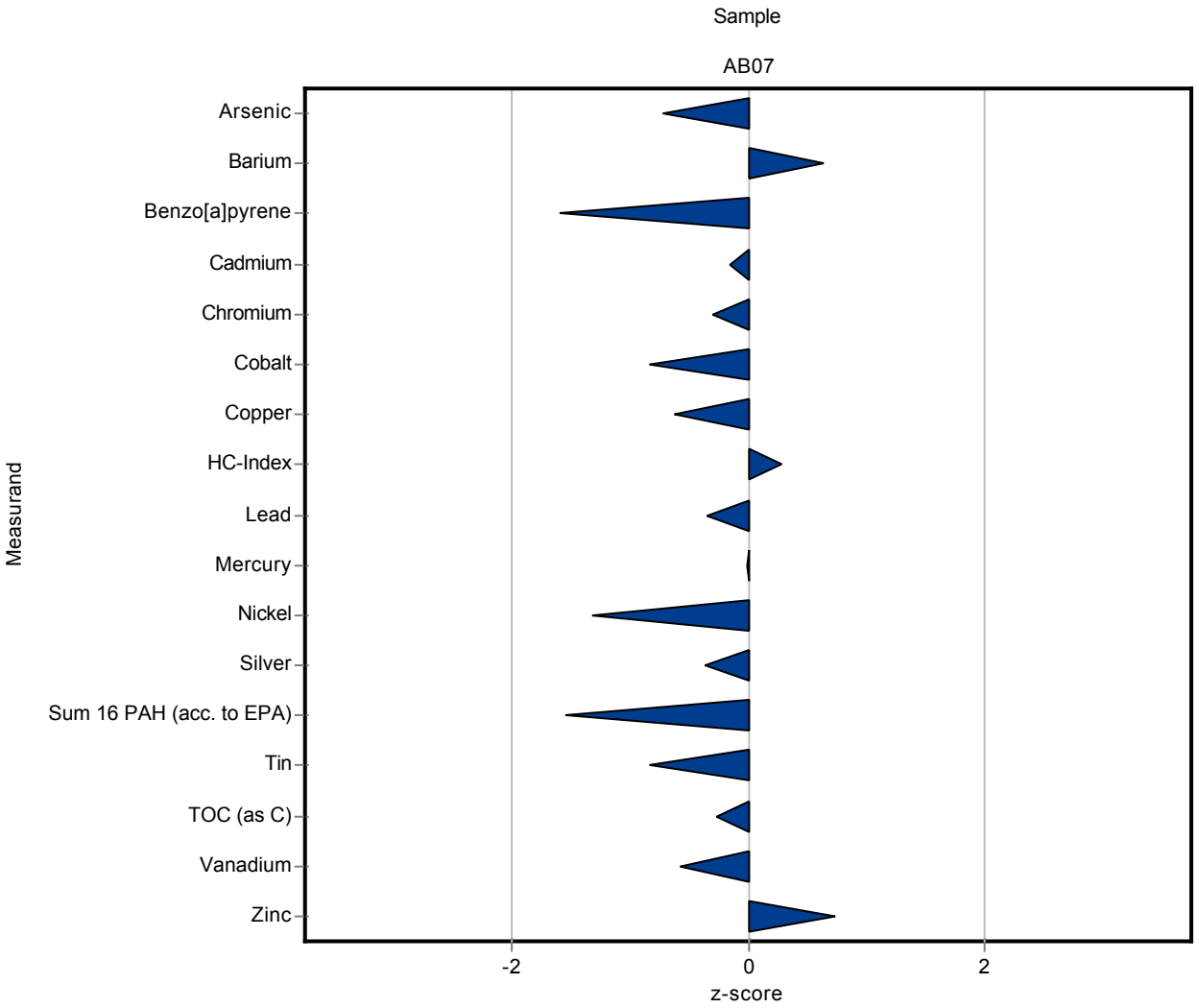
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.3 ± 0.64	0.803	115	0.41
Arsenic	mg/kg DM	147 ± 3.34	140 ± 21	8.02	95.4	-0.16
Barium	mg/kg DM	732 ± 51.4	895 ± 134	176	122	0.60
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	<0.05 (LOQ) ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.2 ± 1.7	1.18	103	0.09
Chromium	mg/kg DM	324 ± 13.2	303 ± 46	36.6	93.6	-0.22
Cobalt	mg/kg DM	297 ± 18.9	292 ± 44	40	98.5	-0.05
Copper	mg/kg DM	619 ± 18.8	666 ± 100	44.1	108	0.24
HC-Index	mg/kg DM	437 ± 93.7	705 ± 212	215	161	0.62
Lead	mg/kg DM	93.8 ± 4	97.4 ± 14.6	11.7	104	0.12
Mercury	mg/kg DM	0.13 ± 0.0204	0.93 ± 0.14	0.0367	714	2.85
Molybdenum	mg/kg DM	3.89 ± 0.607	4.1 ± 0.62	1.16	105	0.15
Nickel	mg/kg DM	300 ± 15.8	303 ± 46	38.3	101	0.04
Selenium	mg/kg DM	2.38 ± 0.657	1.49 ± 0.22	1.19	62.7	-1.12
Silver	mg/kg DM	13 ± 0.967	14.8 ± 2.2	2.05	113	0.39
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.784 ± 0.178	0.644	100	0.01
Tin	mg/kg DM	36.2 ± 2.3	33.5 ± 5	4.99	92.6	-0.26
TOC (as C)	mg/kg DM	41100 ± 2100	47153 ± 4715	4810	115	0.63
Vanadium	mg/kg DM	20.1 ± 2.56	20.6 ± 3.1	4.96	102	0.07
Zinc	mg/kg DM	2370 ± 117	1713 ± 257	300	72.2	-1.25


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
2.8
-1.1
-1.3
-1
0
1
En score

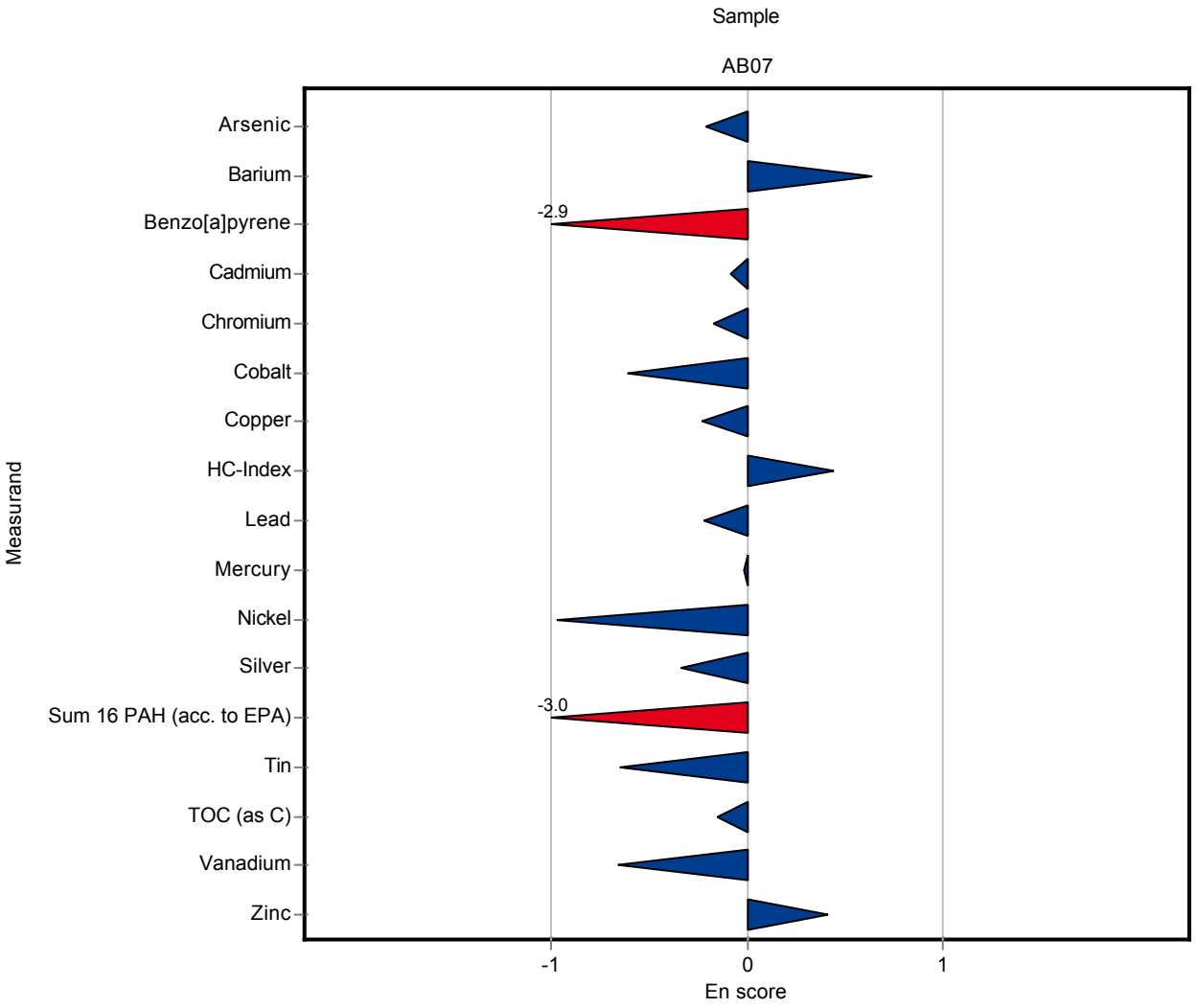
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<5 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	141 ± 14	8.02	96	-0.73
Barium	mg/kg DM	732 ± 51.4	844 ± 84	176	115	0.63
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.033 ± 0.003	0.0244	45.8	-1.60
Cadmium	mg/kg DM	10.9 ± 0.473	10.7 ± 1	1.18	98.4	-0.15
Chromium	mg/kg DM	324 ± 13.2	313 ± 31	36.6	96.7	-0.29
Cobalt	mg/kg DM	297 ± 18.9	263 ± 26	40	88.7	-0.84
Copper	mg/kg DM	619 ± 18.8	591 ± 60	44.1	95.5	-0.63
HC-Index	mg/kg DM	437 ± 93.7	498 ± 50	215	114	0.28
Lead	mg/kg DM	93.8 ± 4	89.7 ± 9	11.7	95.6	-0.35
Mercury	mg/kg DM	0.13 ± 0.0204	0.13 ± 0.01	0.0367	99.8	-0.01
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	249 ± 25	38.3	83.1	-1.33
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	12.3 ± 1	2.05	94.3	-0.36
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	0.78 ± 0.08	0.644	43.8	-1.55
Tin	mg/kg DM	36.2 ± 2.3	32 ± 3	4.99	88.5	-0.84
TOC (as C)	mg/kg DM	41100 ± 2100	39800 ± 4000	4810	96.9	-0.26
Vanadium	mg/kg DM	20.1 ± 2.56	17.3 ± 1.7	4.96	86	-0.57
Zinc	mg/kg DM	2370 ± 117	2595 ± 260	300	109	0.74


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-2
0
2
z-score

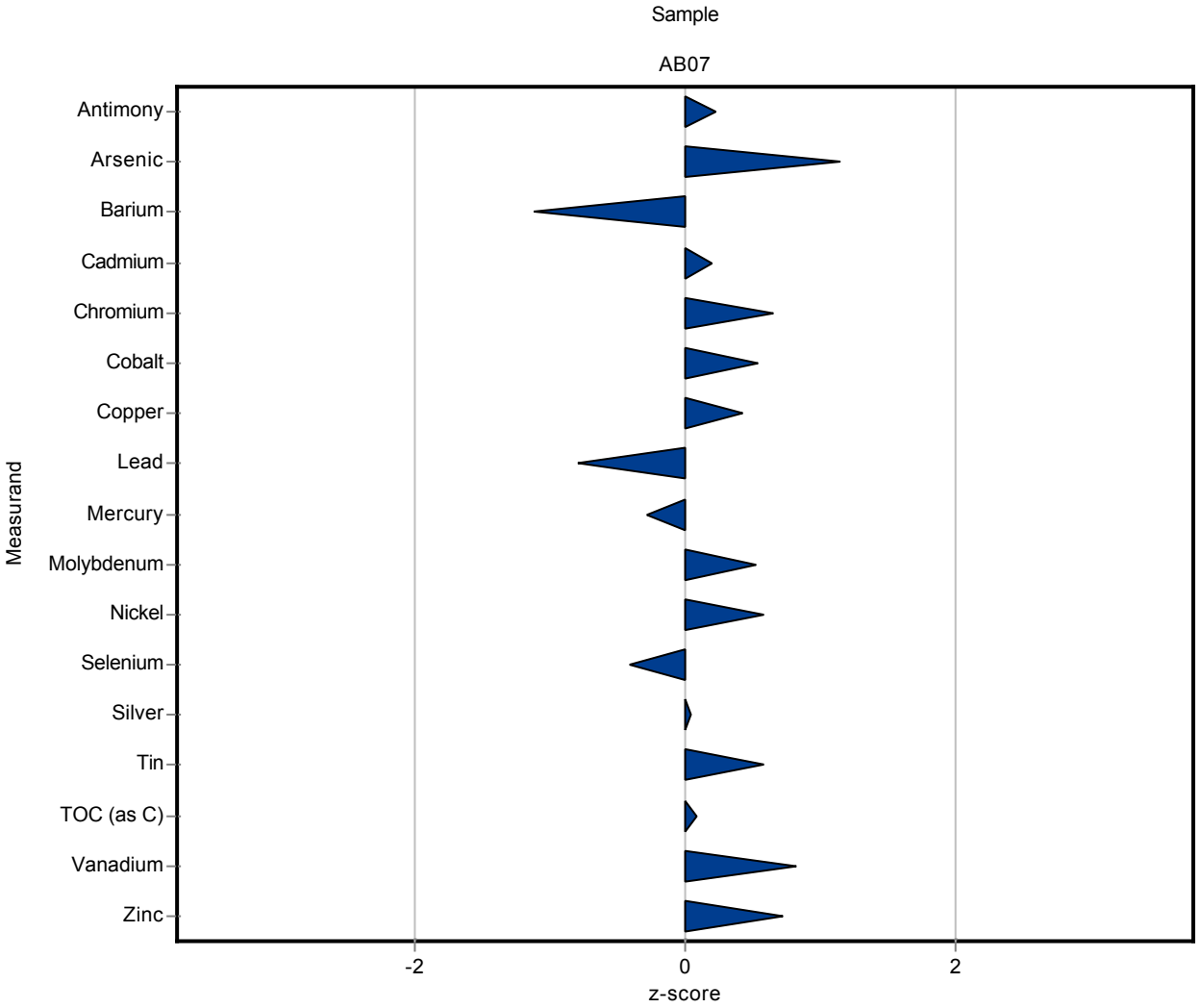
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<5 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	141 ± 14	8.02	96	-0.21
Barium	mg/kg DM	732 ± 51.4	844 ± 84	176	115	0.64
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.033 ± 0.003	0.0244	45.8	-2.94
Cadmium	mg/kg DM	10.9 ± 0.473	10.7 ± 1	1.18	98.4	-0.09
Chromium	mg/kg DM	324 ± 13.2	313 ± 31	36.6	96.7	-0.17
Cobalt	mg/kg DM	297 ± 18.9	263 ± 26	40	88.7	-0.61
Copper	mg/kg DM	619 ± 18.8	591 ± 60	44.1	95.5	-0.23
HC-Index	mg/kg DM	437 ± 93.7	498 ± 50	215	114	0.44
Lead	mg/kg DM	93.8 ± 4	89.7 ± 9	11.7	95.6	-0.22
Mercury	mg/kg DM	0.13 ± 0.0204	0.13 ± 0.01	0.0367	99.8	-0.01
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	249 ± 25	38.3	83.1	-0.97
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	12.3 ± 1	2.05	94.3	-0.33
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	0.78 ± 0.08	0.644	43.8	-2.98
Tin	mg/kg DM	36.2 ± 2.3	32 ± 3	4.99	88.5	-0.65
TOC (as C)	mg/kg DM	41100 ± 2100	39800 ± 4000	4810	96.9	-0.15
Vanadium	mg/kg DM	20.1 ± 2.56	17.3 ± 1.7	4.96	86	-0.66
Zinc	mg/kg DM	2370 ± 117	2595 ± 260	300	109	0.42


Sample
AB07
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-2.9
-3.0
-1
0
1
En score

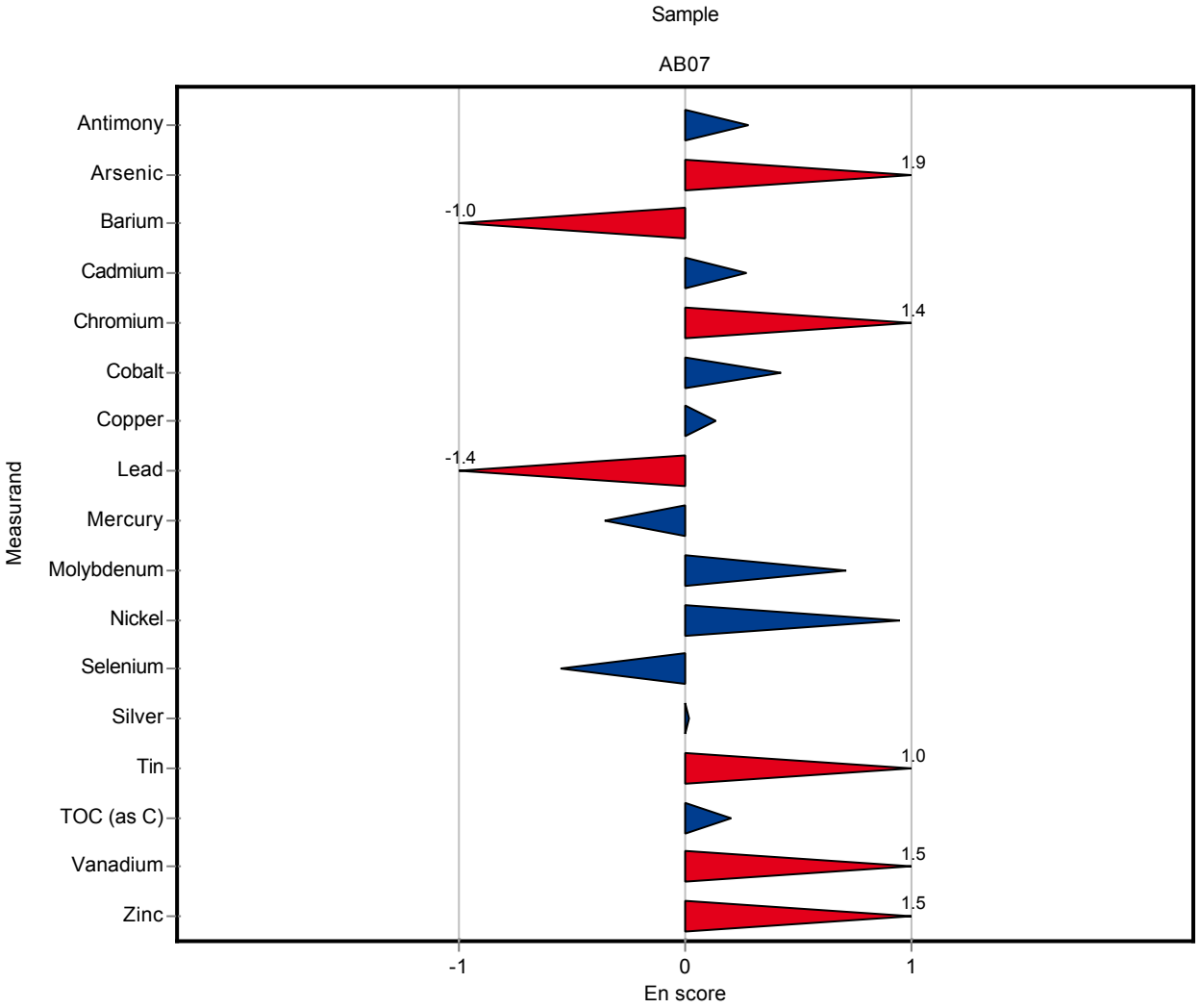
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.917 ± 0.219	0.803	105	0.22
Arsenic	mg/kg DM	147 ± 3.34	156 ± 1.69	8.02	106	1.15
Barium	mg/kg DM	732 ± 51.4	534.5 ± 91.42	176	73	-1.12
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.108 ± 0.35	1.18	102	0.20
Chromium	mg/kg DM	324 ± 13.2	347.75 ± 5.35	36.6	107	0.66
Cobalt	mg/kg DM	297 ± 18.9	318.17 ± 23.9	40	107	0.54
Copper	mg/kg DM	619 ± 18.8	637 ± 68.73	44.1	103	0.42
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	84.583 ± 2.65	11.7	90.2	-0.79
Mercury	mg/kg DM	0.13 ± 0.0204	0.12 ± 0.01	0.0367	92.1	-0.28
Molybdenum	mg/kg DM	3.89 ± 0.607	4.492 ± 0.295	1.16	115	0.52
Nickel	mg/kg DM	300 ± 15.8	322 ± 8.61	38.3	107	0.58
Selenium	mg/kg DM	2.38 ± 0.657	1.883 ± 0.307	1.19	79.2	-0.42
Silver	mg/kg DM	13 ± 0.967	13.125 ± 2.171	2.05	101	0.04
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	39.092 ± 0.856	4.99	108	0.58
TOC (as C)	mg/kg DM	41100 ± 2100	41500 ± 120	4810	101	0.09
Vanadium	mg/kg DM	20.1 ± 2.56	24.167 ± 0.294	4.96	120	0.82
Zinc	mg/kg DM	2370 ± 117	2589.42 ± 46.21	300	109	0.72


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-2
0
2
z-score

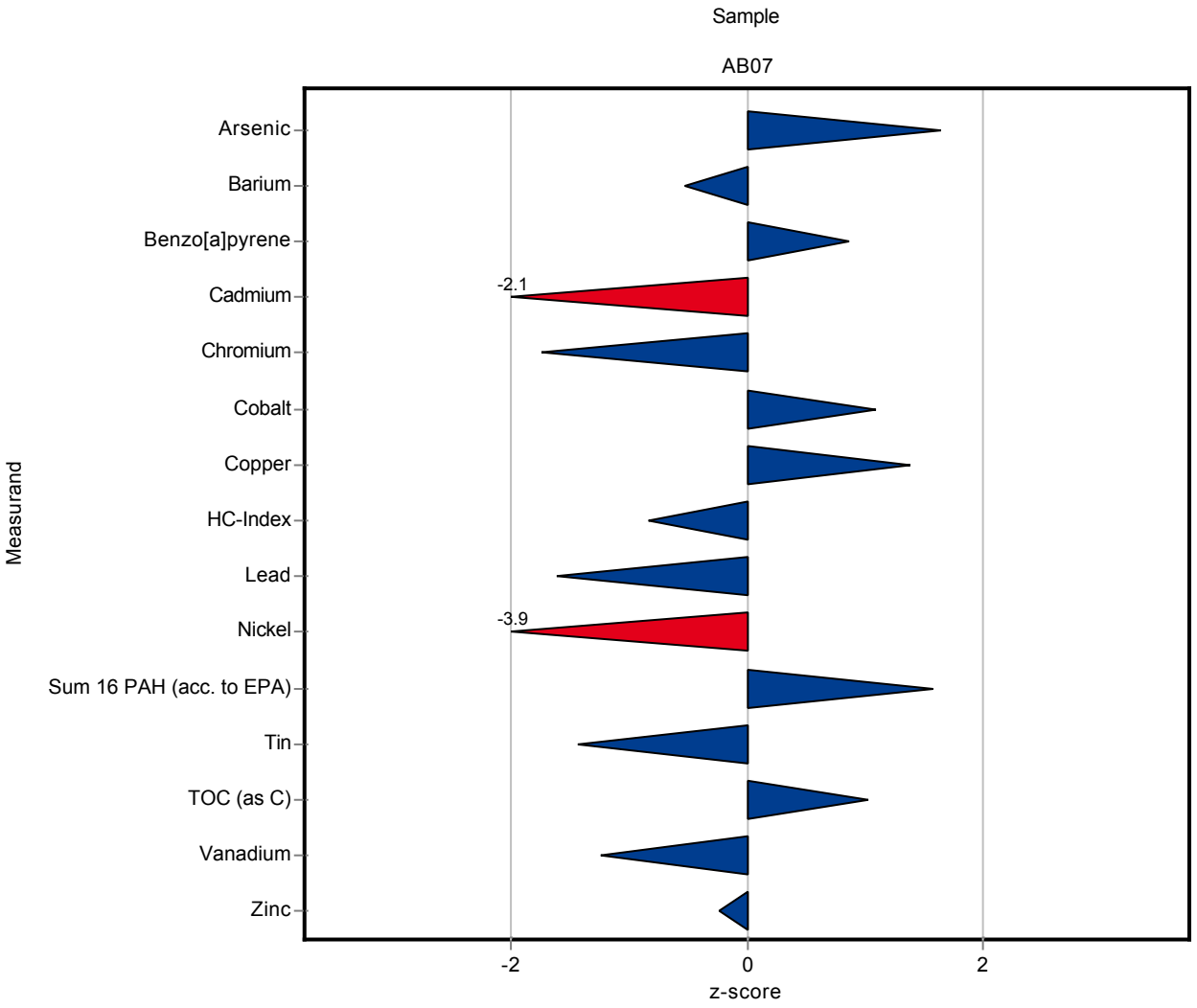
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.917 ± 0.219	0.803	105	0.28
Arsenic	mg/kg DM	147 ± 3.34	156 ± 1.69	8.02	106	1.93
Barium	mg/kg DM	732 ± 51.4	534.5 ± 91.42	176	73	-1.04
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.108 ± 0.35	1.18	102	0.28
Chromium	mg/kg DM	324 ± 13.2	347.75 ± 5.35	36.6	107	1.41
Cobalt	mg/kg DM	297 ± 18.9	318.17 ± 23.9	40	107	0.42
Copper	mg/kg DM	619 ± 18.8	637 ± 68.73	44.1	103	0.13
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	84.583 ± 2.65	11.7	90.2	-1.39
Mercury	mg/kg DM	0.13 ± 0.0204	0.12 ± 0.01	0.0367	92.1	-0.36
Molybdenum	mg/kg DM	3.89 ± 0.607	4.492 ± 0.295	1.16	115	0.71
Nickel	mg/kg DM	300 ± 15.8	322 ± 8.61	38.3	107	0.95
Selenium	mg/kg DM	2.38 ± 0.657	1.883 ± 0.307	1.19	79.2	-0.55
Silver	mg/kg DM	13 ± 0.967	13.125 ± 2.171	2.05	101	0.02
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	39.092 ± 0.856	4.99	108	1.02
TOC (as C)	mg/kg DM	41100 ± 2100	41500 ± 120	4810	101	0.20
Vanadium	mg/kg DM	20.1 ± 2.56	24.167 ± 0.294	4.96	120	1.54
Zinc	mg/kg DM	2370 ± 117	2589.42 ± 46.21	300	109	1.46


