umweltbundesamt
ENVIRONMENT AGENCY AUSTRIA

Proficiency Testing Scheme für die Wasseranalytik - Realproben

P23 Polyzyklische Aromatische Kohlenwasserstoffe (PAK)

Proficiency Testing Scheme for Water Analysis - natural water samples

P23 Polycyclic aromatic hydrocarbons (PAH)

BERICHT / REPORT

Probenversand / Sample dispatch: 03.05.2022

Ausgabe/Edition 1: 03.06.2022

Dieser Report umfasst 253 Seiten.
This report comprises 253 pages.

Durchführung gemäß Verfahren VA_1006_PT_CA (2021-01-25).

In accordance with the procedure VA_1006_PT_CA (2021-01-25).

Akkreditierung Austria
A
0200
ISO/IEC 17043

Anbieter der Eignungsprüfung / Provider of the proficiency test:
Anschrift / Address: Umweltbundesamt GmbH
Spittelauer Lände 5
1090 Vienna/Austria
E-Mail: ringversuche@umweltbundesamt.at
Tel: +43 (0) 1 31304 4334

Website deutsch: www.umweltbundesamt.at/ringversuche
www.ifatest.at

Website english: https://www.umweltbundesamt.at/en/proficiency-testing
www.ifatest.eu

Koordination und technische Leitung Eignungsprüfungen / coordinator and technical management:
Dipl.-Ing. Monika Denner

Verantwortlich für die Durchführung der Eignungsprüfungsrunde / Responsible for the implementation of this proficiency test:
Dipl.-Ing. Johannes Urteil, Martha Schmid MSc unter Mitarbeit Mag. Vito Satrapa
Tel.: +43 (0) 1 31304 4334

Verantwortlich für die Freigabe des Berichts / Responsible for authorizing the report:
Dipl.-Ing. Monika Denner
Leitung Eignungsprüfungen für den Bereich chemische Analytik / Management for proficiency tests for chemical analysis

umweltbundesamt ENVIRONMENT AGENCY AUSTRIA	**Signatory**	Monika Christine Denner
	Date/Time-UTC	2022-06-03T10:09:27+02:00
Note	According to EU regulation No 910/2014 (eIDAS) this qualified electronic signature is legally equivalent to a handwritten signature. Verification at: http://www.signature-verification.gv.at	

Inhaltsverzeichnis / Table of Contents

D1. Beschreibung des Ringversuchs

D1.1. Ausgestaltung und Durchführung

- Anzahl der Anmeldungen: 21
- Anzahl der übermittelten Datensätze: 18
- Probenversand: 03.05.2022
- Einsendeschluss der Daten: 31.05.2022

Die Ergebnisabgabe erfolgte auf elektronischem Weg mittels passwortgeschützter Online-Dateneingabe. Beim Abschluss der Dateneingabe bestätigten die Teilnehmenden die vollständige und korrekte Eingabe aller Daten und die Freigabe der Ergebnisse zur Auswertung.

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

D1.2. Beschreibung der Prüfgegenstände

Die Probenahme von Trinkwasser erfolgte am 27.04.2022 und die Probenahme von Grundwasser erfolgte am 29.04.2022. Das Probenmaterial umfasste:

- 1 Probe Trinkwasser (P23 A)
- 1 Probe Grundwasser (P23 B)

Alle Proben wurden bis zur weiteren Verarbeitung gekühlt gelagert (4 +/-3°C).

Das Abfüllen der Proben erfolgte nach Filtration (40 µm) unter ständigem Rühren (Rührkessel). Anschließend wurden die Proben in den Flaschen mit einzelnen Substanzen dotiert und durch Schütteln homogenisiert. Die Stabilisierung erfolgte durch Kühlung.

Die homogenen Prüfgegenstände wurden am 03.05.2022 verschickt.

Jedes Teilnehmerlabor erhielt:

- 2 Proben zu je ca. 2000 ml, abgefüllt in je 2 x 1000 ml Braunglasflaschen.

D1.3. Anweisungen für die Teilnehmenden

Aus Stabilitätsgründen wurde empfohlen bis spätestens 05.05.2022 mit den Analysen zu beginnen.

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

D1.4. Kontrollanalytik zur Bewertung der Homogenität

Im Zuge der Abfüllung wurden zu willkürlichen Zeitpunkten mehrere Aliquote pro