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Tin
TOC (as C)
Vanadium
Zinc
Measurand
1.9
-1.0
1.4
-1.4
1.0
1.5
1.5
-1
0
1
En score

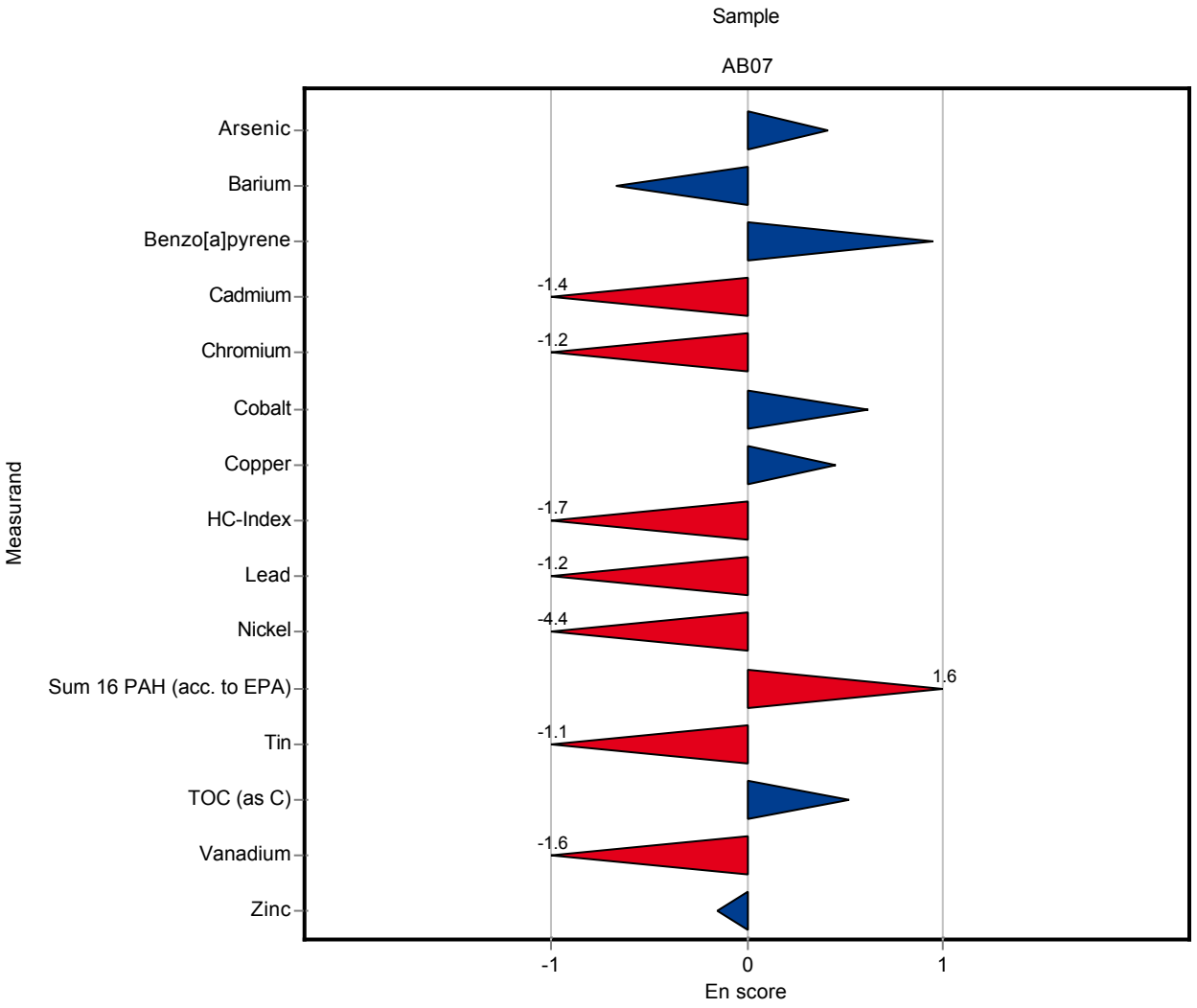
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<10 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	160 ± 16	8.02	109	1.64
Barium	mg/kg DM	732 ± 51.4	640 ± 64	176	87.4	-0.53
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.093 ± 0.0093	0.0244	129	0.86
Cadmium	mg/kg DM	10.9 ± 0.473	8.4 ± 0.84	1.18	77.2	-2.09
Chromium	mg/kg DM	324 ± 13.2	260 ± 26	36.6	80.3	-1.74
Cobalt	mg/kg DM	297 ± 18.9	340 ± 34	40	115	1.09
Copper	mg/kg DM	619 ± 18.8	680 ± 68	44.1	110	1.39
HC-Index	mg/kg DM	437 ± 93.7	260 ± 26	215	59.4	-0.83
Lead	mg/kg DM	93.8 ± 4	75 ± 7.5	11.7	80	-1.61
Mercury	mg/kg DM	0.13 ± 0.0204	<0.1 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<10 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	150 ± 15	38.3	50	-3.91
Selenium	mg/kg DM	2.38 ± 0.657	<10 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	<20 (LOQ) ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.8 ± 0.28	0.644	157	1.58
Tin	mg/kg DM	36.2 ± 2.3	29 ± 2.9	4.99	80.2	-1.44
TOC (as C)	mg/kg DM	41100 ± 2100	46000 ± 4600	4810	112	1.03
Vanadium	mg/kg DM	20.1 ± 2.56	14 ± 1.4	4.96	69.6	-1.23
Zinc	mg/kg DM	2370 ± 117	2300 ± 230	300	97	-0.24


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Nickel
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-2.1
-3.9
-2
0
2
z-score

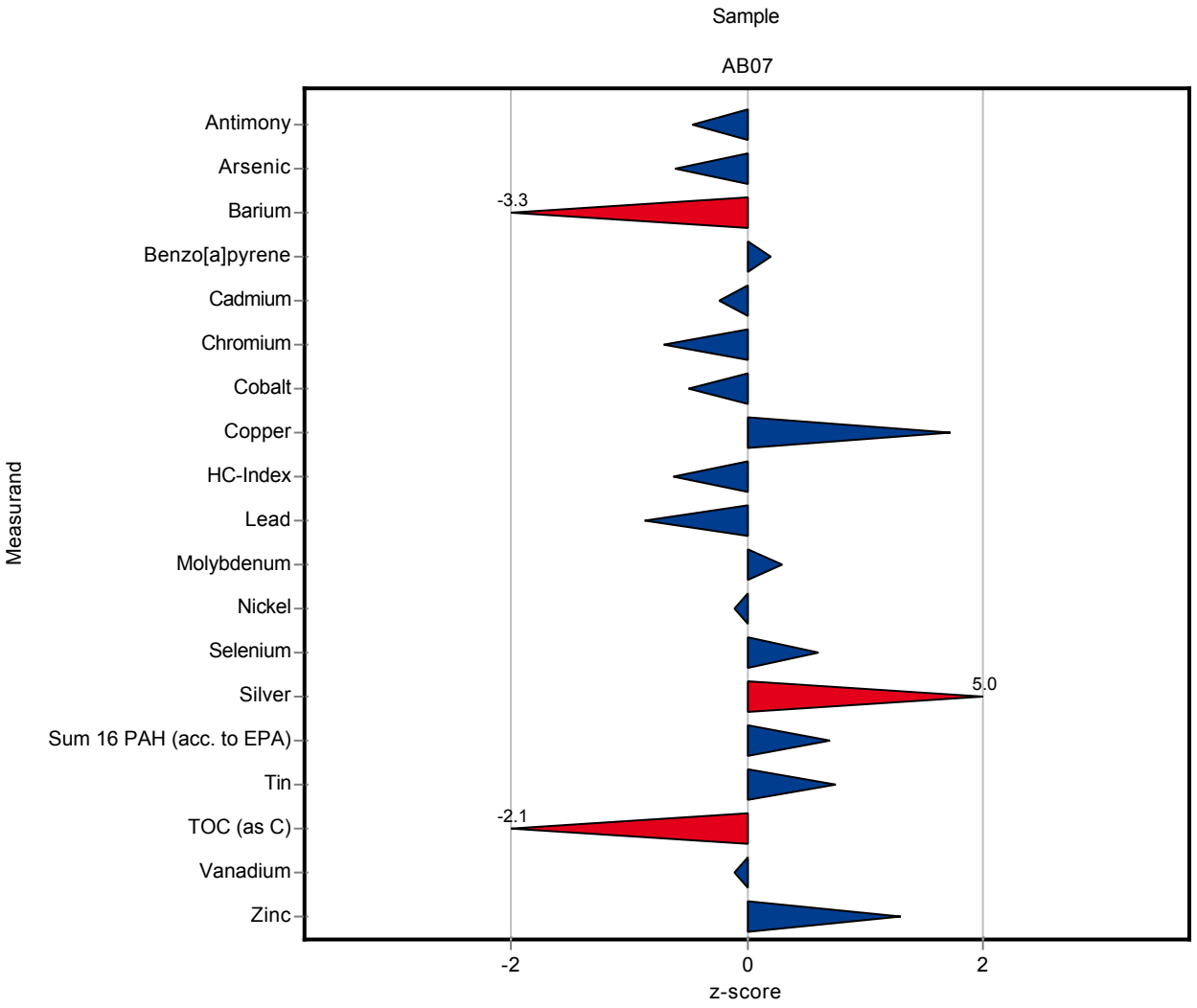
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<10 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	160 ± 16	8.02	109	0.41
Barium	mg/kg DM	732 ± 51.4	640 ± 64	176	87.4	-0.67
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.093 ± 0.0093	0.0244	129	0.95
Cadmium	mg/kg DM	10.9 ± 0.473	8.4 ± 0.84	1.18	77.2	-1.42
Chromium	mg/kg DM	324 ± 13.2	260 ± 26	36.6	80.3	-1.19
Cobalt	mg/kg DM	297 ± 18.9	340 ± 34	40	115	0.62
Copper	mg/kg DM	619 ± 18.8	680 ± 68	44.1	110	0.45
HC-Index	mg/kg DM	437 ± 93.7	260 ± 26	215	59.4	-1.66
Lead	mg/kg DM	93.8 ± 4	75 ± 7.5	11.7	80	-1.21
Mercury	mg/kg DM	0.13 ± 0.0204	<0.1 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<10 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	150 ± 15	38.3	50	-4.42
Selenium	mg/kg DM	2.38 ± 0.657	<10 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	<20 (LOQ) ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.8 ± 0.28	0.644	157	1.61
Tin	mg/kg DM	36.2 ± 2.3	29 ± 2.9	4.99	80.2	-1.15
TOC (as C)	mg/kg DM	41100 ± 2100	46000 ± 4600	4810	112	0.52
Vanadium	mg/kg DM	20.1 ± 2.56	14 ± 1.4	4.96	69.6	-1.61
Zinc	mg/kg DM	2370 ± 117	2300 ± 230	300	97	-0.15


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Nickel
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-1.4
-1.2
-1.7
-1.2
-4.4
1.6
-1.1
-1.6
-1
0
1
En score

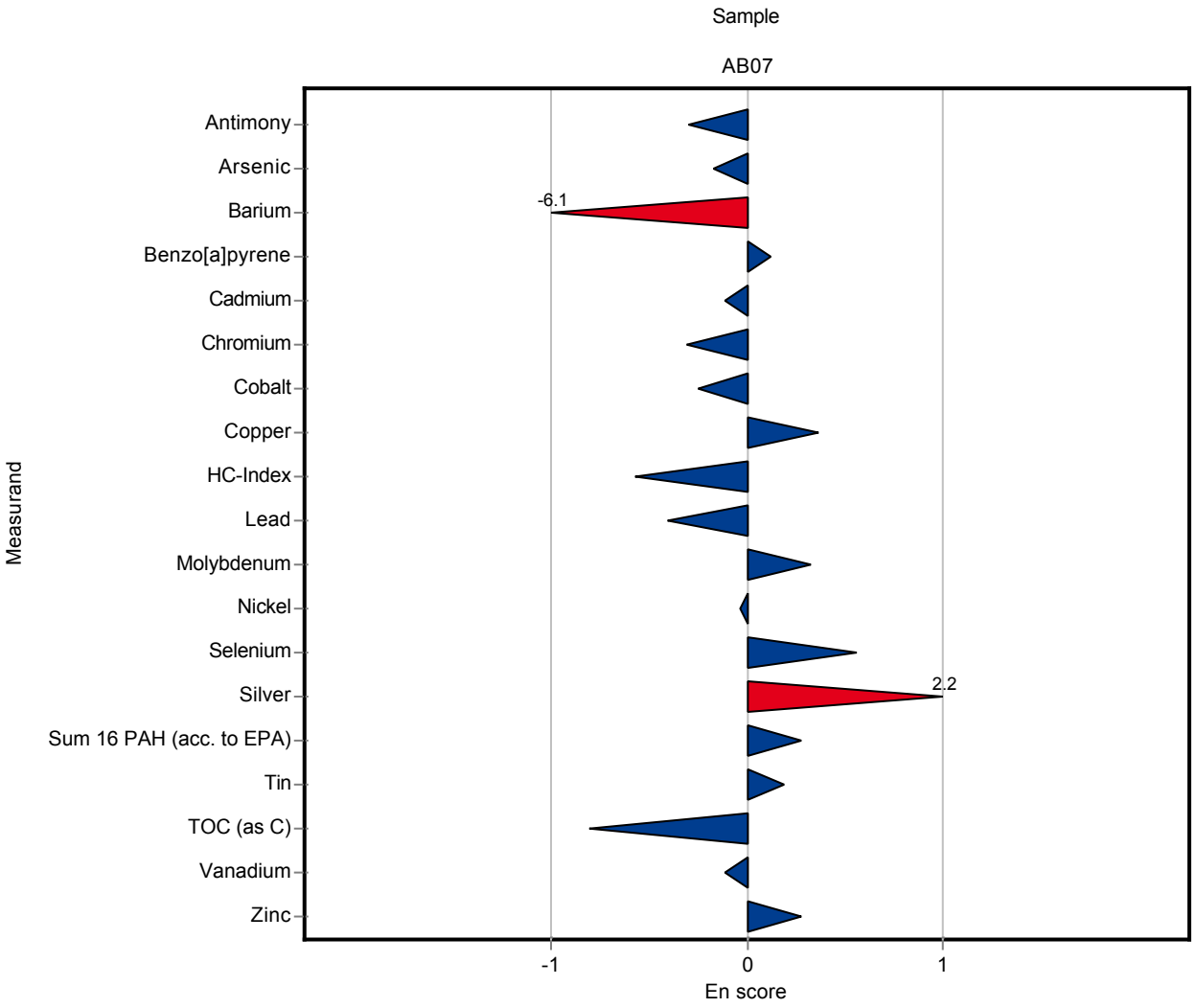
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.37 ± 0.57	0.803	90.2	-0.46
Arsenic	mg/kg DM	147 ± 3.34	142 ± 14	8.02	96.7	-0.60
Barium	mg/kg DM	732 ± 51.4	158 ± 39.5	176	21.6	-3.26
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.077 ± 0.02	0.0244	107	0.20
Cadmium	mg/kg DM	10.9 ± 0.473	10.6 ± 1.2	1.18	97.5	-0.23
Chromium	mg/kg DM	324 ± 13.2	298 ± 42	36.6	92.1	-0.70
Cobalt	mg/kg DM	297 ± 18.9	277 ± 39	40	93.4	-0.49
Copper	mg/kg DM	619 ± 18.8	695 ± 104	44.1	112	1.73
HC-Index	mg/kg DM	437 ± 93.7	303 ± 109	215	69.3	-0.63
Lead	mg/kg DM	93.8 ± 4	83.6 ± 12.6	11.7	89.1	-0.87
Mercury	mg/kg DM	0.13 ± 0.0204	<0.2 (LOQ) ± -199.8	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	4.23 ± 0.42	1.16	109	0.29
Nickel	mg/kg DM	300 ± 15.8	296 ± 53	38.3	98.8	-0.10
Selenium	mg/kg DM	2.38 ± 0.657	3.1 ± 0.56	1.19	130	0.61
Silver	mg/kg DM	13 ± 0.967	23.2 ± 2.3	2.05	178	4.95
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.23 ± 0.8	0.644	125	0.70
Tin	mg/kg DM	36.2 ± 2.3	39.9 ± 10	4.99	110	0.75
TOC (as C)	mg/kg DM	41100 ± 2100	31000 ± 6200	4810	75.5	-2.09
Vanadium	mg/kg DM	20.1 ± 2.56	19.6 ± 2	4.96	97.5	-0.10
Zinc	mg/kg DM	2370 ± 117	2763 ± 691	300	116	1.30


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-3.3
5.0
-2.1
-2
0
2
z-score

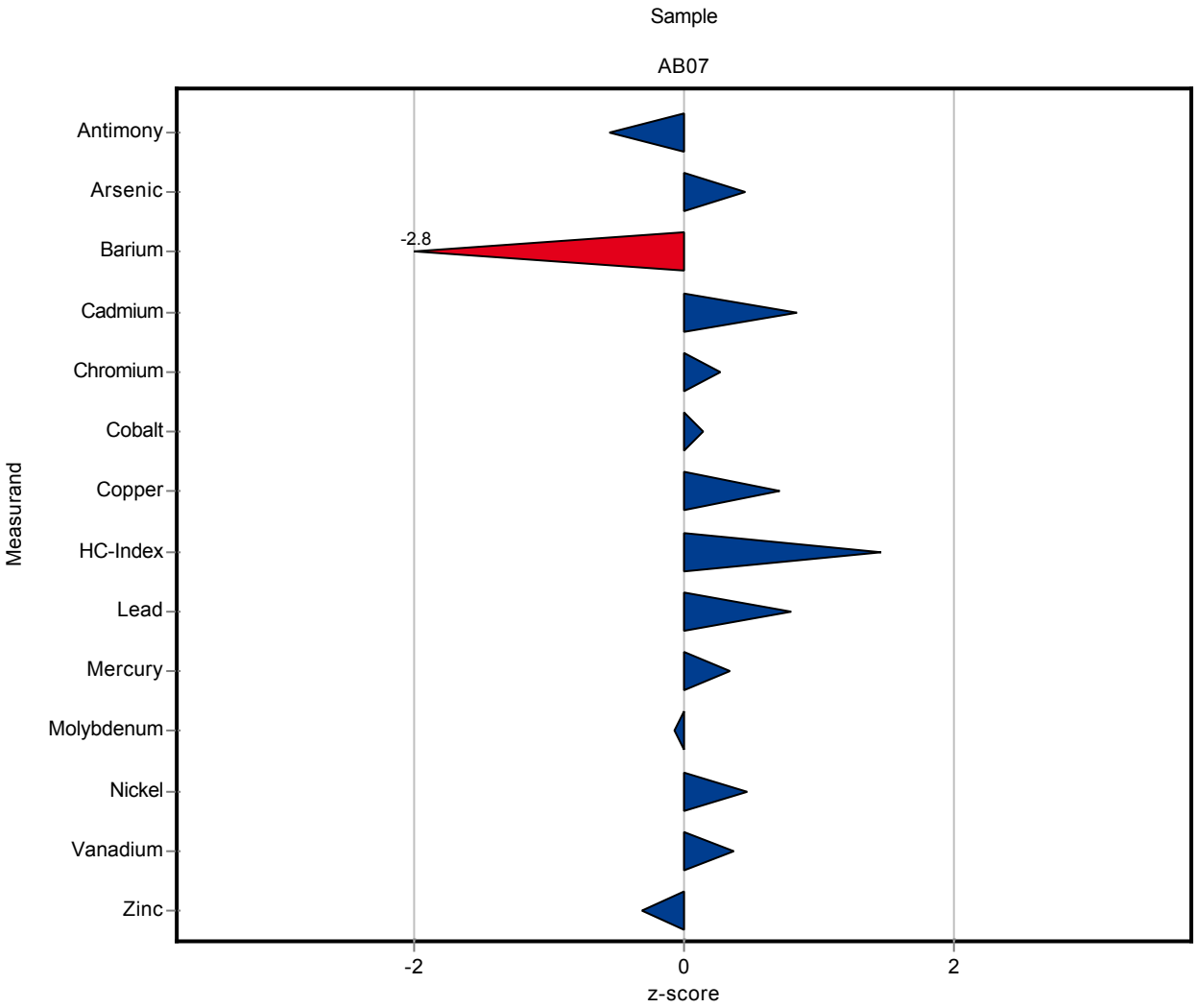
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.37 ± 0.57	0.803	90.2	-0.30
Arsenic	mg/kg DM	147 ± 3.34	142 ± 14	8.02	96.7	-0.17
Barium	mg/kg DM	732 ± 51.4	158 ± 39.5	176	21.6	-6.10
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.077 ± 0.02	0.0244	107	0.12
Cadmium	mg/kg DM	10.9 ± 0.473	10.6 ± 1.2	1.18	97.5	-0.11
Chromium	mg/kg DM	324 ± 13.2	298 ± 42	36.6	92.1	-0.30
Cobalt	mg/kg DM	297 ± 18.9	277 ± 39	40	93.4	-0.24
Copper	mg/kg DM	619 ± 18.8	695 ± 104	44.1	112	0.37
HC-Index	mg/kg DM	437 ± 93.7	303 ± 109	215	69.3	-0.57
Lead	mg/kg DM	93.8 ± 4	83.6 ± 12.6	11.7	89.1	-0.40
Mercury	mg/kg DM	0.13 ± 0.0204	<0.2 (LOQ) ± -199.8	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	4.23 ± 0.42	1.16	109	0.33
Nickel	mg/kg DM	300 ± 15.8	296 ± 53	38.3	98.8	-0.03
Selenium	mg/kg DM	2.38 ± 0.657	3.1 ± 0.56	1.19	130	0.56
Silver	mg/kg DM	13 ± 0.967	23.2 ± 2.3	2.05	178	2.16
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.23 ± 0.8	0.644	125	0.28
Tin	mg/kg DM	36.2 ± 2.3	39.9 ± 10	4.99	110	0.18
TOC (as C)	mg/kg DM	41100 ± 2100	31000 ± 6200	4810	75.5	-0.80
Vanadium	mg/kg DM	20.1 ± 2.56	19.6 ± 2	4.96	97.5	-0.11
Zinc	mg/kg DM	2370 ± 117	2763 ± 691	300	116	0.28


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-6.1
2.2
-1
0
1
En score

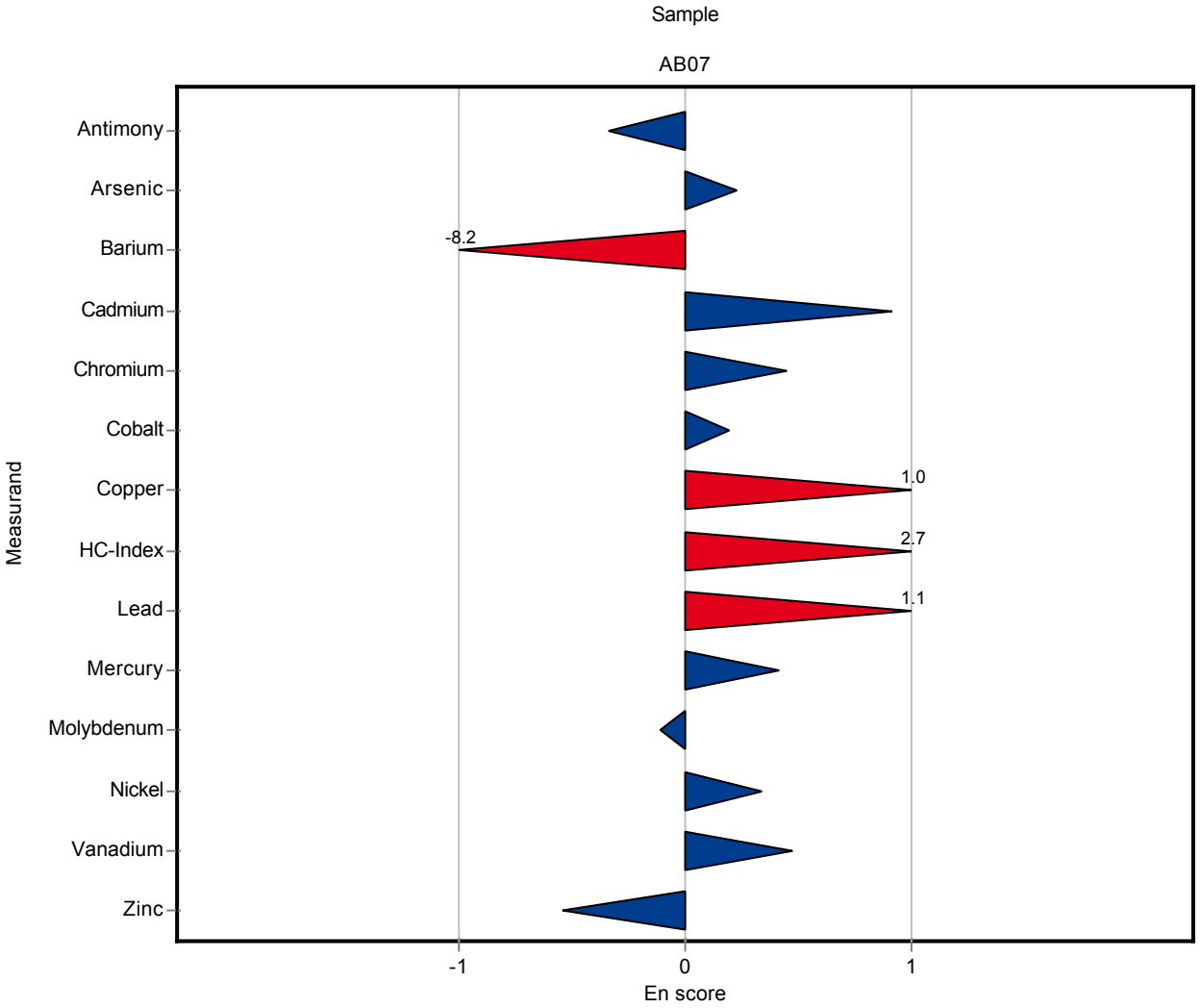
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.297 ± 0.61	0.803	88.2	-0.55
Arsenic	mg/kg DM	147 ± 3.34	150.4 ± 7.67	8.02	102	0.45
Barium	mg/kg DM	732 ± 51.4	240.4 ± 15.54	176	32.8	-2.79
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.87 ± 0.49	1.18	109	0.84
Chromium	mg/kg DM	324 ± 13.2	333.5 ± 8.74	36.6	103	0.27
Cobalt	mg/kg DM	297 ± 18.9	302.2 ± 10.6	40	102	0.14
Copper	mg/kg DM	619 ± 18.8	649.7 ± 11.66	44.1	105	0.71
HC-Index	mg/kg DM	437 ± 93.7	750.3 ± 35.2	215	172	1.46
Lead	mg/kg DM	93.8 ± 4	103.1 ± 3.72	11.7	110	0.80
Mercury	mg/kg DM	0.13 ± 0.0204	0.143 ± 0.0114	0.0367	110	0.35
Molybdenum	mg/kg DM	3.89 ± 0.607	3.813 ± 0.19	1.16	98	-0.07
Nickel	mg/kg DM	300 ± 15.8	317.5 ± 24.95	38.3	106	0.46
Selenium	mg/kg DM	2.38 ± 0.657	- ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	- ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	- ± -	4.99	-	-
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	21.97 ± 1.47	4.96	109	0.38
Zinc	mg/kg DM	2370 ± 117	2279 ± 63.15	300	96.1	-0.31


Sample
AB07
Antimony
Arsenic
Barium
-2.8
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Vanadium
Zinc
Measurand
-2
0
2
z-score

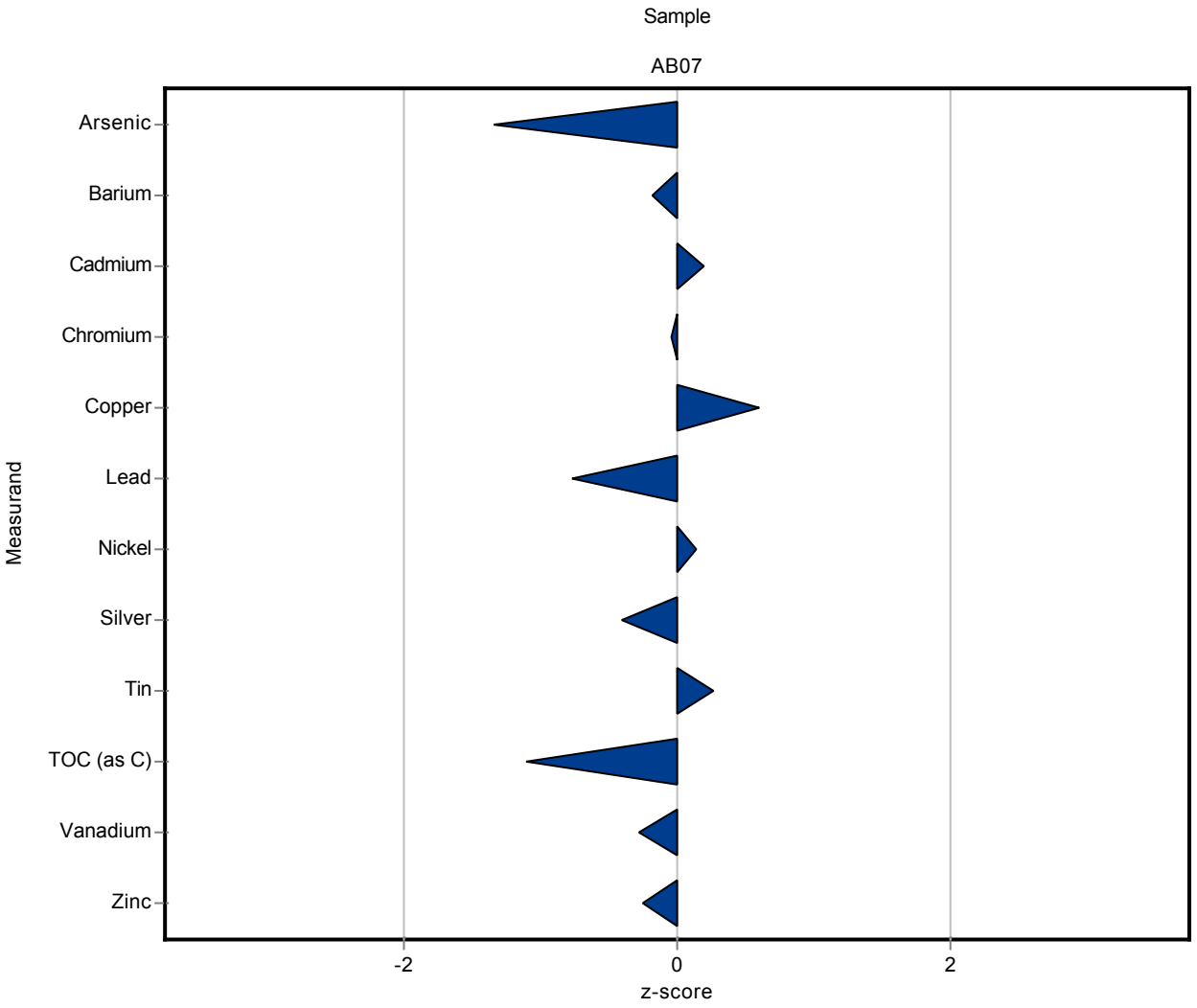
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.297 ± 0.61	0.803	88.2	-0.34
Arsenic	mg/kg DM	147 ± 3.34	150.4 ± 7.67	8.02	102	0.23
Barium	mg/kg DM	732 ± 51.4	240.4 ± 15.54	176	32.8	-8.20
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.87 ± 0.49	1.18	109	0.91
Chromium	mg/kg DM	324 ± 13.2	333.5 ± 8.74	36.6	103	0.45
Cobalt	mg/kg DM	297 ± 18.9	302.2 ± 10.6	40	102	0.20
Copper	mg/kg DM	619 ± 18.8	649.7 ± 11.66	44.1	105	1.04
HC-Index	mg/kg DM	437 ± 93.7	750.3 ± 35.2	215	172	2.67
Lead	mg/kg DM	93.8 ± 4	103.1 ± 3.72	11.7	110	1.10
Mercury	mg/kg DM	0.13 ± 0.0204	0.143 ± 0.0114	0.0367	110	0.42
Molybdenum	mg/kg DM	3.89 ± 0.607	3.813 ± 0.19	1.16	98	-0.11
Nickel	mg/kg DM	300 ± 15.8	317.5 ± 24.95	38.3	106	0.34
Selenium	mg/kg DM	2.38 ± 0.657	- ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	- ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	- ± -	4.99	-	-
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	21.97 ± 1.47	4.96	109	0.48
Zinc	mg/kg DM	2370 ± 117	2279 ± 63.15	300	96.1	-0.54


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Vanadium
Zinc
Measurand
-8.2
1.0
2.7
1.1
-1
0
1
En score

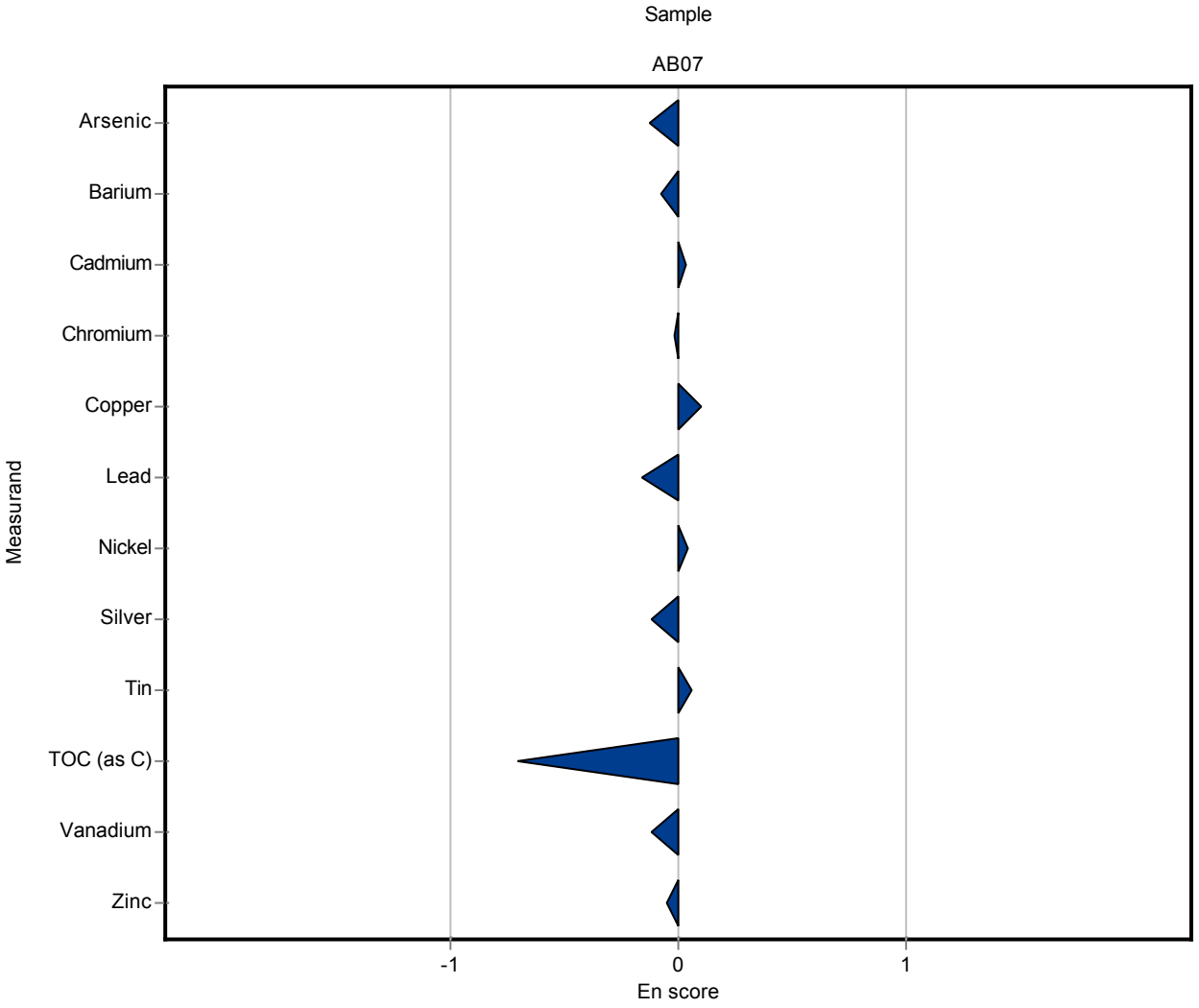
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	- ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	136 ± 42	8.02	92.6	-1.35
Barium	mg/kg DM	732 ± 51.4	701 ± 215	176	95.7	-0.18
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.1 ± 3.8	1.18	102	0.19
Chromium	mg/kg DM	324 ± 13.2	322 ± 65	36.6	99.5	-0.05
Cobalt	mg/kg DM	297 ± 18.9	- ± -	40	-	-
Copper	mg/kg DM	619 ± 18.8	645 ± 130	44.1	104	0.60
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	84.9 ± 28	11.7	90.5	-0.76
Mercury	mg/kg DM	0.13 ± 0.0204	- ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<100 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	305 ± 63	38.3	102	0.14
Selenium	mg/kg DM	2.38 ± 0.657	- ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	12.2 ± 3.5	2.05	93.5	-0.41
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	37.5 ± 12	4.99	104	0.27
TOC (as C)	mg/kg DM	41100 ± 2100	35765 ± 3600	4810	87.1	-1.10
Vanadium	mg/kg DM	20.1 ± 2.56	18.7 ± 5.7	4.96	93	-0.28
Zinc	mg/kg DM	2370 ± 117	2297 ± 700	300	96.8	-0.25


Sample
AB07
Arsenic
Barium
Cadmium
Chromium
Copper
Lead
Nickel
Silver
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-2
0
2
z-score

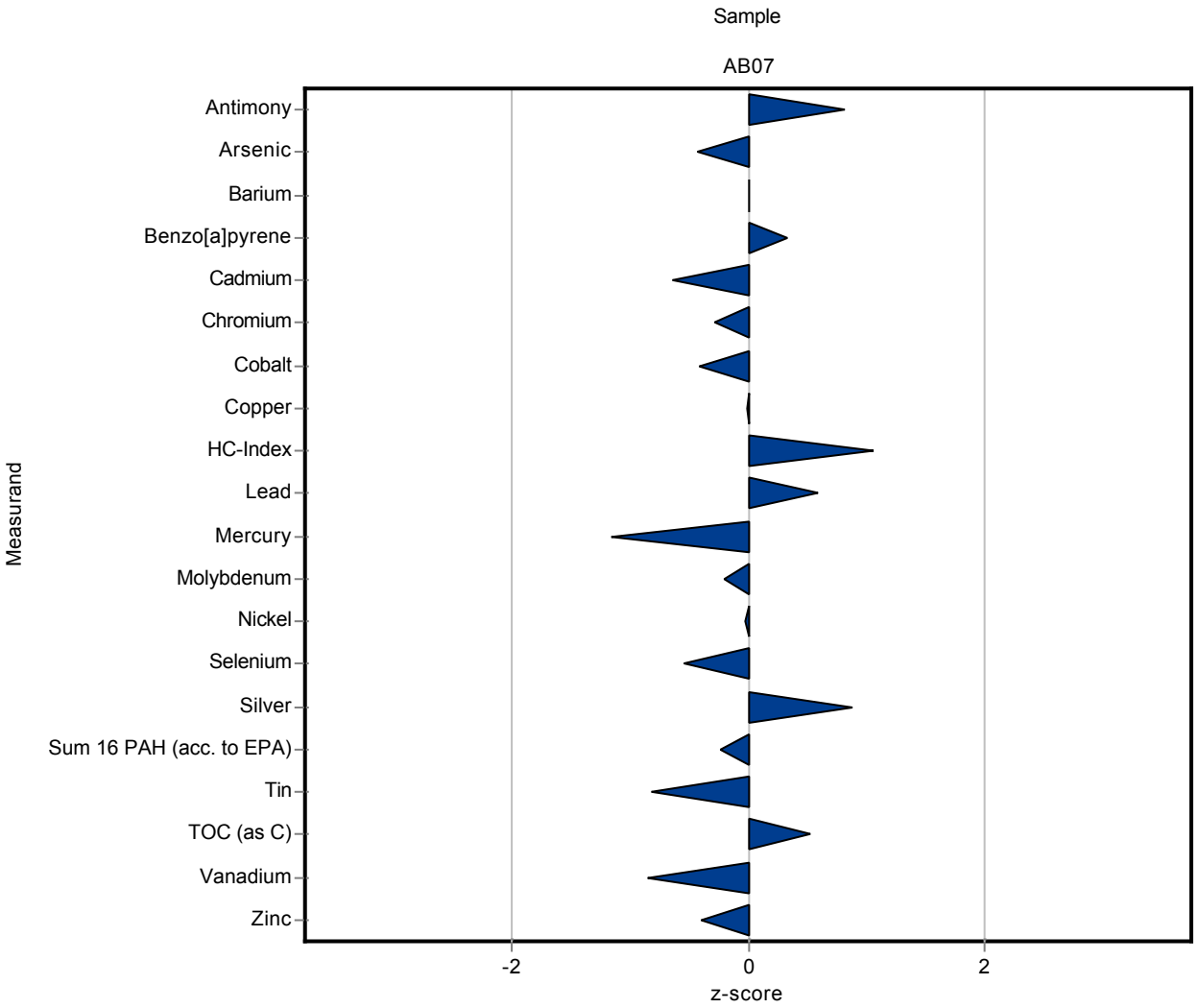
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	- ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	136 ± 42	8.02	92.6	-0.13
Barium	mg/kg DM	732 ± 51.4	701 ± 215	176	95.7	-0.07
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	11.1 ± 3.8	1.18	102	0.03
Chromium	mg/kg DM	324 ± 13.2	322 ± 65	36.6	99.5	-0.01
Cobalt	mg/kg DM	297 ± 18.9	- ± -	40	-	-
Copper	mg/kg DM	619 ± 18.8	645 ± 130	44.1	104	0.10
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	84.9 ± 28	11.7	90.5	-0.16
Mercury	mg/kg DM	0.13 ± 0.0204	- ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<100 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	305 ± 63	38.3	102	0.04
Selenium	mg/kg DM	2.38 ± 0.657	- ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	12.2 ± 3.5	2.05	93.5	-0.12
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	37.5 ± 12	4.99	104	0.05
TOC (as C)	mg/kg DM	41100 ± 2100	35765 ± 3600	4810	87.1	-0.71
Vanadium	mg/kg DM	20.1 ± 2.56	18.7 ± 5.7	4.96	93	-0.12
Zinc	mg/kg DM	2370 ± 117	2297 ± 700	300	96.8	-0.05


Sample
AB07
Arsenic
Barium
Cadmium
Chromium
Copper
Lead
Nickel
Silver
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-1
0
1
En score

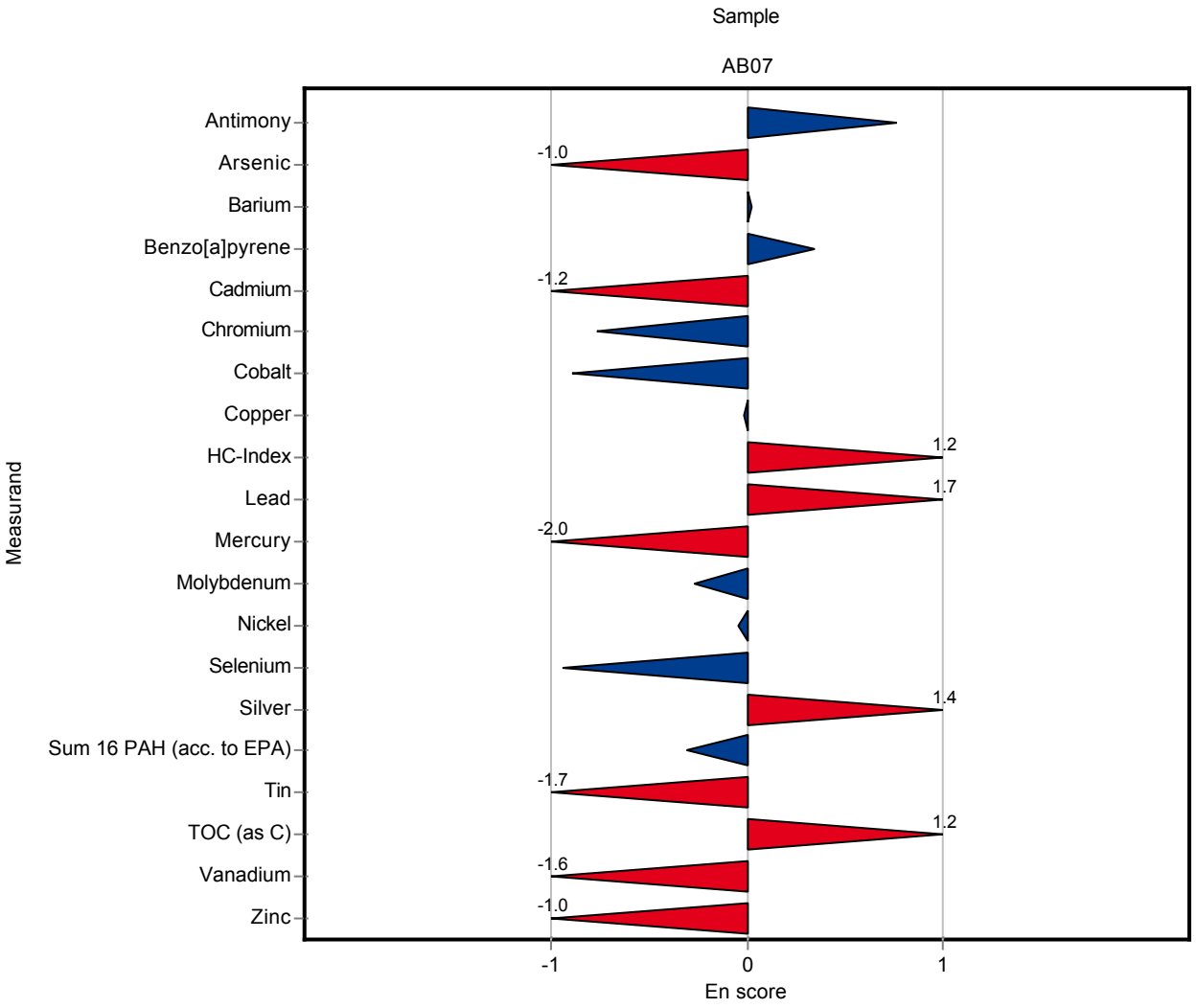
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.395 ± 0.36	0.803	118	0.82
Arsenic	mg/kg DM	147 ± 3.34	143.41 ± 0.09	8.02	97.7	-0.42
Barium	mg/kg DM	732 ± 51.4	733.7 ± 0.2	176	100	0.01
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.08 ± 0.01	0.0244	111	0.33
Cadmium	mg/kg DM	10.9 ± 0.473	10.11 ± 0.2	1.18	93	-0.65
Chromium	mg/kg DM	324 ± 13.2	313.5 ± 1	36.6	96.9	-0.28
Cobalt	mg/kg DM	297 ± 18.9	279.7 ± 0.3	40	94.3	-0.42
Copper	mg/kg DM	619 ± 18.8	618.4 ± 2	44.1	100	0.00
HC-Index	mg/kg DM	437 ± 93.7	663.6 ± 82	215	152	1.05
Lead	mg/kg DM	93.8 ± 4	100.65 ± 0.29	11.7	107	0.59
Mercury	mg/kg DM	0.13 ± 0.0204	0.088 ± 0.003	0.0367	67.5	-1.15
Molybdenum	mg/kg DM	3.89 ± 0.607	3.658 ± 0.314	1.16	94	-0.20
Nickel	mg/kg DM	300 ± 15.8	299.1 ± 0.4	38.3	99.8	-0.02
Selenium	mg/kg DM	2.38 ± 0.657	1.735 ± 0.091	1.19	73	-0.54
Silver	mg/kg DM	13 ± 0.967	14.84 ± 0.4	2.05	114	0.88
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.63 ± 0.2	0.644	91.6	-0.23
Tin	mg/kg DM	36.2 ± 2.3	32.06 ± 0.35	4.99	88.6	-0.82
TOC (as C)	mg/kg DM	41100 ± 2100	43600 ± 10	4810	106	0.53
Vanadium	mg/kg DM	20.1 ± 2.56	15.93 ± 0.28	4.96	79.2	-0.84
Zinc	mg/kg DM	2370 ± 117	2250.8 ± 0.6	300	94.9	-0.40


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-2
0
2
z-score

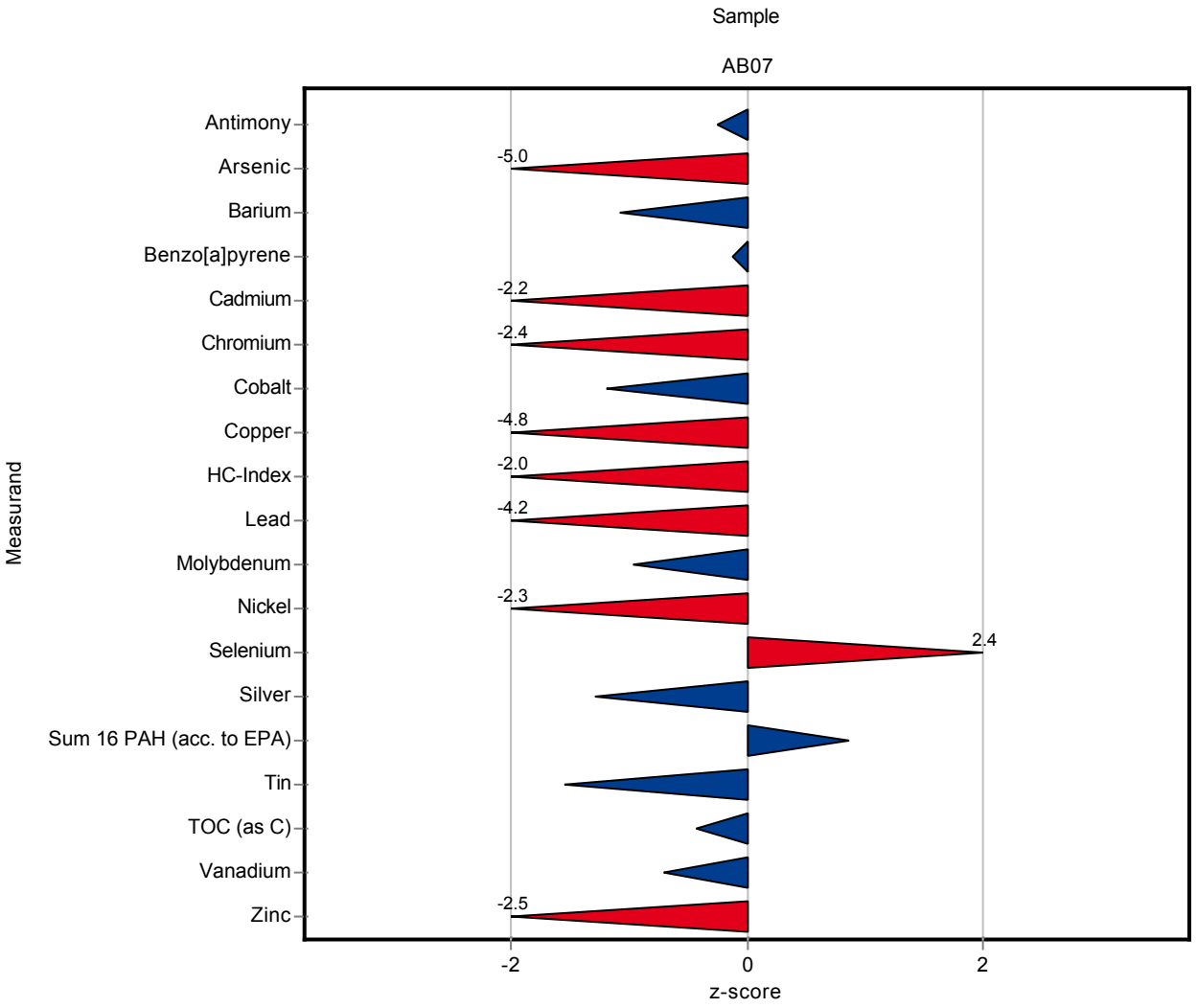
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.395 ± 0.36	0.803	118	0.77
Arsenic	mg/kg DM	147 ± 3.34	143.41 ± 0.09	8.02	97.7	-1.02
Barium	mg/kg DM	732 ± 51.4	733.7 ± 0.2	176	100	0.02
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.08 ± 0.01	0.0244	111	0.34
Cadmium	mg/kg DM	10.9 ± 0.473	10.11 ± 0.2	1.18	93	-1.24
Chromium	mg/kg DM	324 ± 13.2	313.5 ± 1	36.6	96.9	-0.76
Cobalt	mg/kg DM	297 ± 18.9	279.7 ± 0.3	40	94.3	-0.89
Copper	mg/kg DM	619 ± 18.8	618.4 ± 2	44.1	100	-0.01
HC-Index	mg/kg DM	437 ± 93.7	663.6 ± 82	215	152	1.20
Lead	mg/kg DM	93.8 ± 4	100.65 ± 0.29	11.7	107	1.69
Mercury	mg/kg DM	0.13 ± 0.0204	0.088 ± 0.003	0.0367	67.5	-1.99
Molybdenum	mg/kg DM	3.89 ± 0.607	3.658 ± 0.314	1.16	94	-0.27
Nickel	mg/kg DM	300 ± 15.8	299.1 ± 0.4	38.3	99.8	-0.04
Selenium	mg/kg DM	2.38 ± 0.657	1.735 ± 0.091	1.19	73	-0.94
Silver	mg/kg DM	13 ± 0.967	14.84 ± 0.4	2.05	114	1.43
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.63 ± 0.2	0.644	91.6	-0.30
Tin	mg/kg DM	36.2 ± 2.3	32.06 ± 0.35	4.99	88.6	-1.71
TOC (as C)	mg/kg DM	41100 ± 2100	43600 ± 10	4810	106	1.21
Vanadium	mg/kg DM	20.1 ± 2.56	15.93 ± 0.28	4.96	79.2	-1.59
Zinc	mg/kg DM	2370 ± 117	2250.8 ± 0.6	300	94.9	-1.04


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-1.0
-1.2
1.2
1.7
-2.0
1.4
-1.7
1.2
-1.6
-1.0
-1
0
1
En score

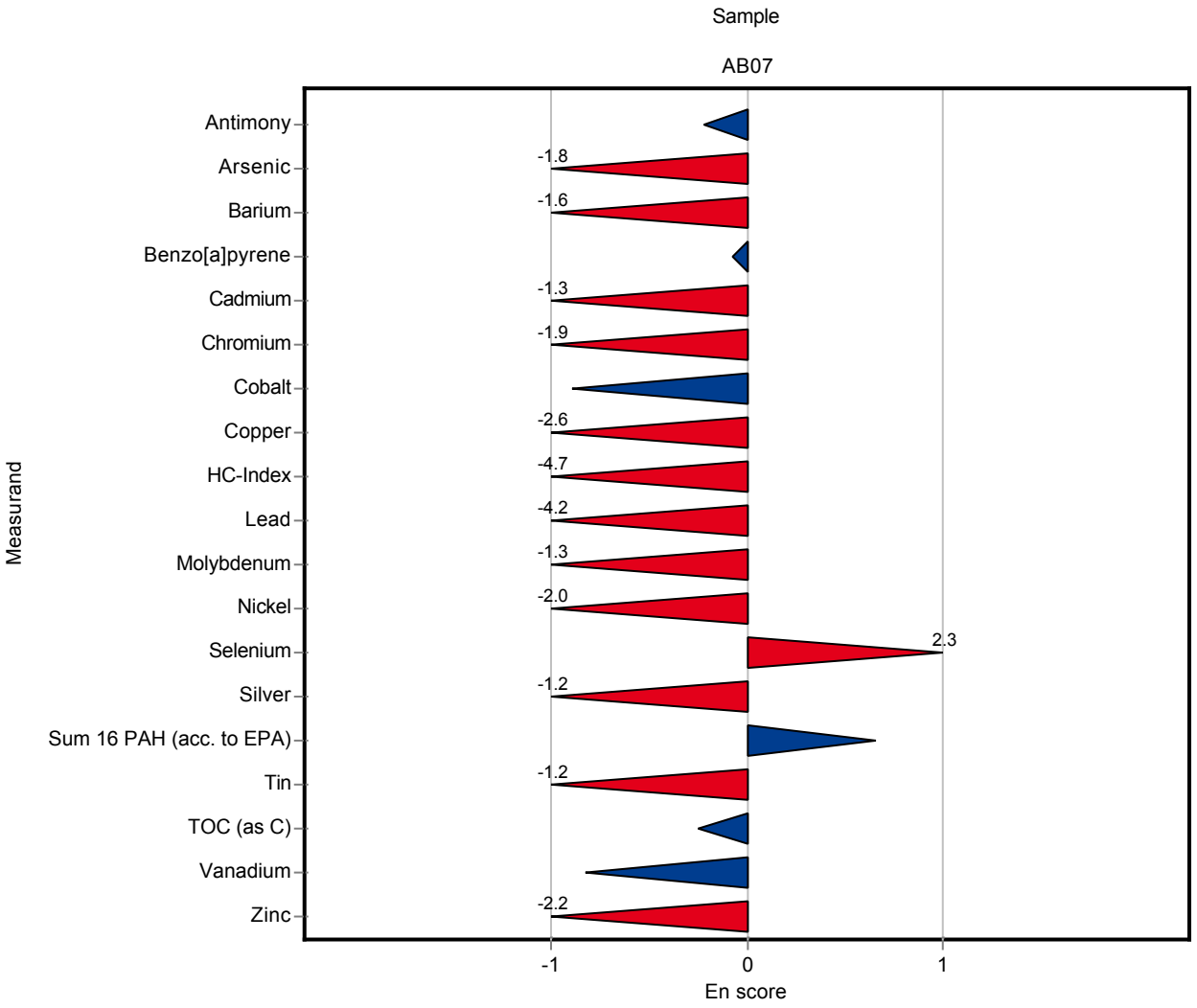
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.53 ± 0.4	0.803	94.5	-0.26
Arsenic	mg/kg DM	147 ± 3.34	107 ± 11	8.02	72.9	-4.97
Barium	mg/kg DM	732 ± 51.4	542 ± 54	176	74	-1.08
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.069 ± 0.02	0.0244	95.8	-0.13
Cadmium	mg/kg DM	10.9 ± 0.473	8.28 ± 1	1.18	76.1	-2.20
Chromium	mg/kg DM	324 ± 13.2	234 ± 23	36.6	72.3	-2.45
Cobalt	mg/kg DM	297 ± 18.9	249 ± 25	40	84	-1.19
Copper	mg/kg DM	619 ± 18.8	407 ± 40	44.1	65.8	-4.80
HC-Index	mg/kg DM	437 ± 93.7	0.29 ± 0.06	215	0.0663	-2.04
Lead	mg/kg DM	93.8 ± 4	45.2 ± 5.5	11.7	48.2	-4.16
Mercury	mg/kg DM	0.13 ± 0.0204	<0.18 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	2.78 ± 0.3	1.16	71.5	-0.96
Nickel	mg/kg DM	300 ± 15.8	212 ± 21	38.3	70.7	-2.29
Selenium	mg/kg DM	2.38 ± 0.657	5.17 ± 0.5	1.19	217	2.36
Silver	mg/kg DM	13 ± 0.967	10.4 ± 1	2.05	79.7	-1.29
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.34 ± 0.4	0.644	131	0.87
Tin	mg/kg DM	36.2 ± 2.3	28.5 ± 2.9	4.99	78.8	-1.54
TOC (as C)	mg/kg DM	41100 ± 2100	39000 ± 4000	4810	95	-0.43
Vanadium	mg/kg DM	20.1 ± 2.56	16.6 ± 1.7	4.96	82.5	-0.71
Zinc	mg/kg DM	2370 ± 117	1630 ± 160	300	68.7	-2.47


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-5.0
-2.2
-2.4
-4.8
-2.0
-4.2
-2.3
2.4
-2.5
-2
0
2
z-score

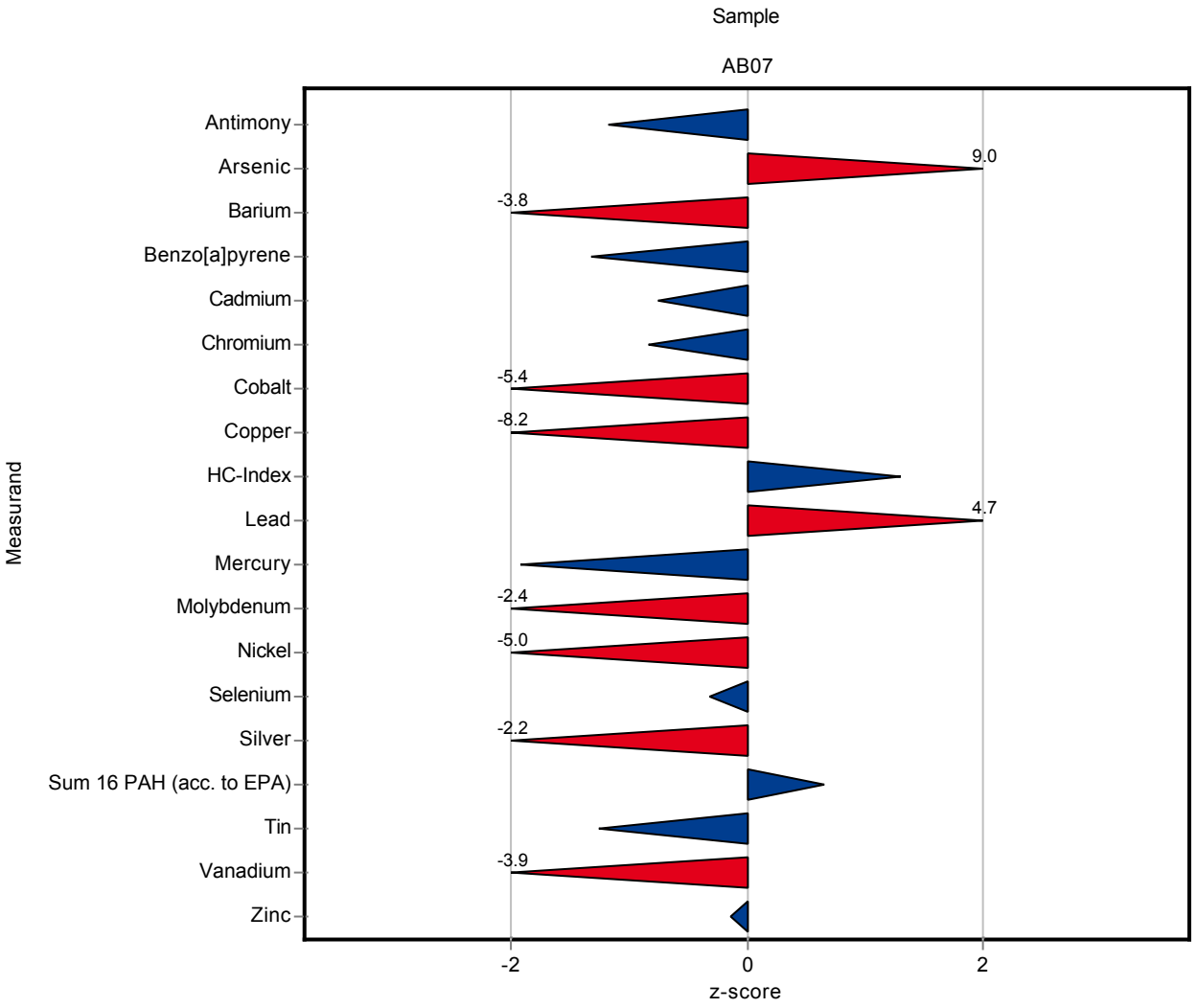
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.53 ± 0.4	0.803	94.5	-0.22
Arsenic	mg/kg DM	147 ± 3.34	107 ± 11	8.02	72.9	-1.79
Barium	mg/kg DM	732 ± 51.4	542 ± 54	176	74	-1.59
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.069 ± 0.02	0.0244	95.8	-0.07
Cadmium	mg/kg DM	10.9 ± 0.473	8.28 ± 1	1.18	76.1	-1.26
Chromium	mg/kg DM	324 ± 13.2	234 ± 23	36.6	72.3	-1.87
Cobalt	mg/kg DM	297 ± 18.9	249 ± 25	40	84	-0.89
Copper	mg/kg DM	619 ± 18.8	407 ± 40	44.1	65.8	-2.57
HC-Index	mg/kg DM	437 ± 93.7	0.29 ± 0.06	215	0.0663	-4.67
Lead	mg/kg DM	93.8 ± 4	45.2 ± 5.5	11.7	48.2	-4.15
Mercury	mg/kg DM	0.13 ± 0.0204	<0.18 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	2.78 ± 0.3	1.16	71.5	-1.30
Nickel	mg/kg DM	300 ± 15.8	212 ± 21	38.3	70.7	-1.96
Selenium	mg/kg DM	2.38 ± 0.657	5.17 ± 0.5	1.19	217	2.33
Silver	mg/kg DM	13 ± 0.967	10.4 ± 1	2.05	79.7	-1.19
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.34 ± 0.4	0.644	131	0.66
Tin	mg/kg DM	36.2 ± 2.3	28.5 ± 2.9	4.99	78.8	-1.23
TOC (as C)	mg/kg DM	41100 ± 2100	39000 ± 4000	4810	95	-0.25
Vanadium	mg/kg DM	20.1 ± 2.56	16.6 ± 1.7	4.96	82.5	-0.82
Zinc	mg/kg DM	2370 ± 117	1630 ± 160	300	68.7	-2.18


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-1.8
-1.6
-1.3
-1.9
-2.6
-4.7
-4.2
-1.3
-2.0
2.3
-1.2
-1.2
-2.2
-1
0
1
En score

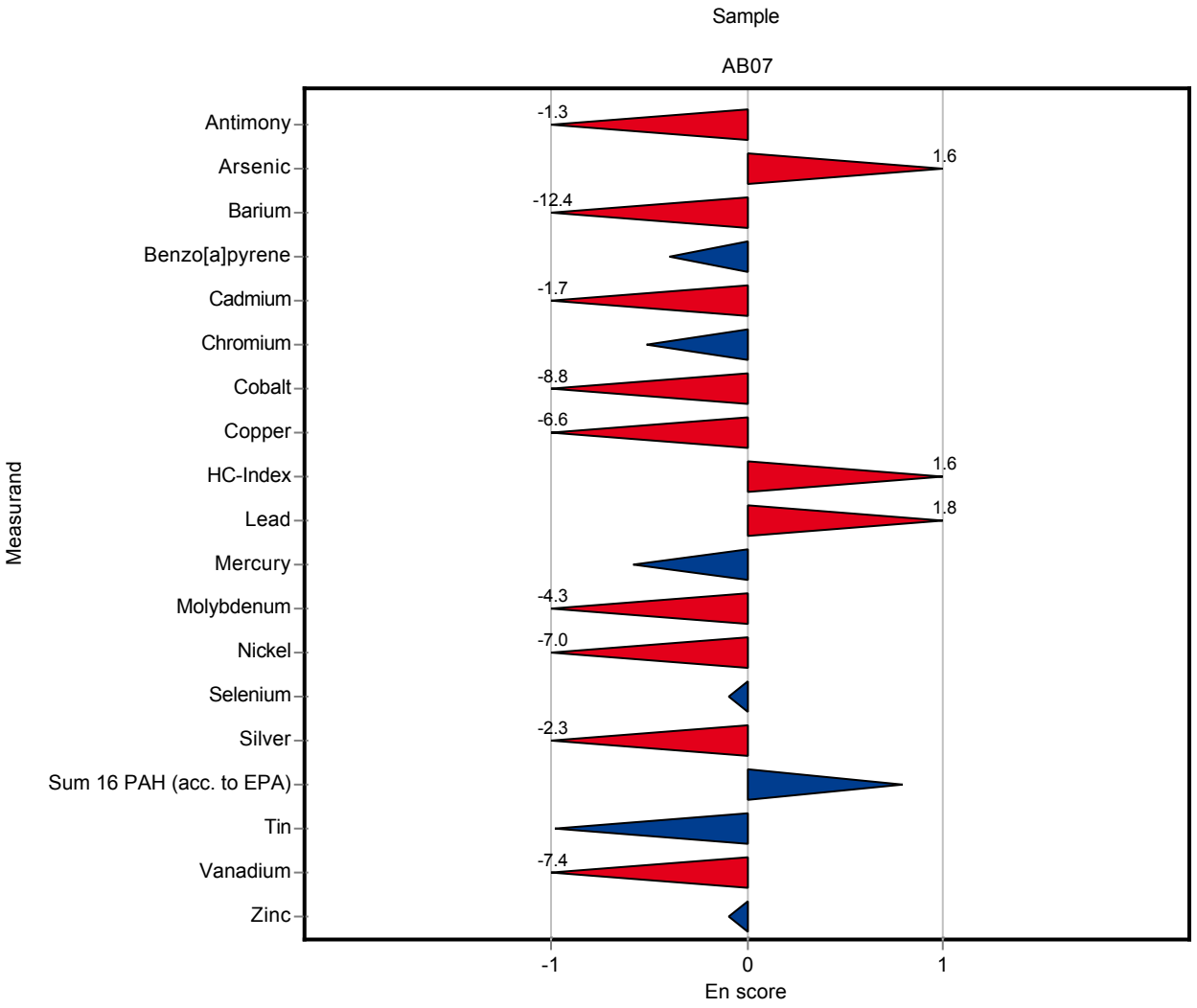
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	2.8 ± 0.282	0.803	74.9	-1.17
Arsenic	mg/kg DM	147 ± 3.34	219 ± 21.9	8.02	149	9.00
Barium	mg/kg DM	732 ± 51.4	70 ± 7	176	9.56	-3.76
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.04 ± 0.04	0.0244	55.5	-1.31
Cadmium	mg/kg DM	10.9 ± 0.473	9.99 ± 0.1	1.18	91.9	-0.75
Chromium	mg/kg DM	324 ± 13.2	293 ± 29.3	36.6	90.5	-0.84
Cobalt	mg/kg DM	297 ± 18.9	79.1 ± 7.9	40	26.7	-5.44
Copper	mg/kg DM	619 ± 18.8	258 ± 25.8	44.1	41.7	-8.18
HC-Index	mg/kg DM	437 ± 93.7	718 ± 72	215	164	1.31
Lead	mg/kg DM	93.8 ± 4	149 ± 14.9	11.7	159	4.73
Mercury	mg/kg DM	0.13 ± 0.0204	0.06 ± 0.06	0.0367	46.1	-1.91
Molybdenum	mg/kg DM	3.89 ± 0.607	1.1 ± 0.11	1.16	28.3	-2.41
Nickel	mg/kg DM	300 ± 15.8	109 ± 11	38.3	36.4	-4.98
Selenium	mg/kg DM	2.38 ± 0.657	2 ± 2	1.19	84.1	-0.32
Silver	mg/kg DM	13 ± 0.967	8.45 ± 0.85	2.05	64.8	-2.24
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.2 ± 0.22	0.644	124	0.65
Tin	mg/kg DM	36.2 ± 2.3	29.9 ± 2.99	4.99	82.6	-1.26
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	1 ± 0.1	4.96	4.97	-3.86
Zinc	mg/kg DM	2370 ± 117	2330 ± 233	300	98.2	-0.14


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
Vanadium
Zinc
9.0
-3.8
-5.4
-8.2
4.7
-2.4
-5.0
-2.2
-3.9
Measurand
-2
0
2
z-score

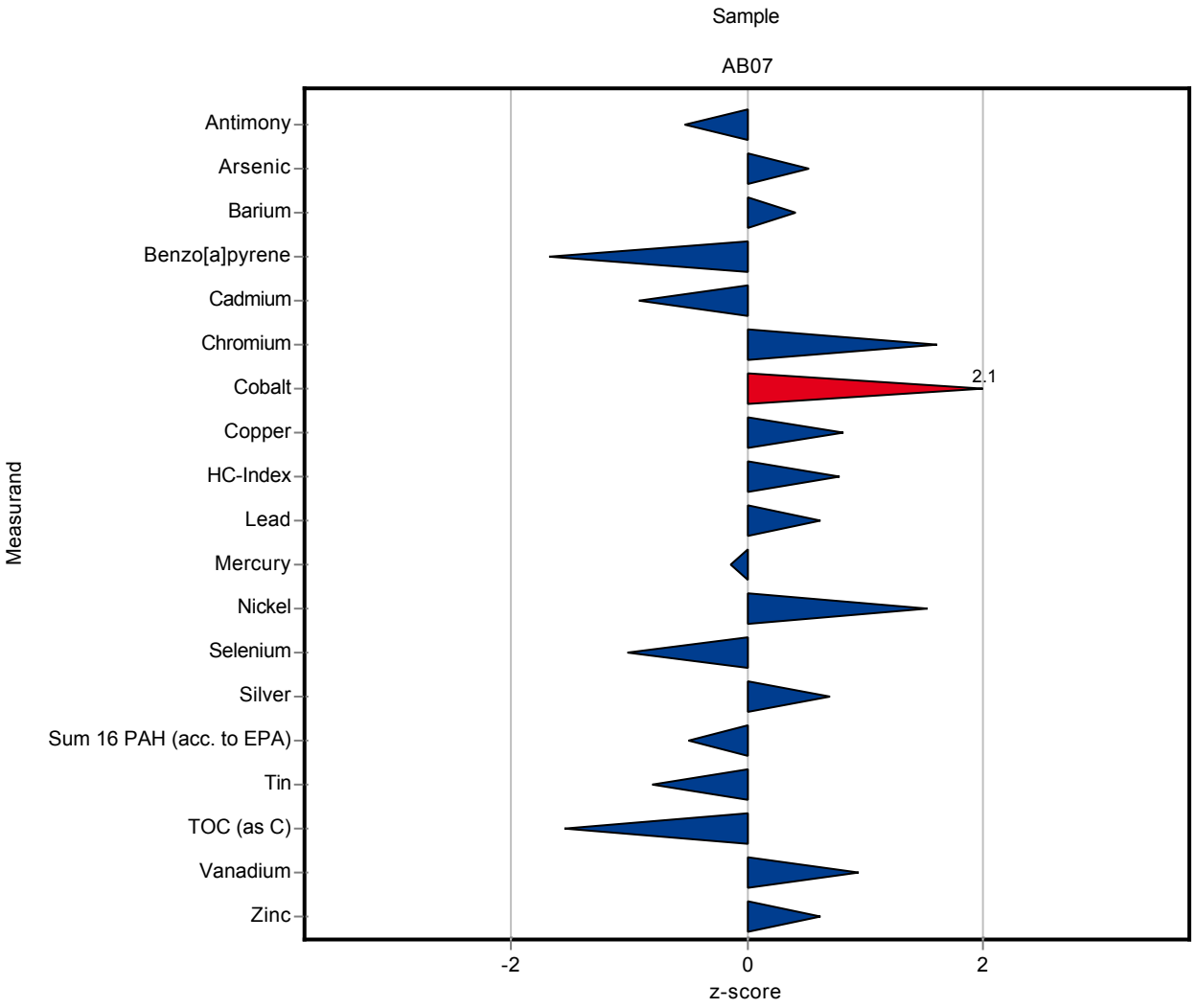
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	2.8 ± 0.282	0.803	74.9	-1.28
Arsenic	mg/kg DM	147 ± 3.34	219 ± 21.9	8.02	149	1.64
Barium	mg/kg DM	732 ± 51.4	70 ± 7	176	9.56	-12.40
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.04 ± 0.04	0.0244	55.5	-0.40
Cadmium	mg/kg DM	10.9 ± 0.473	9.99 ± 0.1	1.18	91.9	-1.73
Chromium	mg/kg DM	324 ± 13.2	293 ± 29.3	36.6	90.5	-0.51
Cobalt	mg/kg DM	297 ± 18.9	79.1 ± 7.9	40	26.7	-8.82
Copper	mg/kg DM	619 ± 18.8	258 ± 25.8	44.1	41.7	-6.57
HC-Index	mg/kg DM	437 ± 93.7	718 ± 72	215	164	1.63
Lead	mg/kg DM	93.8 ± 4	149 ± 14.9	11.7	159	1.84
Mercury	mg/kg DM	0.13 ± 0.0204	0.06 ± 0.06	0.0367	46.1	-0.58
Molybdenum	mg/kg DM	3.89 ± 0.607	1.1 ± 0.11	1.16	28.3	-4.32
Nickel	mg/kg DM	300 ± 15.8	109 ± 11	38.3	36.4	-7.04
Selenium	mg/kg DM	2.38 ± 0.657	2 ± 2	1.19	84.1	-0.09
Silver	mg/kg DM	13 ± 0.967	8.45 ± 0.85	2.05	64.8	-2.35
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.2 ± 0.22	0.644	124	0.79
Tin	mg/kg DM	36.2 ± 2.3	29.9 ± 2.99	4.99	82.6	-0.98
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	1 ± 0.1	4.96	4.97	-7.43
Zinc	mg/kg DM	2370 ± 117	2330 ± 233	300	98.2	-0.09


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
Vanadium
Zinc
-1.3
1.6
-12.4
-1.7
-8.8
-6.6
1.6
1.8
-4.3
-7.0
-2.3
-7.4
-1
0
1
En score

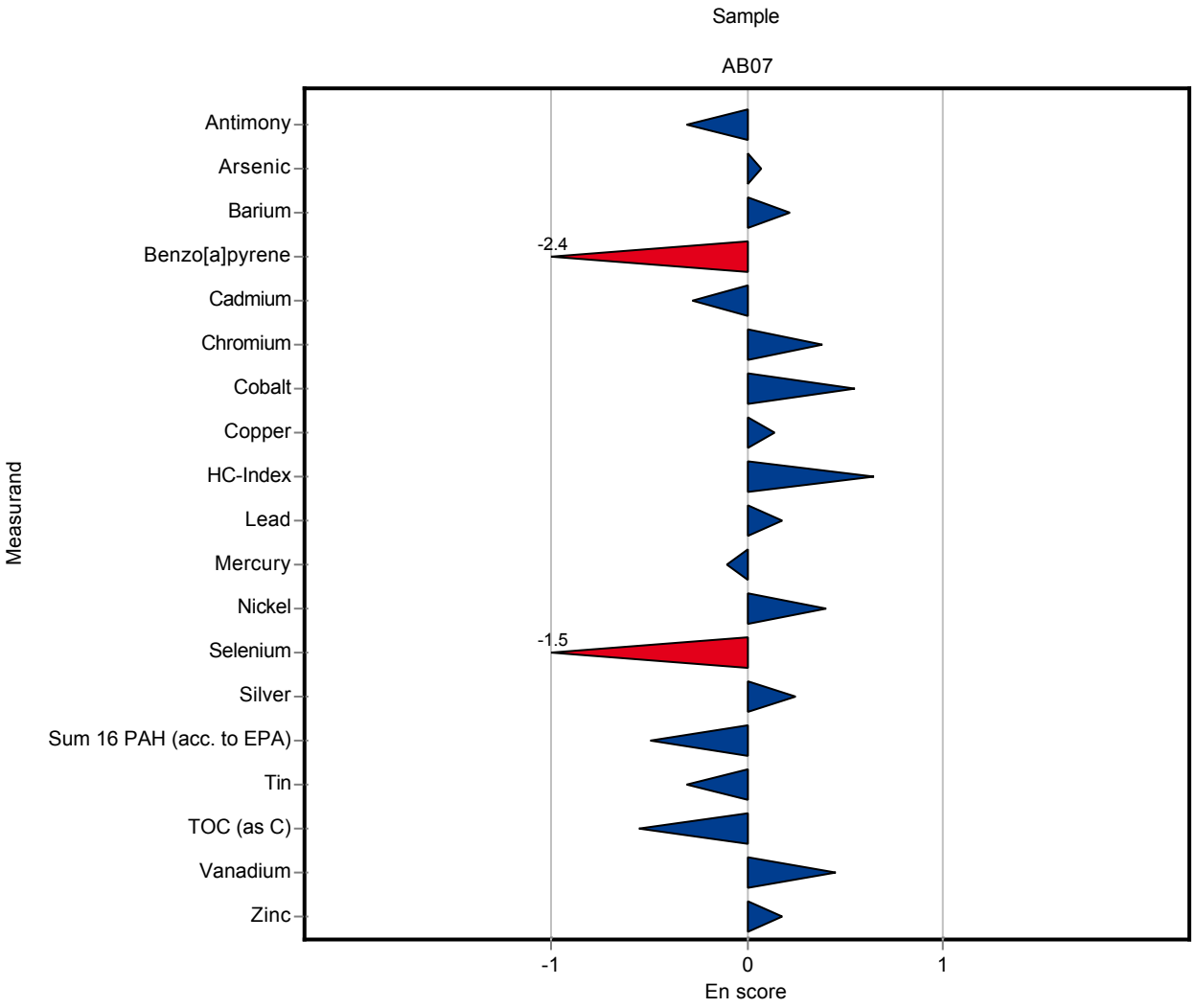
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.31 ± 0.66	0.803	88.6	-0.53
Arsenic	mg/kg DM	147 ± 3.34	151 ± 30	8.02	103	0.52
Barium	mg/kg DM	732 ± 51.4	805 ± 161	176	110	0.41
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.031 ± 0.006	0.0244	43	-1.68
Cadmium	mg/kg DM	10.9 ± 0.473	9.79 ± 1.96	1.18	90	-0.92
Chromium	mg/kg DM	324 ± 13.2	383 ± 77	36.6	118	1.62
Cobalt	mg/kg DM	297 ± 18.9	381 ± 76	40	128	2.11
Copper	mg/kg DM	619 ± 18.8	655 ± 131	44.1	106	0.83
HC-Index	mg/kg DM	437 ± 93.7	605 ± 121	215	138	0.78
Lead	mg/kg DM	93.8 ± 4	101 ± 20	11.7	108	0.62
Mercury	mg/kg DM	0.13 ± 0.0204	0.125 ± 0.025	0.0367	95.9	-0.14
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	358 ± 72	38.3	119	1.52
Selenium	mg/kg DM	2.38 ± 0.657	1.17 ± 0.23	1.19	49.2	-1.02
Silver	mg/kg DM	13 ± 0.967	14.5 ± 2.9	2.05	111	0.71
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.46 ± 0.29	0.644	82	-0.50
Tin	mg/kg DM	36.2 ± 2.3	32.2 ± 6.4	4.99	89	-0.80
TOC (as C)	mg/kg DM	41100 ± 2100	33600 ± 6720	4810	81.8	-1.55
Vanadium	mg/kg DM	20.1 ± 2.56	24.8 ± 5	4.96	123	0.95
Zinc	mg/kg DM	2370 ± 117	2560 ± 512	300	108	0.63


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
2.1
Measurand
-2
0
2
z-score

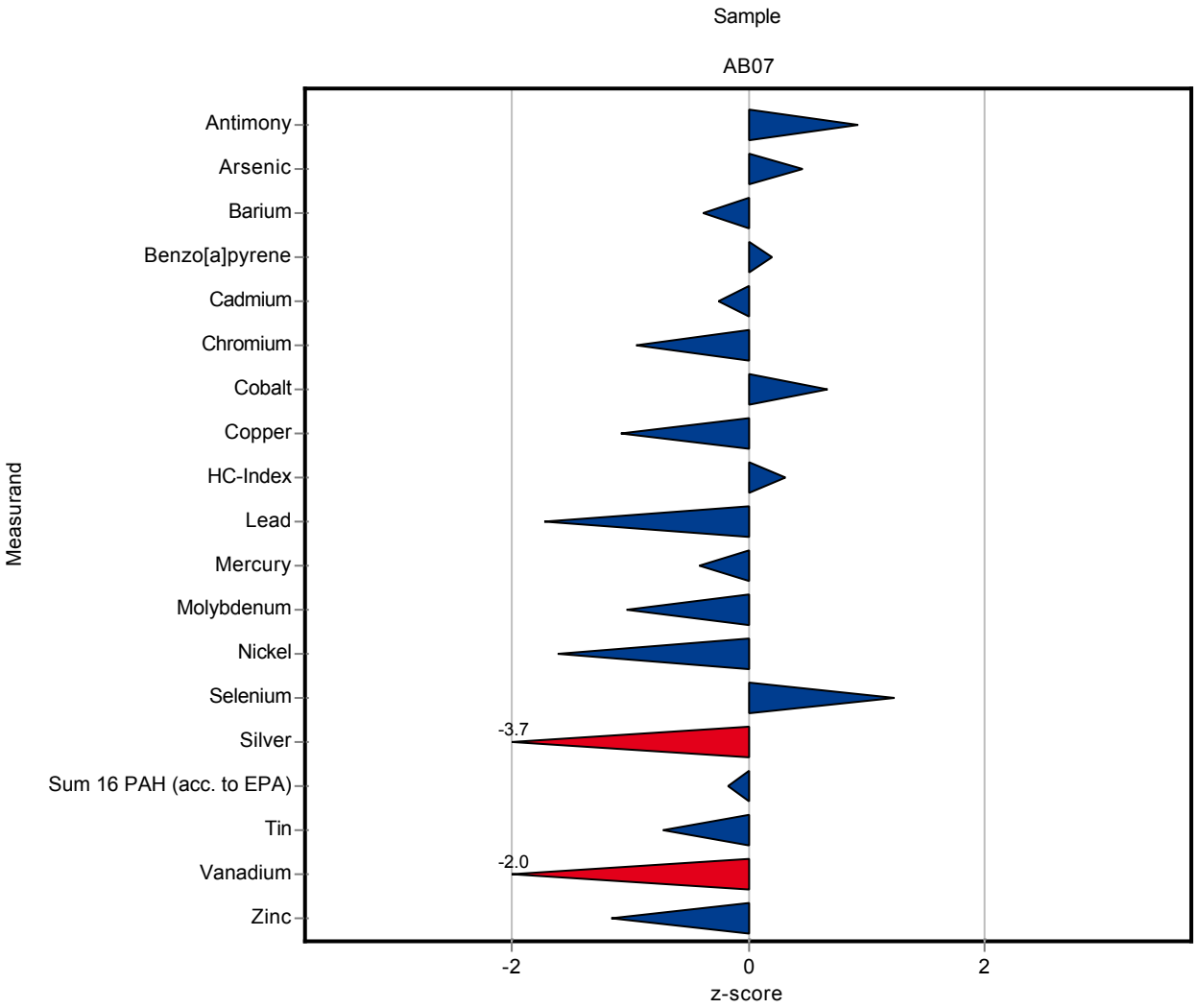
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.31 ± 0.66	0.803	88.6	-0.30
Arsenic	mg/kg DM	147 ± 3.34	151 ± 30	8.02	103	0.07
Barium	mg/kg DM	732 ± 51.4	805 ± 161	176	110	0.22
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.031 ± 0.006	0.0244	43	-2.44
Cadmium	mg/kg DM	10.9 ± 0.473	9.79 ± 1.96	1.18	90	-0.28
Chromium	mg/kg DM	324 ± 13.2	383 ± 77	36.6	118	0.38
Cobalt	mg/kg DM	297 ± 18.9	381 ± 76	40	128	0.55
Copper	mg/kg DM	619 ± 18.8	655 ± 131	44.1	106	0.14
HC-Index	mg/kg DM	437 ± 93.7	605 ± 121	215	138	0.65
Lead	mg/kg DM	93.8 ± 4	101 ± 20	11.7	108	0.18
Mercury	mg/kg DM	0.13 ± 0.0204	0.125 ± 0.025	0.0367	95.9	-0.10
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	358 ± 72	38.3	119	0.40
Selenium	mg/kg DM	2.38 ± 0.657	1.17 ± 0.23	1.19	49.2	-1.50
Silver	mg/kg DM	13 ± 0.967	14.5 ± 2.9	2.05	111	0.25
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.46 ± 0.29	0.644	82	-0.49
Tin	mg/kg DM	36.2 ± 2.3	32.2 ± 6.4	4.99	89	-0.31
TOC (as C)	mg/kg DM	41100 ± 2100	33600 ± 6720	4810	81.8	-0.55
Vanadium	mg/kg DM	20.1 ± 2.56	24.8 ± 5	4.96	123	0.45
Zinc	mg/kg DM	2370 ± 117	2560 ± 512	300	108	0.18


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-2.4
-1.5
-1
0
1
En score

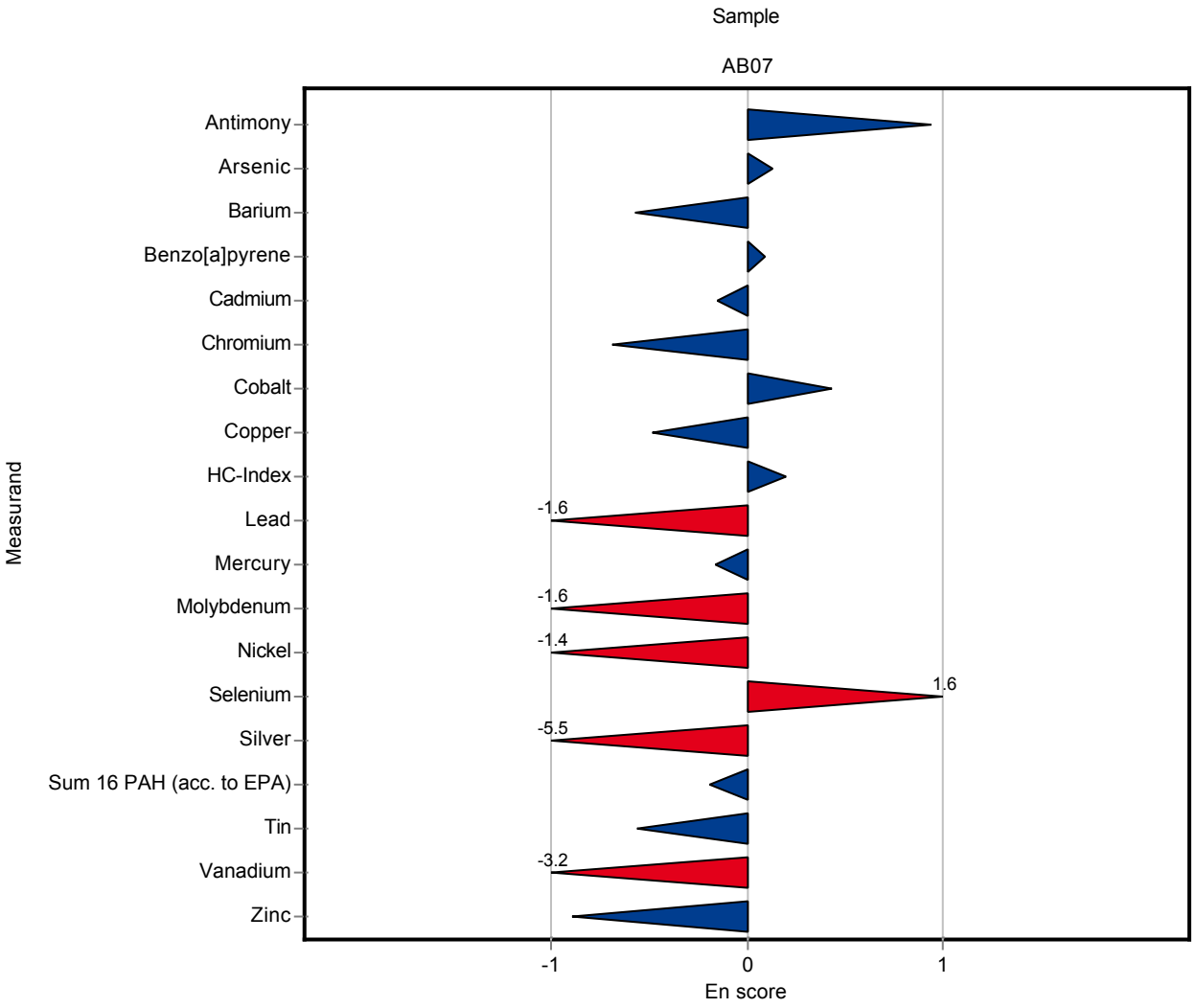
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.4874 ± 0.326	0.803	120	0.93
Arsenic	mg/kg DM	147 ± 3.34	150.47 ± 13.76	8.02	102	0.46
Barium	mg/kg DM	732 ± 51.4	665.97 ± 52.67	176	90.9	-0.38
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.077 ± 0.025	0.0244	107	0.20
Cadmium	mg/kg DM	10.9 ± 0.473	10.58 ± 0.978	1.18	97.3	-0.25
Chromium	mg/kg DM	324 ± 13.2	288.79 ± 24.57	36.6	89.2	-0.95
Cobalt	mg/kg DM	297 ± 18.9	323.61 ± 29.57	40	109	0.68
Copper	mg/kg DM	619 ± 18.8	571.12 ± 48	44.1	92.3	-1.08
HC-Index	mg/kg DM	437 ± 93.7	506 ± 170	215	116	0.32
Lead	mg/kg DM	93.8 ± 4	73.623 ± 5.99	11.7	78.5	-1.73
Mercury	mg/kg DM	0.13 ± 0.0204	0.115 ± 0.04531	0.0367	88.3	-0.42
Molybdenum	mg/kg DM	3.89 ± 0.607	2.7034 ± 0.22	1.16	69.5	-1.03
Nickel	mg/kg DM	300 ± 15.8	238.34 ± 19.8	38.3	79.5	-1.60
Selenium	mg/kg DM	2.38 ± 0.657	3.8452 ± 0.31	1.19	162	1.24
Silver	mg/kg DM	13 ± 0.967	5.4882 ± 0.479	2.05	42.1	-3.68
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.675 ± 0.238	0.644	94.1	-0.16
Tin	mg/kg DM	36.2 ± 2.3	32.617 ± 2.98	4.99	90.2	-0.71
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	10.025 ± 0.897	4.96	49.8	-2.03
Zinc	mg/kg DM	2370 ± 117	2023.6 ± 187.5	300	85.3	-1.16


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
Vanadium
Zinc
-3.7
-2.0
-2
0
2
z-score

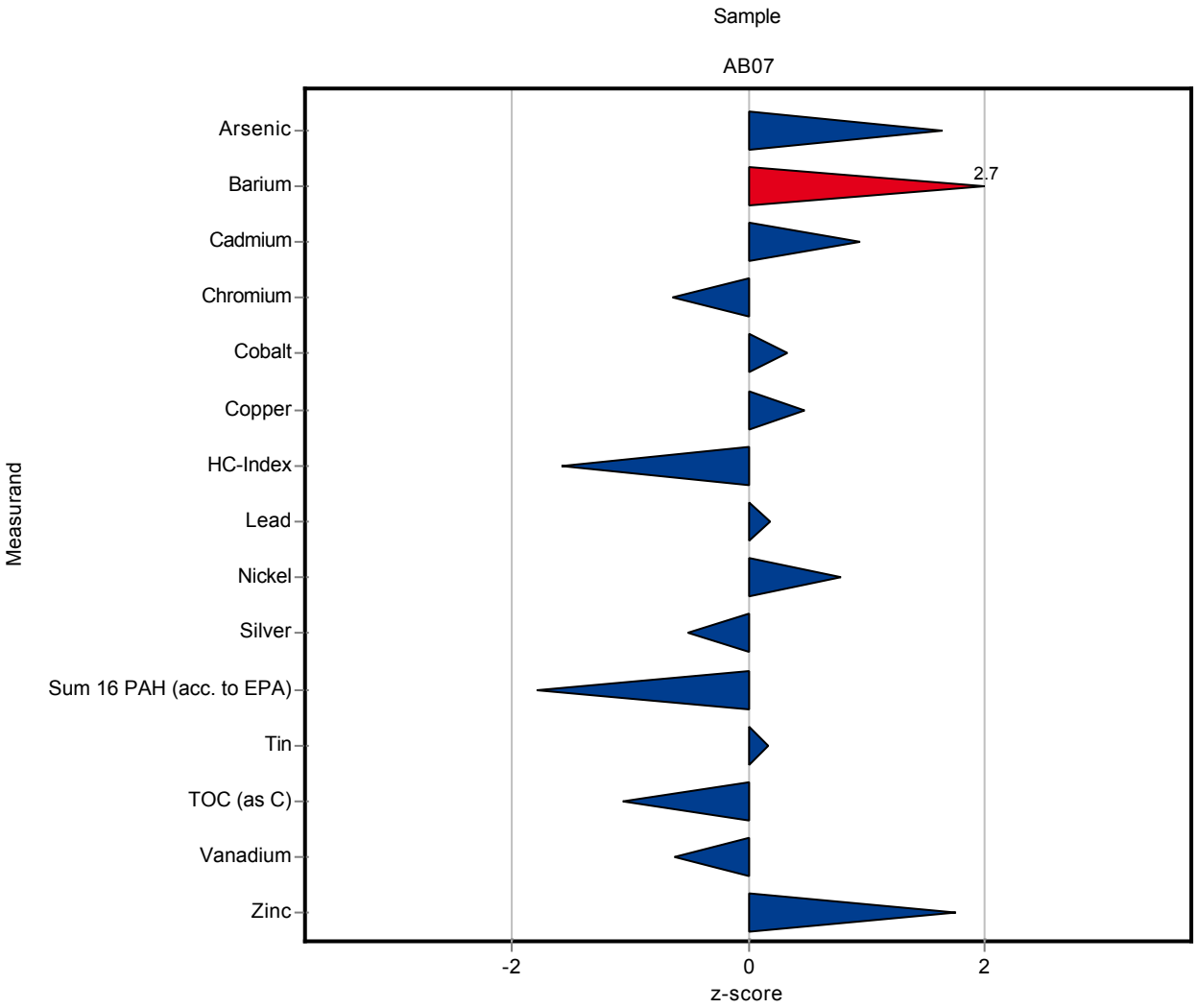
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	4.4874 ± 0.326	0.803	120	0.93
Arsenic	mg/kg DM	147 ± 3.34	150.47 ± 13.76	8.02	102	0.13
Barium	mg/kg DM	732 ± 51.4	665.97 ± 52.67	176	90.9	-0.57
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.077 ± 0.025	0.0244	107	0.10
Cadmium	mg/kg DM	10.9 ± 0.473	10.58 ± 0.978	1.18	97.3	-0.15
Chromium	mg/kg DM	324 ± 13.2	288.79 ± 24.57	36.6	89.2	-0.69
Cobalt	mg/kg DM	297 ± 18.9	323.61 ± 29.57	40	109	0.44
Copper	mg/kg DM	619 ± 18.8	571.12 ± 48	44.1	92.3	-0.48
HC-Index	mg/kg DM	437 ± 93.7	506 ± 170	215	116	0.19
Lead	mg/kg DM	93.8 ± 4	73.623 ± 5.99	11.7	78.5	-1.60
Mercury	mg/kg DM	0.13 ± 0.0204	0.115 ± 0.04531	0.0367	88.3	-0.17
Molybdenum	mg/kg DM	3.89 ± 0.607	2.7034 ± 0.22	1.16	69.5	-1.58
Nickel	mg/kg DM	300 ± 15.8	238.34 ± 19.8	38.3	79.5	-1.44
Selenium	mg/kg DM	2.38 ± 0.657	3.8452 ± 0.31	1.19	162	1.62
Silver	mg/kg DM	13 ± 0.967	5.4882 ± 0.479	2.05	42.1	-5.55
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.675 ± 0.238	0.644	94.1	-0.19
Tin	mg/kg DM	36.2 ± 2.3	32.617 ± 2.98	4.99	90.2	-0.56
TOC (as C)	mg/kg DM	41100 ± 2100	- ± -	4810	-	-
Vanadium	mg/kg DM	20.1 ± 2.56	10.025 ± 0.897	4.96	49.8	-3.22
Zinc	mg/kg DM	2370 ± 117	2023.6 ± 187.5	300	85.3	-0.89


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
Vanadium
Zinc
-1.6
-1.6
-1.4
1.6
-5.5
-3.2
-1
0
1
En score

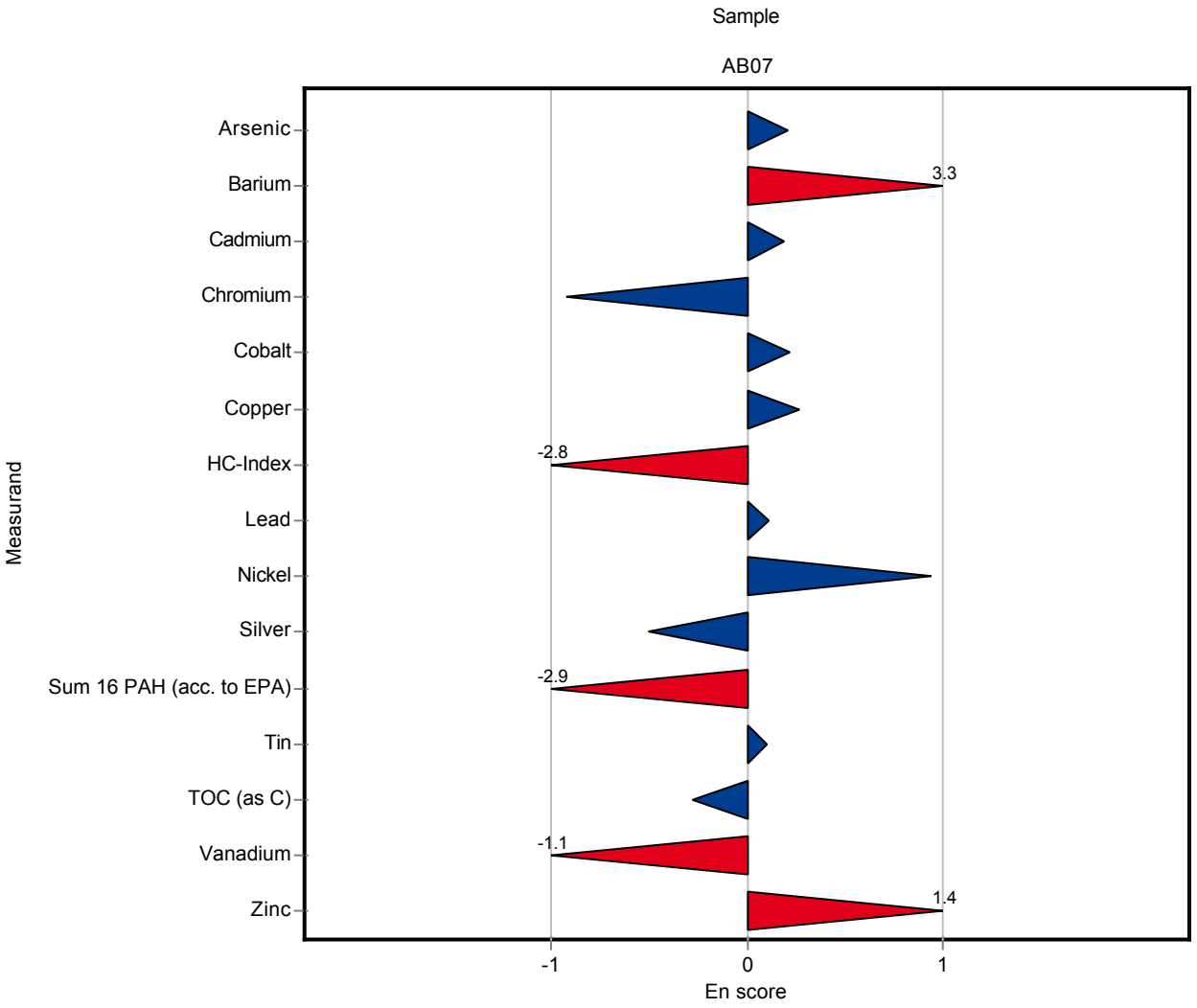
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<10 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	160 ± 31	8.02	109	1.64
Barium	mg/kg DM	732 ± 51.4	1200 ± 66	176	164	2.65
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	<0.01 (LOQ) ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	12 ± 3	1.18	110	0.95
Chromium	mg/kg DM	324 ± 13.2	300 ± 11	36.6	92.7	-0.65
Cobalt	mg/kg DM	297 ± 18.9	310 ± 30	40	105	0.34
Copper	mg/kg DM	619 ± 18.8	640 ± 39	44.1	103	0.49
HC-Index	mg/kg DM	437 ± 93.7	100 ± 38.84	215	22.9	-1.57
Lead	mg/kg DM	93.8 ± 4	96 ± 9.5	11.7	102	0.19
Mercury	mg/kg DM	0.13 ± 0.0204	<0.5 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<10 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	330 ± 14	38.3	110	0.79
Selenium	mg/kg DM	2.38 ± 0.657	<10 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	12 ± 0.92	2.05	92	-0.51
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	0.63 ± 0.13	0.644	35.4	-1.79
Tin	mg/kg DM	36.2 ± 2.3	37 ± 3.7	4.99	102	0.17
TOC (as C)	mg/kg DM	41100 ± 2100	36000 ± 9200	4810	87.7	-1.05
Vanadium	mg/kg DM	20.1 ± 2.56	17 ± 0.74	4.96	84.5	-0.63
Zinc	mg/kg DM	2370 ± 117	2900 ± 180	300	122	1.76


Sample
AB07
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
2.7
Measurand
-2
0
2
z-score

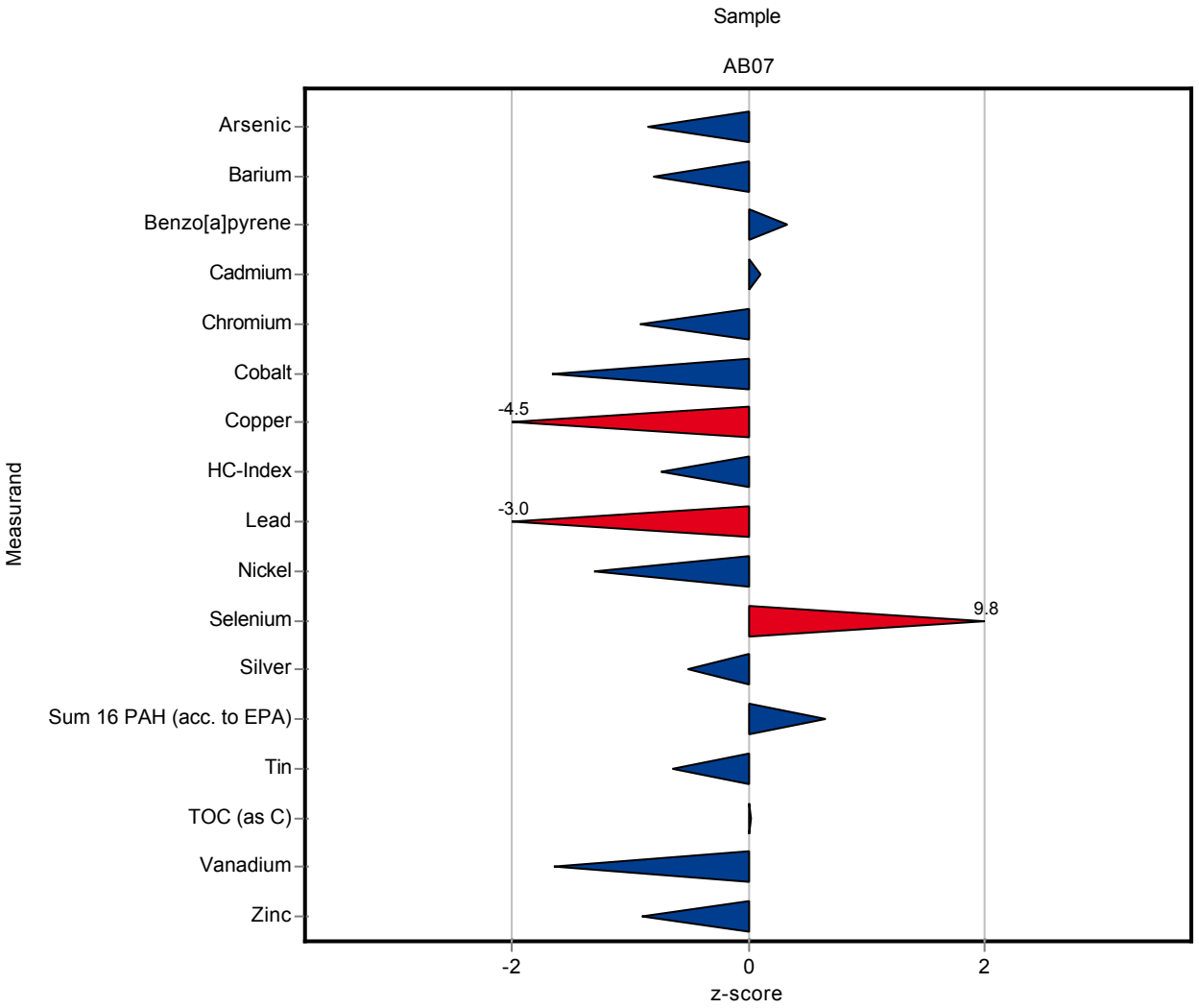
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<10 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	160 ± 31	8.02	109	0.21
Barium	mg/kg DM	732 ± 51.4	1200 ± 66	176	164	3.30
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	<0.01 (LOQ) ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	12 ± 3	1.18	110	0.19
Chromium	mg/kg DM	324 ± 13.2	300 ± 11	36.6	92.7	-0.92
Cobalt	mg/kg DM	297 ± 18.9	310 ± 30	40	105	0.21
Copper	mg/kg DM	619 ± 18.8	640 ± 39	44.1	103	0.27
HC-Index	mg/kg DM	437 ± 93.7	100 ± 38.84	215	22.9	-2.77
Lead	mg/kg DM	93.8 ± 4	96 ± 9.5	11.7	102	0.11
Mercury	mg/kg DM	0.13 ± 0.0204	<0.5 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<10 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	330 ± 14	38.3	110	0.94
Selenium	mg/kg DM	2.38 ± 0.657	<10 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	12 ± 0.92	2.05	92	-0.50
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	0.63 ± 0.13	0.644	35.4	-2.92
Tin	mg/kg DM	36.2 ± 2.3	37 ± 3.7	4.99	102	0.11
TOC (as C)	mg/kg DM	41100 ± 2100	36000 ± 9200	4810	87.7	-0.27
Vanadium	mg/kg DM	20.1 ± 2.56	17 ± 0.74	4.96	84.5	-1.05
Zinc	mg/kg DM	2370 ± 117	2900 ± 180	300	122	1.39


Sample
AB07
Measurand
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
3.3
-2.8
-2.9
-1.1
1.4
-1
0
1
En score

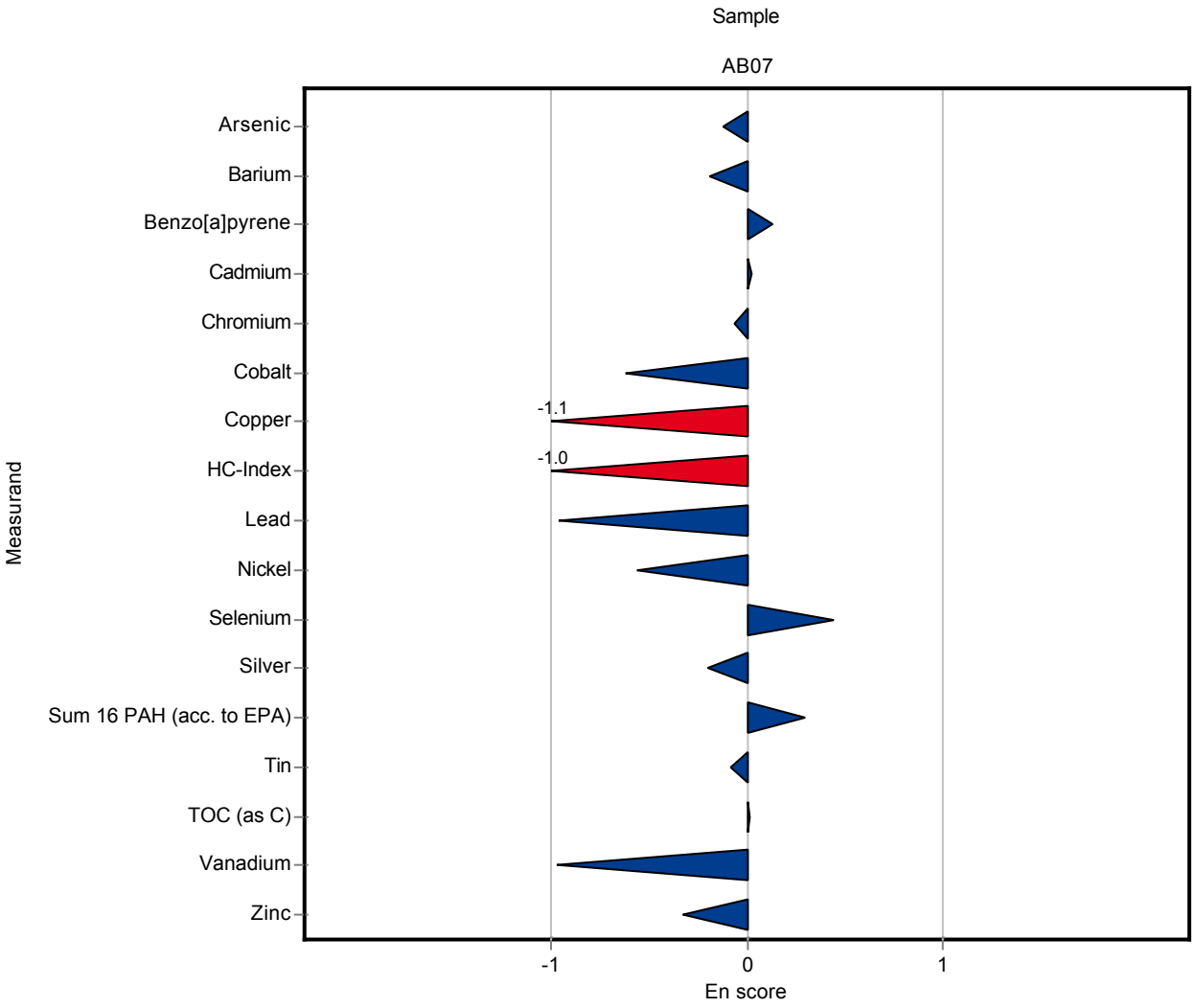
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<3 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	140 ± 27	8.02	95.4	-0.85
Barium	mg/kg DM	732 ± 51.4	590 ± 384	176	80.5	-0.81
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.08 ± 0.03	0.0244	111	0.33
Cadmium	mg/kg DM	10.9 ± 0.473	11 ± 2.4	1.18	101	0.10
Chromium	mg/kg DM	324 ± 13.2	290 ± 276	36.6	89.6	-0.92
Cobalt	mg/kg DM	297 ± 18.9	230 ± 53	40	77.6	-1.66
Copper	mg/kg DM	619 ± 18.8	420 ± 88	44.1	67.9	-4.50
HC-Index	mg/kg DM	437 ± 93.7	280 ± 60	215	64	-0.73
Lead	mg/kg DM	93.8 ± 4	59 ± 18	11.7	62.9	-2.98
Mercury	mg/kg DM	0.13 ± 0.0204	<0.2 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<3 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	250 ± 44	38.3	83.4	-1.30
Selenium	mg/kg DM	2.38 ± 0.657	14 ± 13	1.19	589	9.81
Silver	mg/kg DM	13 ± 0.967	12 ± 2.6	2.05	92	-0.51
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.2 ± 0.69	0.644	124	0.65
Tin	mg/kg DM	36.2 ± 2.3	33 ± 19.5	4.99	91.2	-0.64
TOC (as C)	mg/kg DM	41100 ± 2100	41200 ± 5500	4810	100	0.03
Vanadium	mg/kg DM	20.1 ± 2.56	12 ± 4	4.96	59.7	-1.64
Zinc	mg/kg DM	2370 ± 117	2100 ± 414	300	88.5	-0.91


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-4.5
-3.0
9.8
-2
0
2
z-score

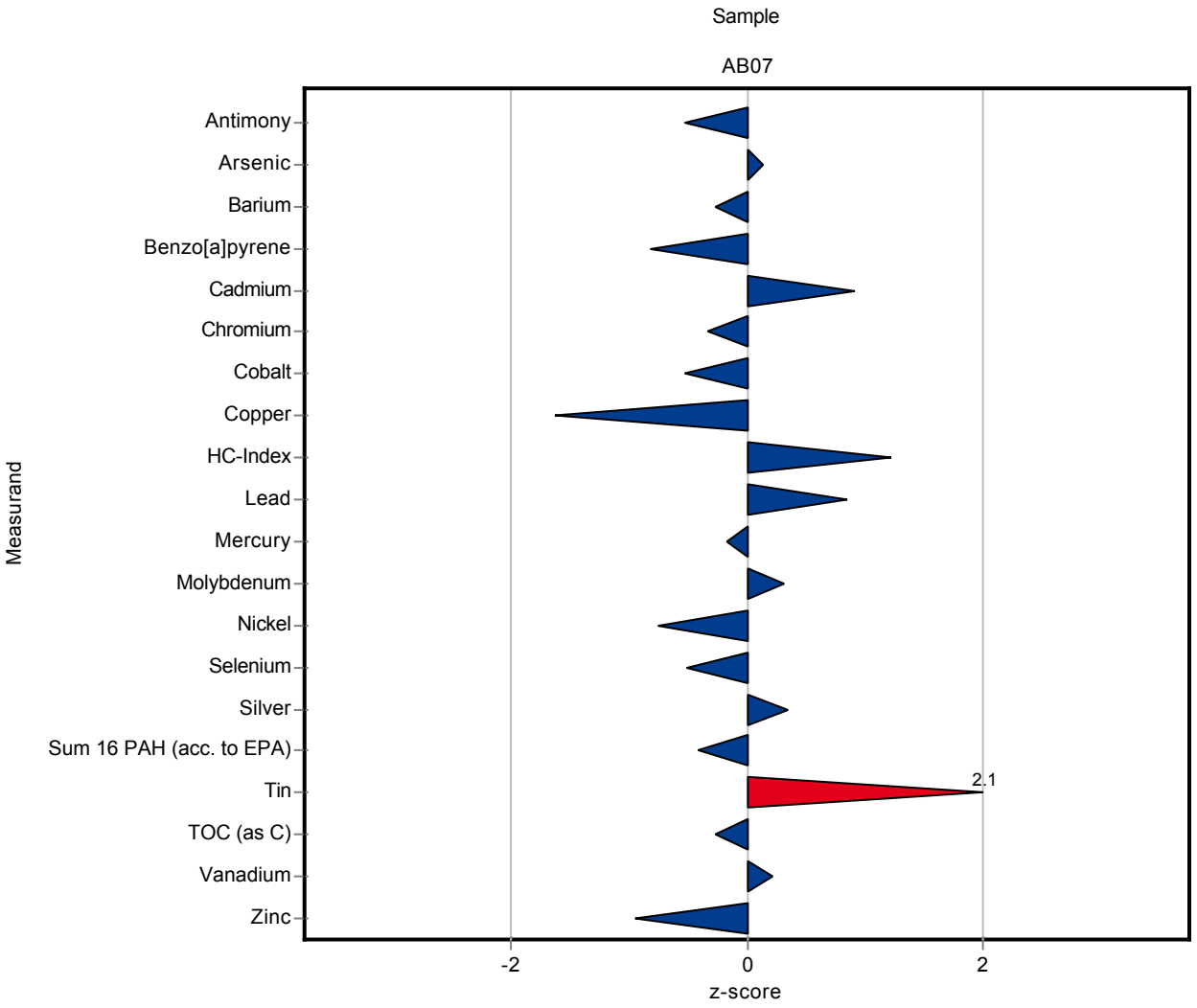
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<3 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	140 ± 27	8.02	95.4	-0.13
Barium	mg/kg DM	732 ± 51.4	590 ± 384	176	80.5	-0.18
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.08 ± 0.03	0.0244	111	0.13
Cadmium	mg/kg DM	10.9 ± 0.473	11 ± 2.4	1.18	101	0.03
Chromium	mg/kg DM	324 ± 13.2	290 ± 276	36.6	89.6	-0.06
Cobalt	mg/kg DM	297 ± 18.9	230 ± 53	40	77.6	-0.62
Copper	mg/kg DM	619 ± 18.8	420 ± 88	44.1	67.9	-1.12
HC-Index	mg/kg DM	437 ± 93.7	280 ± 60	215	64	-1.03
Lead	mg/kg DM	93.8 ± 4	59 ± 18	11.7	62.9	-0.96
Mercury	mg/kg DM	0.13 ± 0.0204	<0.2 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	<3 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	250 ± 44	38.3	83.4	-0.56
Selenium	mg/kg DM	2.38 ± 0.657	14 ± 13	1.19	589	0.45
Silver	mg/kg DM	13 ± 0.967	12 ± 2.6	2.05	92	-0.20
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.2 ± 0.69	0.644	124	0.30
Tin	mg/kg DM	36.2 ± 2.3	33 ± 19.5	4.99	91.2	-0.08
TOC (as C)	mg/kg DM	41100 ± 2100	41200 ± 5500	4810	100	0.01
Vanadium	mg/kg DM	20.1 ± 2.56	12 ± 4	4.96	59.7	-0.97
Zinc	mg/kg DM	2370 ± 117	2100 ± 414	300	88.5	-0.33


Sample
AB07
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-1.1
-1.0
Measurand
-1
0
1
En score

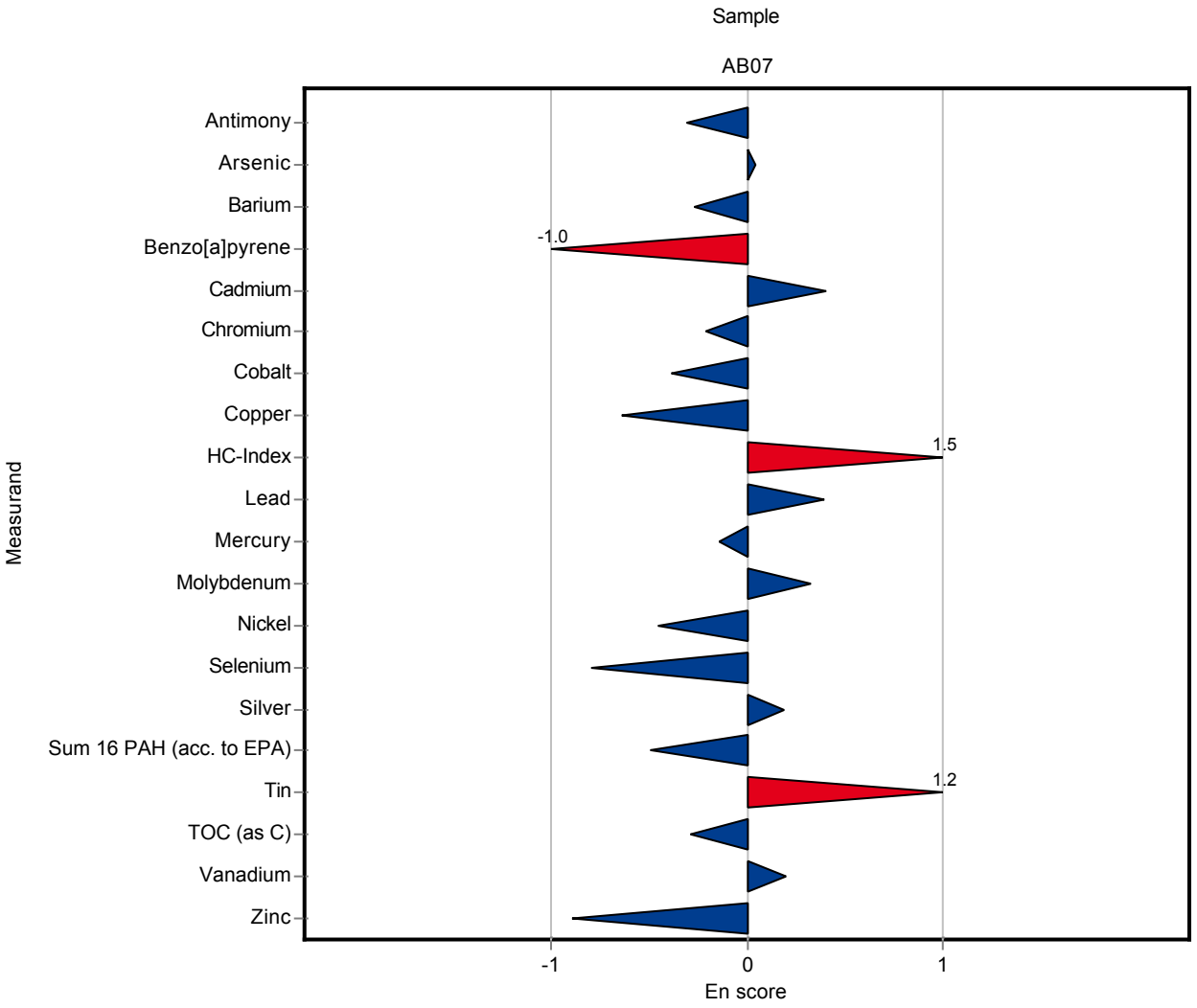
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.319 ± 0.631	0.803	88.8	-0.52
Arsenic	mg/kg DM	147 ± 3.34	147.86 ± 11.95	8.02	101	0.13
Barium	mg/kg DM	732 ± 51.4	684.53 ± 84.88	176	93.5	-0.27
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.052 ± 0.008	0.0244	72.2	-0.82
Cadmium	mg/kg DM	10.9 ± 0.473	11.96 ± 1.315	1.18	110	0.92
Chromium	mg/kg DM	324 ± 13.2	311.8 ± 28.06	36.6	96.3	-0.32
Cobalt	mg/kg DM	297 ± 18.9	275.79 ± 25.37	40	93	-0.52
Copper	mg/kg DM	619 ± 18.8	546.52 ± 55.75	44.1	88.3	-1.63
HC-Index	mg/kg DM	437 ± 93.7	699.75 ± 76.97	215	160	1.22
Lead	mg/kg DM	93.8 ± 4	103.7 ± 12.44	11.7	111	0.85
Mercury	mg/kg DM	0.13 ± 0.0204	0.124 ± 0.019	0.0367	95.2	-0.17
Molybdenum	mg/kg DM	3.89 ± 0.607	4.262 ± 0.49	1.16	110	0.32
Nickel	mg/kg DM	300 ± 15.8	271.21 ± 30.38	38.3	90.5	-0.74
Selenium	mg/kg DM	2.38 ± 0.657	1.782 ± 0.184	1.19	75	-0.50
Silver	mg/kg DM	13 ± 0.967	13.75 ± 1.802	2.05	105	0.34
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.512 ± 0.227	0.644	85	-0.42
Tin	mg/kg DM	36.2 ± 2.3	46.53 ± 4.141	4.99	129	2.08
TOC (as C)	mg/kg DM	41100 ± 2100	39800 ± 1990	4810	96.9	-0.26
Vanadium	mg/kg DM	20.1 ± 2.56	21.2 ± 2.395	4.96	105	0.22
Zinc	mg/kg DM	2370 ± 117	2085.5 ± 150.16	300	87.9	-0.95


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
2.1
-2
0
2
z-score

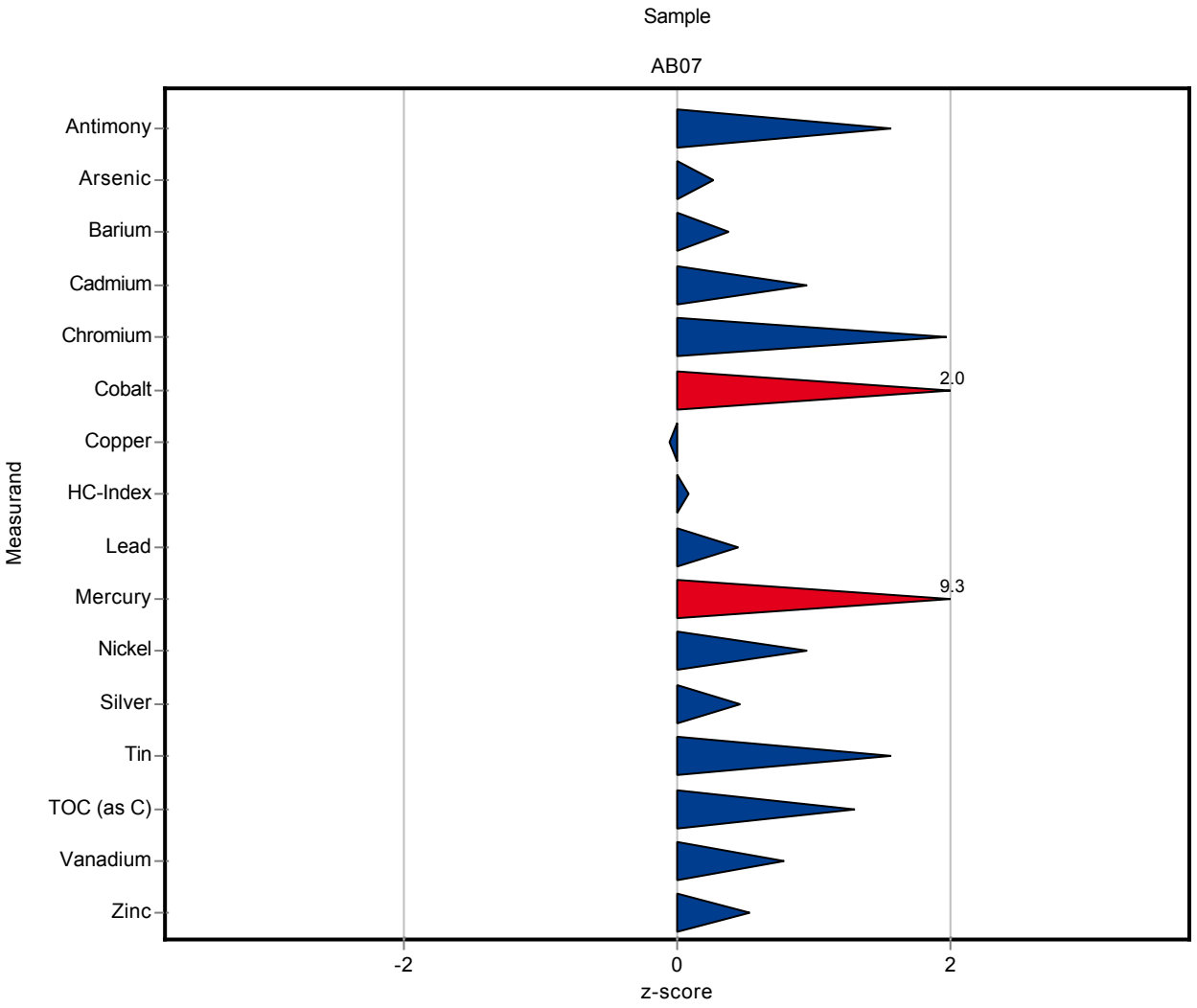
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	3.319 ± 0.631	0.803	88.8	-0.31
Arsenic	mg/kg DM	147 ± 3.34	147.86 ± 11.95	8.02	101	0.04
Barium	mg/kg DM	732 ± 51.4	684.53 ± 84.88	176	93.5	-0.27
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.052 ± 0.008	0.0244	72.2	-1.01
Cadmium	mg/kg DM	10.9 ± 0.473	11.96 ± 1.315	1.18	110	0.41
Chromium	mg/kg DM	324 ± 13.2	311.8 ± 28.06	36.6	96.3	-0.21
Cobalt	mg/kg DM	297 ± 18.9	275.79 ± 25.37	40	93	-0.38
Copper	mg/kg DM	619 ± 18.8	546.52 ± 55.75	44.1	88.3	-0.64
HC-Index	mg/kg DM	437 ± 93.7	699.75 ± 76.97	215	160	1.46
Lead	mg/kg DM	93.8 ± 4	103.7 ± 12.44	11.7	111	0.39
Mercury	mg/kg DM	0.13 ± 0.0204	0.124 ± 0.019	0.0367	95.2	-0.15
Molybdenum	mg/kg DM	3.89 ± 0.607	4.262 ± 0.49	1.16	110	0.32
Nickel	mg/kg DM	300 ± 15.8	271.21 ± 30.38	38.3	90.5	-0.45
Selenium	mg/kg DM	2.38 ± 0.657	1.782 ± 0.184	1.19	75	-0.79
Silver	mg/kg DM	13 ± 0.967	13.75 ± 1.802	2.05	105	0.19
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.512 ± 0.227	0.644	85	-0.49
Tin	mg/kg DM	36.2 ± 2.3	46.53 ± 4.141	4.99	129	1.20
TOC (as C)	mg/kg DM	41100 ± 2100	39800 ± 1990	4810	96.9	-0.28
Vanadium	mg/kg DM	20.1 ± 2.56	21.2 ± 2.395	4.96	105	0.20
Zinc	mg/kg DM	2370 ± 117	2085.5 ± 150.16	300	87.9	-0.89


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-1.0
1.5
1.2
-1
0
1
En score

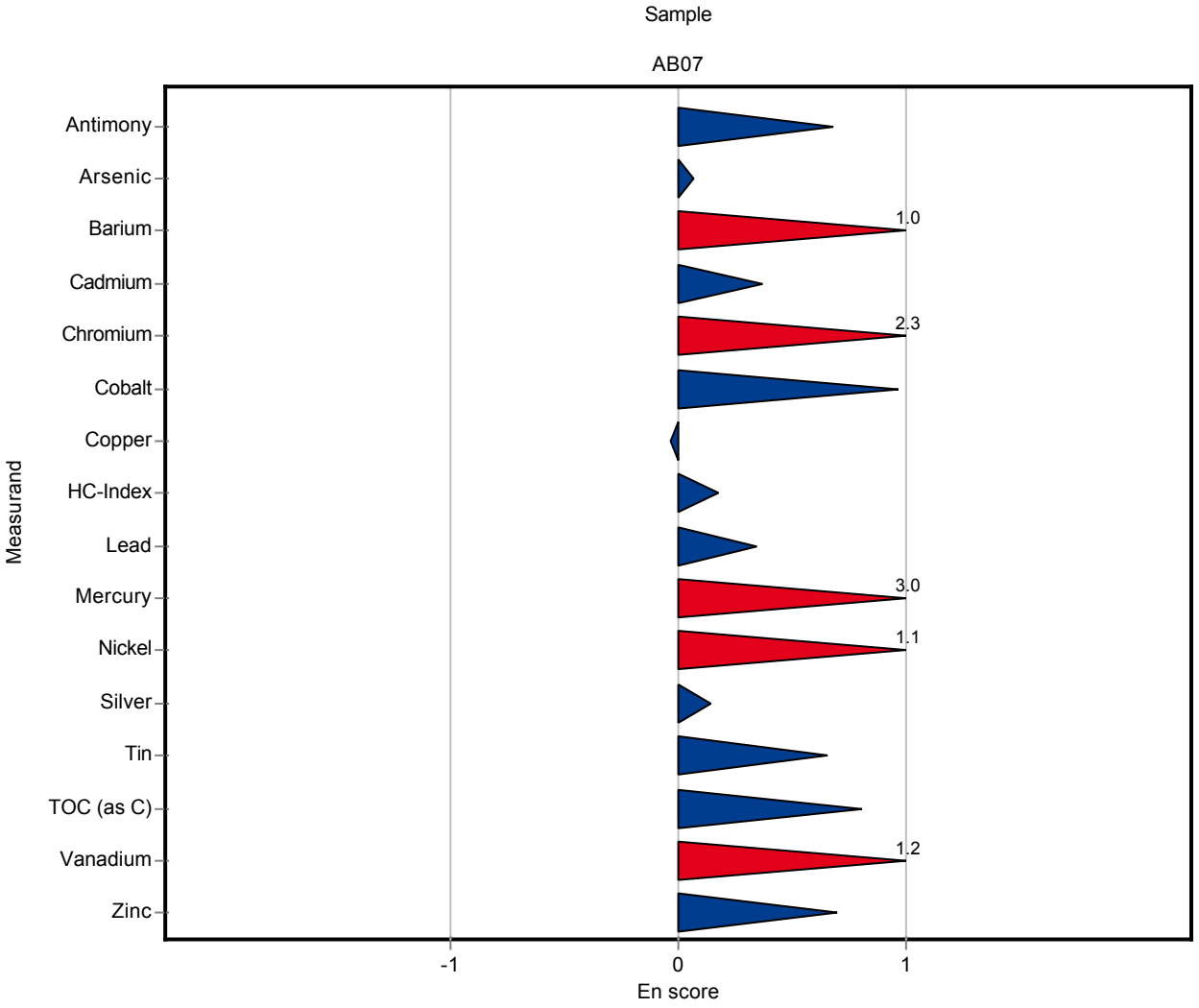
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	5 ± 0.9	0.803	134	1.57
Arsenic	mg/kg DM	147 ± 3.34	149 ± 16.2	8.02	101	0.27
Barium	mg/kg DM	732 ± 51.4	798 ± 18.2	176	109	0.37
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	12 ± 1.5	1.18	110	0.95
Chromium	mg/kg DM	324 ± 13.2	396 ± 14.4	36.6	122	1.97
Cobalt	mg/kg DM	297 ± 18.9	378 ± 41.3	40	127	2.04
Copper	mg/kg DM	619 ± 18.8	616 ± 40.7	44.1	99.6	-0.06
HC-Index	mg/kg DM	437 ± 93.7	456 ± 22.8	215	104	0.09
Lead	mg/kg DM	93.8 ± 4	99 ± 7.36	11.7	106	0.45
Mercury	mg/kg DM	0.13 ± 0.0204	0.47 ± 0.055	0.0367	361	9.25
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	336 ± 14.9	38.3	112	0.95
Selenium	mg/kg DM	2.38 ± 0.657	<1 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	14 ± 3.3	2.05	107	0.47
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	44 ± 5.9	4.99	122	1.57
TOC (as C)	mg/kg DM	41100 ± 2100	47300 ± 3700	4810	115	1.30
Vanadium	mg/kg DM	20.1 ± 2.56	24 ± 0.9	4.96	119	0.78
Zinc	mg/kg DM	2370 ± 117	2533 ± 100	300	107	0.54


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Silver
Tin
TOC (as C)
Vanadium
Zinc
Measurand
2.0
9.3
-2
0
2
z-score

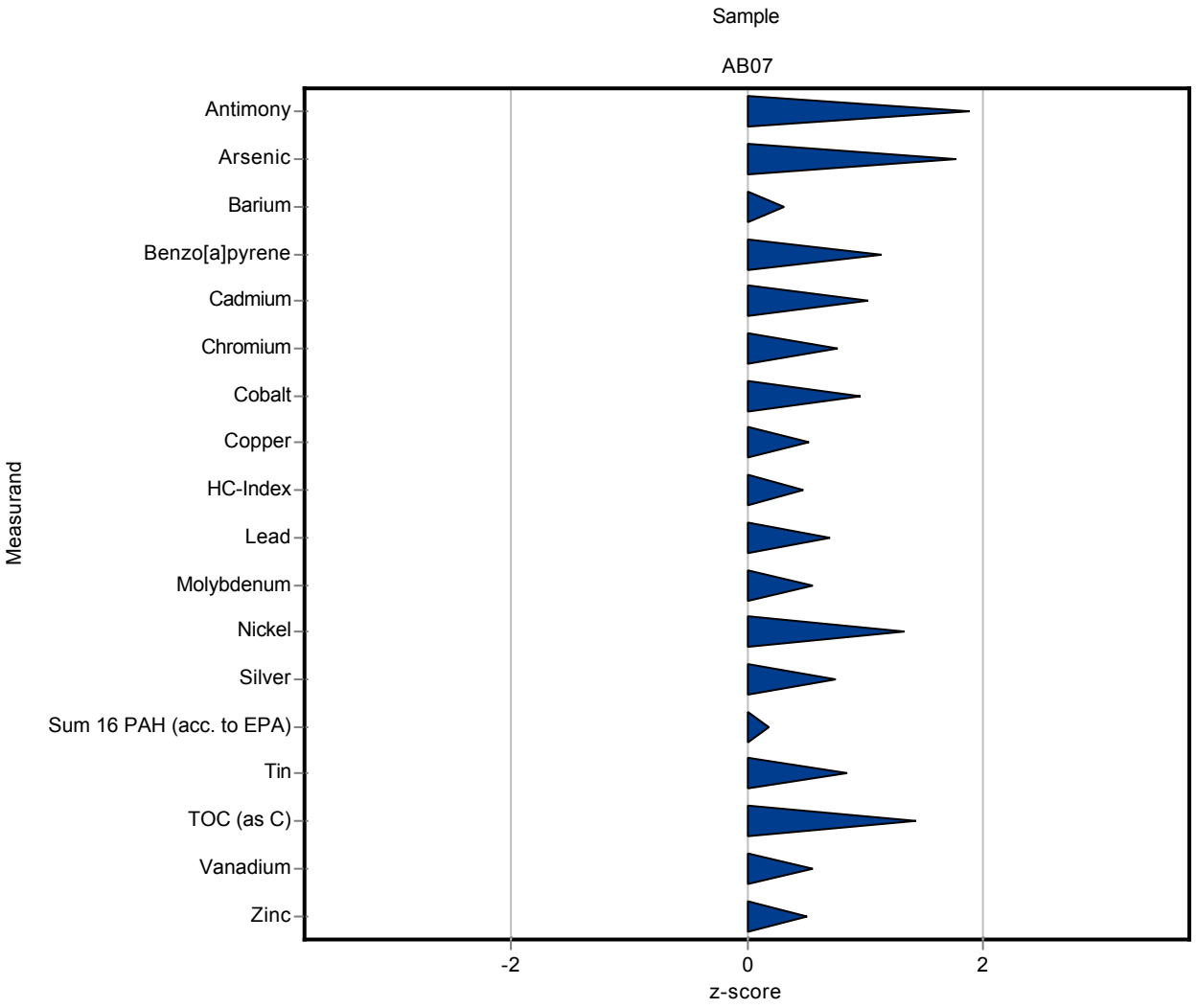
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	5 ± 0.9	0.803	134	0.68
Arsenic	mg/kg DM	147 ± 3.34	149 ± 16.2	8.02	101	0.07
Barium	mg/kg DM	732 ± 51.4	798 ± 18.2	176	109	1.04
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	12 ± 1.5	1.18	110	0.37
Chromium	mg/kg DM	324 ± 13.2	396 ± 14.4	36.6	122	2.28
Cobalt	mg/kg DM	297 ± 18.9	378 ± 41.3	40	127	0.96
Copper	mg/kg DM	619 ± 18.8	616 ± 40.7	44.1	99.6	-0.03
HC-Index	mg/kg DM	437 ± 93.7	456 ± 22.8	215	104	0.18
Lead	mg/kg DM	93.8 ± 4	99 ± 7.36	11.7	106	0.34
Mercury	mg/kg DM	0.13 ± 0.0204	0.47 ± 0.055	0.0367	361	3.04
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	336 ± 14.9	38.3	112	1.08
Selenium	mg/kg DM	2.38 ± 0.657	<1 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	14 ± 3.3	2.05	107	0.14
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	44 ± 5.9	4.99	122	0.65
TOC (as C)	mg/kg DM	41100 ± 2100	47300 ± 3700	4810	115	0.81
Vanadium	mg/kg DM	20.1 ± 2.56	24 ± 0.9	4.96	119	1.24
Zinc	mg/kg DM	2370 ± 117	2533 ± 100	300	107	0.69


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Silver
Tin
TOC (as C)
Vanadium
Zinc
1.0
2.3
3.0
1.1
1.2
Measurand
-1
0
1
En score

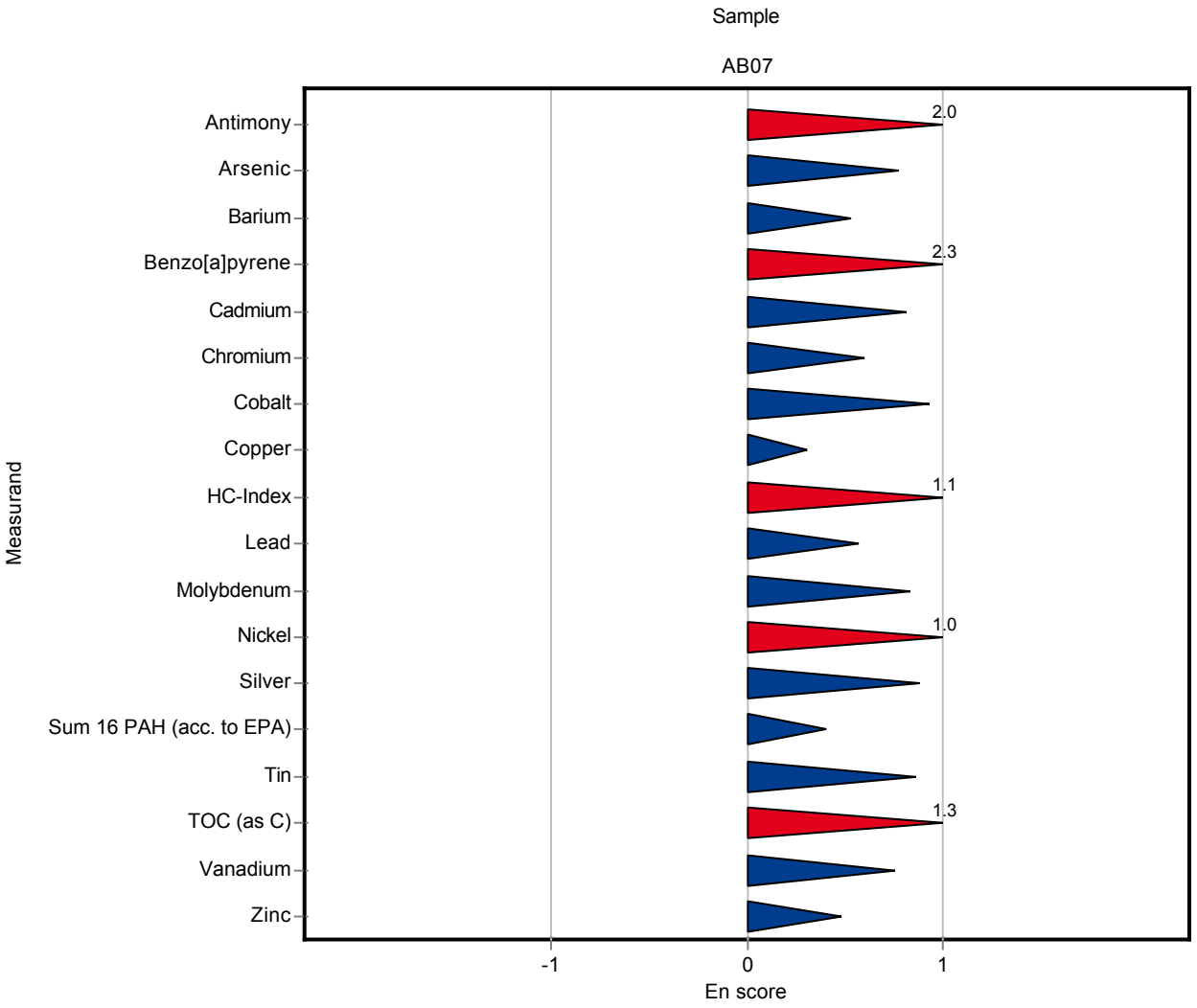
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	5.25 ± 0.299	0.803	140	1.88
Arsenic	mg/kg DM	147 ± 3.34	161 ± 9.02	8.02	110	1.77
Barium	mg/kg DM	732 ± 51.4	788 ± 45.7	176	108	0.32
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.1 ± 0.00081	0.0244	139	1.15
Cadmium	mg/kg DM	10.9 ± 0.473	12.1 ± 0.714	1.18	111	1.04
Chromium	mg/kg DM	324 ± 13.2	352 ± 22.9	36.6	109	0.77
Cobalt	mg/kg DM	297 ± 18.9	335 ± 18.4	40	113	0.96
Copper	mg/kg DM	619 ± 18.8	642 ± 37.2	44.1	104	0.53
HC-Index	mg/kg DM	437 ± 93.7	540 ± 4.37	215	123	0.48
Lead	mg/kg DM	93.8 ± 4	102 ± 6.94	11.7	109	0.70
Mercury	mg/kg DM	0.13 ± 0.0204	<0.3 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	4.54 ± 0.245	1.16	117	0.56
Nickel	mg/kg DM	300 ± 15.8	351 ± 23.9	38.3	117	1.34
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	14.6 ± 0.745	2.05	112	0.76
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.9 ± 0.0154	0.644	107	0.19
Tin	mg/kg DM	36.2 ± 2.3	40.4 ± 2.18	4.99	112	0.85
TOC (as C)	mg/kg DM	41100 ± 2100	48000 ± 2400	4810	117	1.44
Vanadium	mg/kg DM	20.1 ± 2.56	22.9 ± 1.35	4.96	114	0.56
Zinc	mg/kg DM	2370 ± 117	2524 ± 146	300	106	0.51


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
Measurand
-2
0
2
z-score

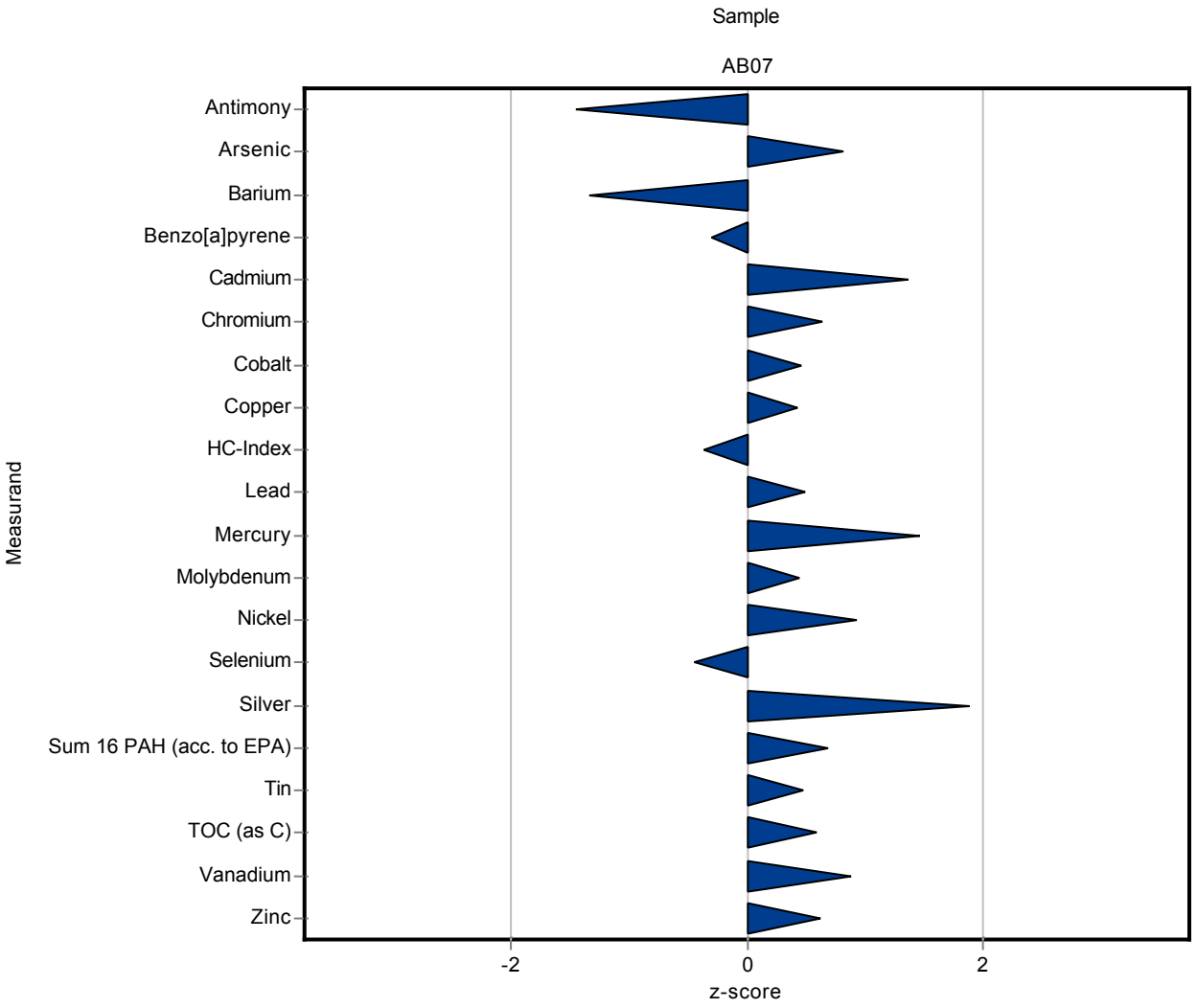
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	5.25 ± 0.299	0.803	140	1.99
Arsenic	mg/kg DM	147 ± 3.34	161 ± 9.02	8.02	110	0.77
Barium	mg/kg DM	732 ± 51.4	788 ± 45.7	176	108	0.53
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.1 ± 0.00081	0.0244	139	2.34
Cadmium	mg/kg DM	10.9 ± 0.473	12.1 ± 0.714	1.18	111	0.81
Chromium	mg/kg DM	324 ± 13.2	352 ± 22.9	36.6	109	0.59
Cobalt	mg/kg DM	297 ± 18.9	335 ± 18.4	40	113	0.93
Copper	mg/kg DM	619 ± 18.8	642 ± 37.2	44.1	104	0.30
HC-Index	mg/kg DM	437 ± 93.7	540 ± 4.37	215	123	1.09
Lead	mg/kg DM	93.8 ± 4	102 ± 6.94	11.7	109	0.57
Mercury	mg/kg DM	0.13 ± 0.0204	<0.3 (LOQ) ± -	0.0367	-	-
Molybdenum	mg/kg DM	3.89 ± 0.607	4.54 ± 0.245	1.16	117	0.83
Nickel	mg/kg DM	300 ± 15.8	351 ± 23.9	38.3	117	1.02
Selenium	mg/kg DM	2.38 ± 0.657	<5 (LOQ) ± -	1.19	-	-
Silver	mg/kg DM	13 ± 0.967	14.6 ± 0.745	2.05	112	0.88
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.9 ± 0.0154	0.644	107	0.40
Tin	mg/kg DM	36.2 ± 2.3	40.4 ± 2.18	4.99	112	0.86
TOC (as C)	mg/kg DM	41100 ± 2100	48000 ± 2400	4810	117	1.32
Vanadium	mg/kg DM	20.1 ± 2.56	22.9 ± 1.35	4.96	114	0.75
Zinc	mg/kg DM	2370 ± 117	2524 ± 146	300	106	0.48


Sample
AB07
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Molybdenum
Nickel
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
2.0
2.3
1.1
1.0
1.3
Measurand
-1
0
1
En score

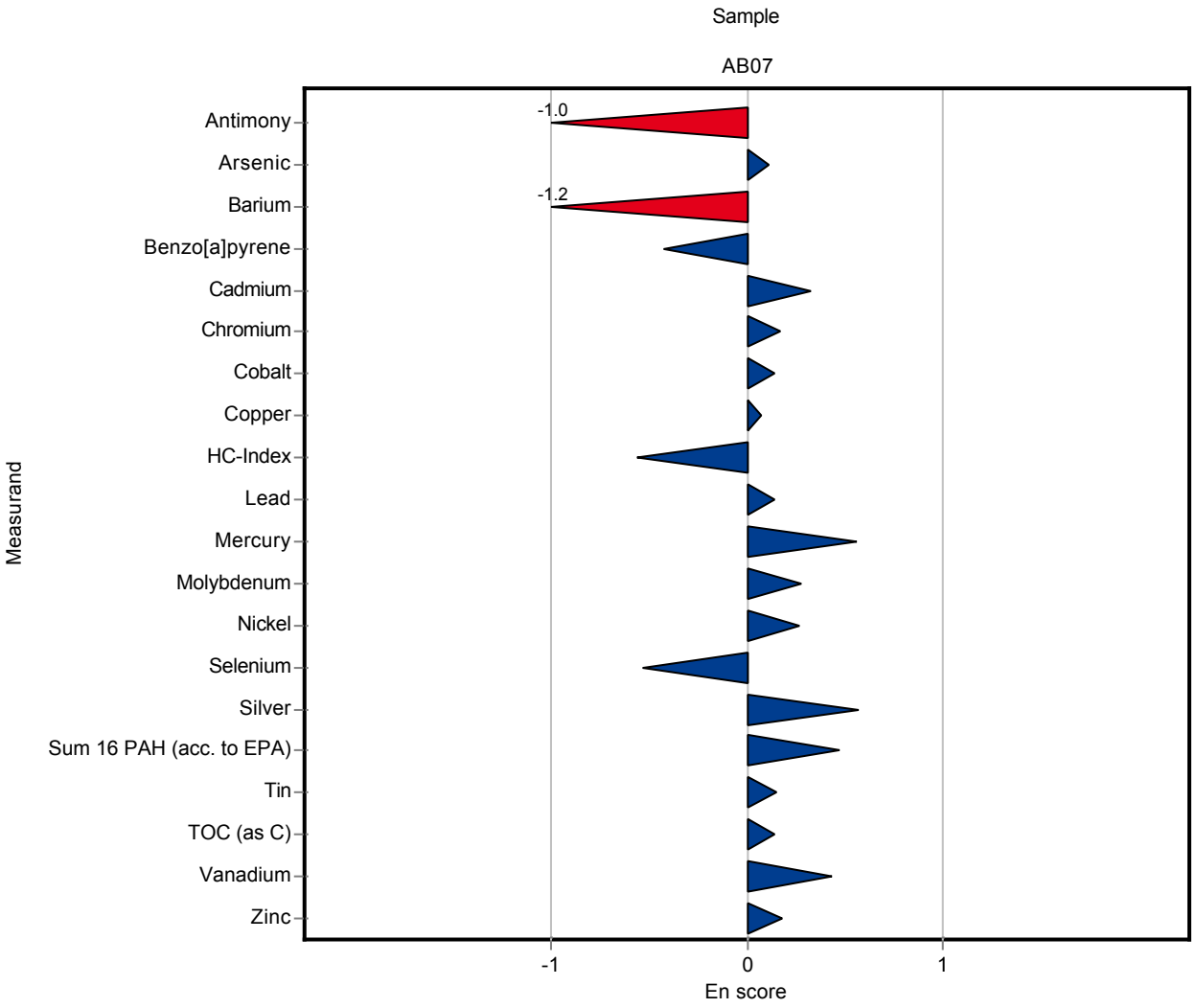
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	2.57 ± 0.514	0.803	68.8	-1.45
Arsenic	mg/kg DM	147 ± 3.34	153.4 ± 30.68	8.02	104	0.82
Barium	mg/kg DM	732 ± 51.4	496.1 ± 99.22	176	67.7	-1.34
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.0647 ± 0.00647	0.0244	89.8	-0.30
Cadmium	mg/kg DM	10.9 ± 0.473	12.5 ± 2.5	1.18	115	1.37
Chromium	mg/kg DM	324 ± 13.2	347.2 ± 69.44	36.6	107	0.64
Cobalt	mg/kg DM	297 ± 18.9	314.8 ± 62.96	40	106	0.46
Copper	mg/kg DM	619 ± 18.8	637.3 ± 127.46	44.1	103	0.42
HC-Index	mg/kg DM	437 ± 93.7	358.25 ± 53.7375	215	81.9	-0.37
Lead	mg/kg DM	93.8 ± 4	99.6 ± 19.92	11.7	106	0.50
Mercury	mg/kg DM	0.13 ± 0.0204	0.184 ± 0.0473	0.0367	141	1.46
Molybdenum	mg/kg DM	3.89 ± 0.607	4.4 ± 0.88	1.16	113	0.44
Nickel	mg/kg DM	300 ± 15.8	335.6 ± 67.12	38.3	112	0.94
Selenium	mg/kg DM	2.38 ± 0.657	1.85 ± 0.37	1.19	77.8	-0.45
Silver	mg/kg DM	13 ± 0.967	16.9 ± 3.38	2.05	130	1.88
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.2232 ± 0.44464	0.644	125	0.69
Tin	mg/kg DM	36.2 ± 2.3	38.6 ± 7.72	4.99	107	0.49
TOC (as C)	mg/kg DM	41100 ± 2100	43900 ± 9658	4810	107	0.59
Vanadium	mg/kg DM	20.1 ± 2.56	24.5 ± 4.9	4.96	122	0.89
Zinc	mg/kg DM	2370 ± 117	2559.6 ± 511.92	300	108	0.62


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-2
0
2
z-score

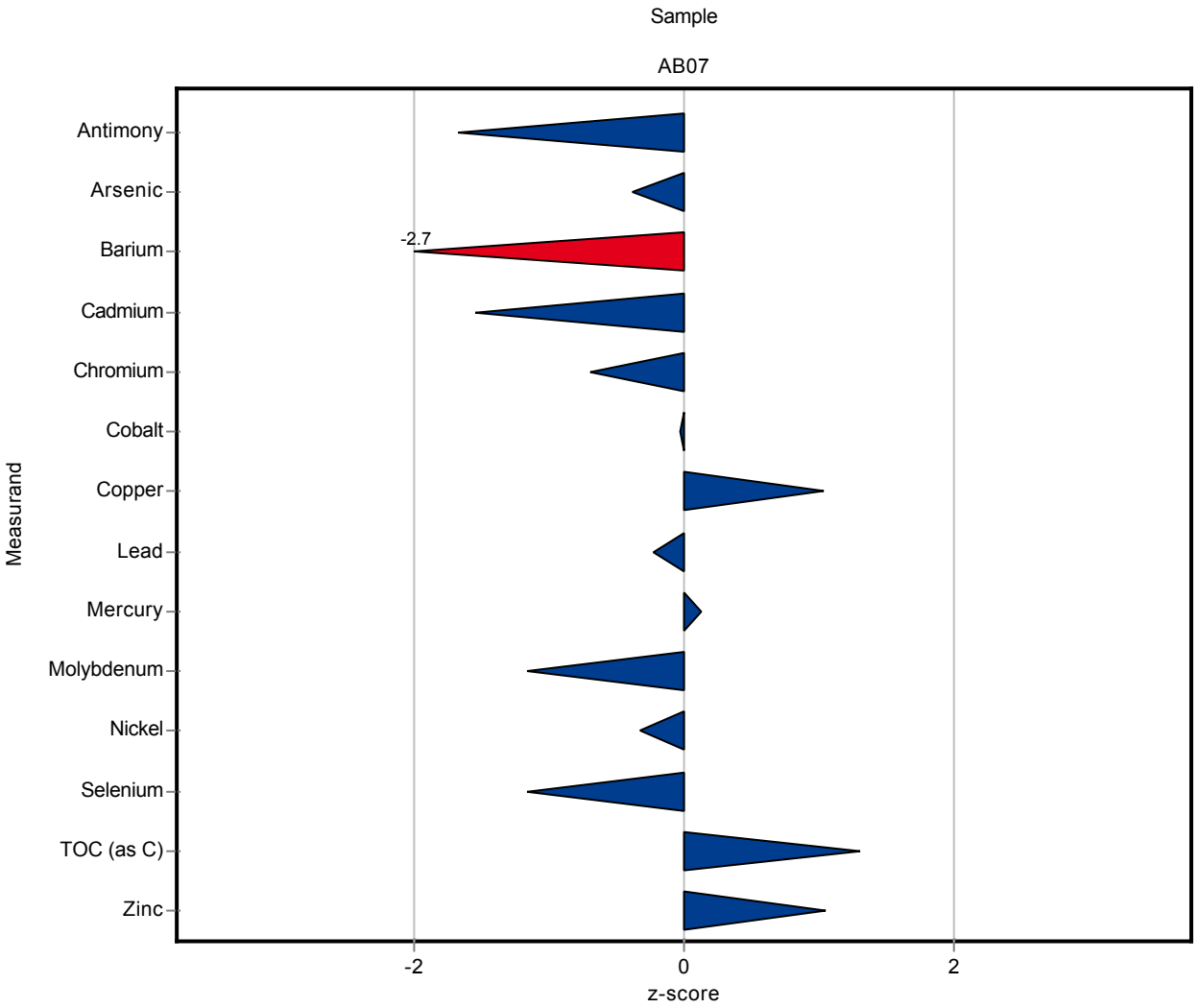
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	2.57 ± 0.514	0.803	68.8	-1.03
Arsenic	mg/kg DM	147 ± 3.34	153.4 ± 30.68	8.02	104	0.11
Barium	mg/kg DM	732 ± 51.4	496.1 ± 99.22	176	67.7	-1.15
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.0647 ± 0.00647	0.0244	89.8	-0.42
Cadmium	mg/kg DM	10.9 ± 0.473	12.5 ± 2.5	1.18	115	0.32
Chromium	mg/kg DM	324 ± 13.2	347.2 ± 69.44	36.6	107	0.17
Cobalt	mg/kg DM	297 ± 18.9	314.8 ± 62.96	40	106	0.14
Copper	mg/kg DM	619 ± 18.8	637.3 ± 127.46	44.1	103	0.07
HC-Index	mg/kg DM	437 ± 93.7	358.25 ± 53.7375	215	81.9	-0.56
Lead	mg/kg DM	93.8 ± 4	99.6 ± 19.92	11.7	106	0.14
Mercury	mg/kg DM	0.13 ± 0.0204	0.184 ± 0.0473	0.0367	141	0.56
Molybdenum	mg/kg DM	3.89 ± 0.607	4.4 ± 0.88	1.16	113	0.27
Nickel	mg/kg DM	300 ± 15.8	335.6 ± 67.12	38.3	112	0.27
Selenium	mg/kg DM	2.38 ± 0.657	1.85 ± 0.37	1.19	77.8	-0.53
Silver	mg/kg DM	13 ± 0.967	16.9 ± 3.38	2.05	130	0.56
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	2.2232 ± 0.44464	0.644	125	0.47
Tin	mg/kg DM	36.2 ± 2.3	38.6 ± 7.72	4.99	107	0.15
TOC (as C)	mg/kg DM	41100 ± 2100	43900 ± 9658	4810	107	0.15
Vanadium	mg/kg DM	20.1 ± 2.56	24.5 ± 4.9	4.96	122	0.43
Zinc	mg/kg DM	2370 ± 117	2559.6 ± 511.92	300	108	0.18


Sample
AB07
Measurand
Antimony
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
-1.0
-1.2
-1
0
1
En score

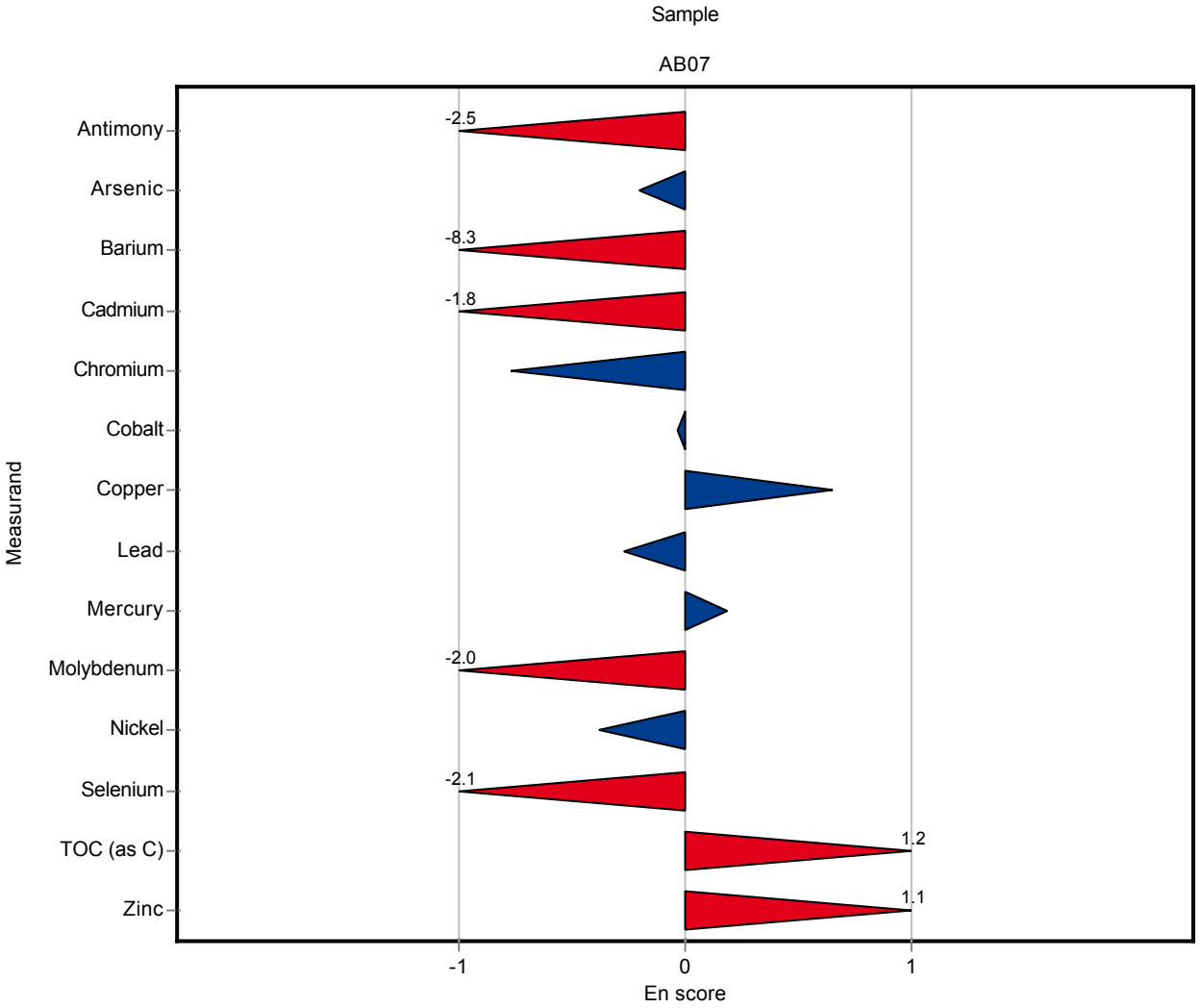
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	2.4 ± 0.13	0.803	64.2	-1.67
Arsenic	mg/kg DM	147 ± 3.34	143.79 ± 7.19	8.02	97.9	-0.38
Barium	mg/kg DM	732 ± 51.4	257.79 ± 12.9	176	35.2	-2.69
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	9.051 ± 0.45	1.18	83.2	-1.54
Chromium	mg/kg DM	324 ± 13.2	298.5 ± 14.9	36.6	92.2	-0.69
Cobalt	mg/kg DM	297 ± 18.9	295.2 ± 14.76	40	99.5	-0.03
Copper	mg/kg DM	619 ± 18.8	664 ± 33.2	44.1	107	1.03
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	91.13 ± 4.56	11.7	97.1	-0.23
Mercury	mg/kg DM	0.13 ± 0.0204	0.135 ± 0.007	0.0367	104	0.13
Molybdenum	mg/kg DM	3.89 ± 0.607	2.543 ± 0.13	1.16	65.4	-1.16
Nickel	mg/kg DM	300 ± 15.8	287.1 ± 14.4	38.3	95.8	-0.33
Selenium	mg/kg DM	2.38 ± 0.657	0.999 ± 0.05	1.19	42	-1.16
Silver	mg/kg DM	13 ± 0.967	- ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	- ± -	4.99	-	-
TOC (as C)	mg/kg DM	41100 ± 2100	47343.3 ± 2367	4810	115	1.30
Vanadium	mg/kg DM	20.1 ± 2.56	- ± -	4.96	-	-
Zinc	mg/kg DM	2370 ± 117	2685 ± 134.3	300	113	1.04


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
TOC (as C)
Zinc
Measurand
-2.7
-2
0
2
z-score

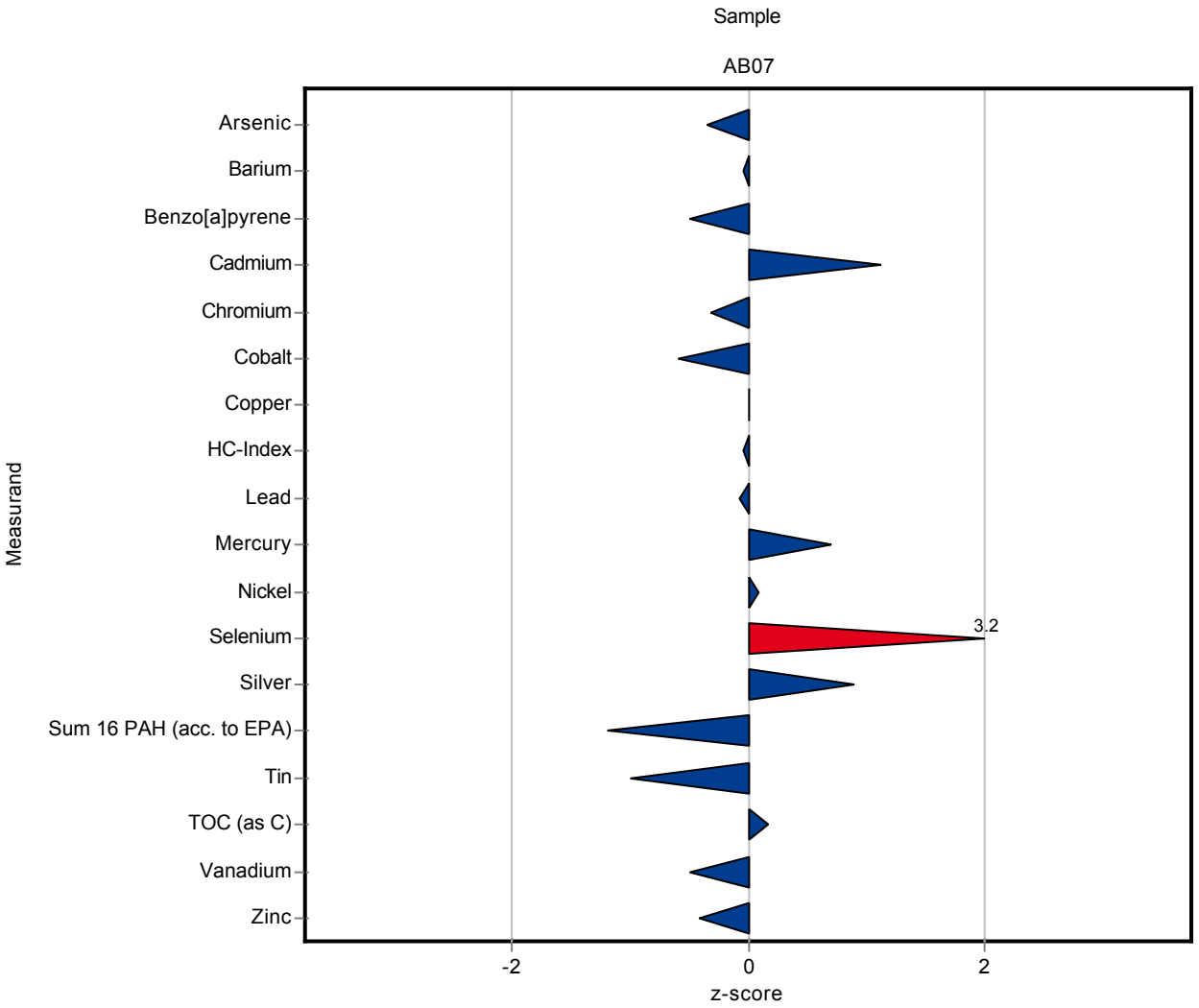
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	2.4 ± 0.13	0.803	64.2	-2.49
Arsenic	mg/kg DM	147 ± 3.34	143.79 ± 7.19	8.02	97.9	-0.20
Barium	mg/kg DM	732 ± 51.4	257.79 ± 12.9	176	35.2	-8.26
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	- ± -	0.0244	-	-
Cadmium	mg/kg DM	10.9 ± 0.473	9.051 ± 0.45	1.18	83.2	-1.80
Chromium	mg/kg DM	324 ± 13.2	298.5 ± 14.9	36.6	92.2	-0.77
Cobalt	mg/kg DM	297 ± 18.9	295.2 ± 14.76	40	99.5	-0.04
Copper	mg/kg DM	619 ± 18.8	664 ± 33.2	44.1	107	0.66
HC-Index	mg/kg DM	437 ± 93.7	- ± -	215	-	-
Lead	mg/kg DM	93.8 ± 4	91.13 ± 4.56	11.7	97.1	-0.27
Mercury	mg/kg DM	0.13 ± 0.0204	0.135 ± 0.007	0.0367	104	0.19
Molybdenum	mg/kg DM	3.89 ± 0.607	2.543 ± 0.13	1.16	65.4	-2.04
Nickel	mg/kg DM	300 ± 15.8	287.1 ± 14.4	38.3	95.8	-0.39
Selenium	mg/kg DM	2.38 ± 0.657	0.999 ± 0.05	1.19	42	-2.07
Silver	mg/kg DM	13 ± 0.967	- ± -	2.05	-	-
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	- ± -	0.644	-	-
Tin	mg/kg DM	36.2 ± 2.3	- ± -	4.99	-	-
TOC (as C)	mg/kg DM	41100 ± 2100	47343.3 ± 2367	4810	115	1.21
Vanadium	mg/kg DM	20.1 ± 2.56	- ± -	4.96	-	-
Zinc	mg/kg DM	2370 ± 117	2685 ± 134.3	300	113	1.07


Sample
AB07
Antimony
Arsenic
Barium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
TOC (as C)
Zinc
Measurand
-2.5
-8.3
-1.8
-2.0
-2.1
1.2
1.1
-1
0
1
En score

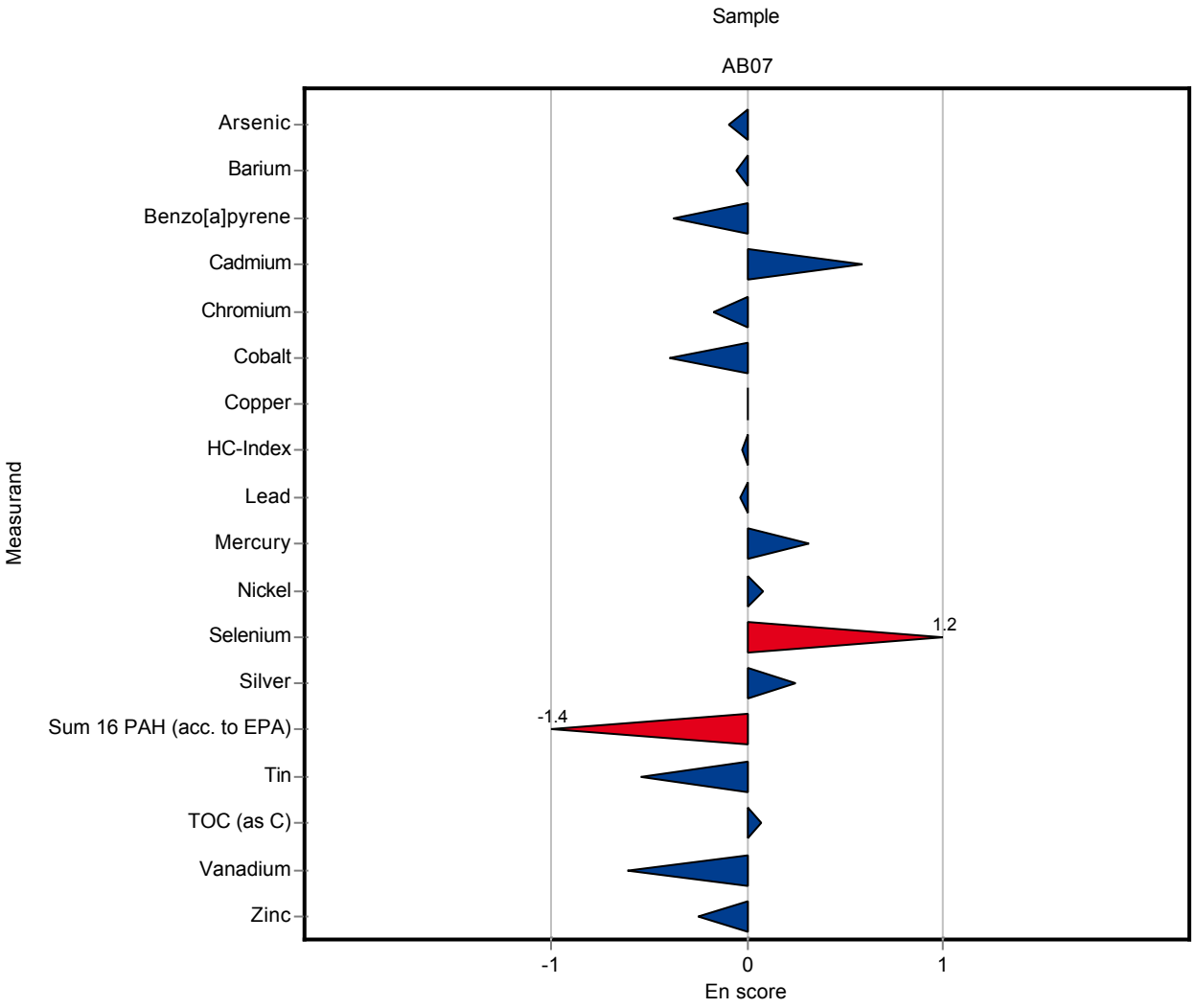
Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Antimony	mg/kg DM	3.74 ± 0.47	<5 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	144 ± 15	8.02	98.1	-0.35
Barium	mg/kg DM	732 ± 51.4	726 ± 51	176	99.1	-0.04
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.06 ± 0.015	0.0244	83.3	-0.49
Cadmium	mg/kg DM	10.9 ± 0.473	12.2 ± 1.1	1.18	112	1.12
Chromium	mg/kg DM	324 ± 13.2	312 ± 33	36.6	96.4	-0.32
Cobalt	mg/kg DM	297 ± 18.9	273 ± 28	40	92.1	-0.59
Copper	mg/kg DM	619 ± 18.8	619 ± 93	44.1	100	0.01
HC-Index	mg/kg DM	437 ± 93.7	430 ± 130	215	98.3	-0.03
Lead	mg/kg DM	93.8 ± 4	92.9 ± 13.4	11.7	99	-0.08
Mercury	mg/kg DM	0.13 ± 0.0204	0.156 ± 0.04	0.0367	120	0.70
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	303 ± 18	38.3	101	0.09
Selenium	mg/kg DM	2.38 ± 0.657	6.2 ± 1.6	1.19	261	3.23
Silver	mg/kg DM	13 ± 0.967	14.9 ± 3.7	2.05	114	0.91
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.01 ± 0.225	0.644	56.7	-1.20
Tin	mg/kg DM	36.2 ± 2.3	31.2 ± 4.5	4.99	86.2	-1.00
TOC (as C)	mg/kg DM	41100 ± 2100	41900 ± 5400	4810	102	0.17
Vanadium	mg/kg DM	20.1 ± 2.56	17.7 ± 1.5	4.96	88	-0.49
Zinc	mg/kg DM	2370 ± 117	2250 ± 240	300	94.8	-0.41


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
3.2
-2
0
2
z-score

Sample: AB07

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Antimony	mg/kg DM	3.74 ± 0.47	<5 (LOQ) ± -	0.803	-	-
Arsenic	mg/kg DM	147 ± 3.34	144 ± 15	8.02	98.1	-0.09
Barium	mg/kg DM	732 ± 51.4	726 ± 51	176	99.1	-0.06
Benzo[a]pyrene	mg/kg DM	0.072 ± 0.0118	0.06 ± 0.015	0.0244	83.3	-0.37
Cadmium	mg/kg DM	10.9 ± 0.473	12.2 ± 1.1	1.18	112	0.59
Chromium	mg/kg DM	324 ± 13.2	312 ± 33	36.6	96.4	-0.17
Cobalt	mg/kg DM	297 ± 18.9	273 ± 28	40	92.1	-0.40
Copper	mg/kg DM	619 ± 18.8	619 ± 93	44.1	100	0.00
HC-Index	mg/kg DM	437 ± 93.7	430 ± 130	215	98.3	-0.03
Lead	mg/kg DM	93.8 ± 4	92.9 ± 13.4	11.7	99	-0.03
Mercury	mg/kg DM	0.13 ± 0.0204	0.156 ± 0.04	0.0367	120	0.31
Molybdenum	mg/kg DM	3.89 ± 0.607	<5 (LOQ) ± -	1.16	-	-
Nickel	mg/kg DM	300 ± 15.8	303 ± 18	38.3	101	0.08
Selenium	mg/kg DM	2.38 ± 0.657	6.2 ± 1.6	1.19	261	1.17
Silver	mg/kg DM	13 ± 0.967	14.9 ± 3.7	2.05	114	0.25
Sum 16 PAH (acc. to EPA)	mg/kg DM	1.78 ± 0.295	1.01 ± 0.225	0.644	56.7	-1.43
Tin	mg/kg DM	36.2 ± 2.3	31.2 ± 4.5	4.99	86.2	-0.54
TOC (as C)	mg/kg DM	41100 ± 2100	41900 ± 5400	4810	102	0.08
Vanadium	mg/kg DM	20.1 ± 2.56	17.7 ± 1.5	4.96	88	-0.61
Zinc	mg/kg DM	2370 ± 117	2250 ± 240	300	94.8	-0.25


Sample
AB07
Measurand
Arsenic
Barium
Benzo[a]pyrene
Cadmium
Chromium
Cobalt
Copper
HC-Index
Lead
Mercury
Nickel
Selenium
Silver
Sum 16 PAH (acc. to EPA)
Tin
TOC (as C)
Vanadium
Zinc
1.2
-1.4
-1
0
1
En score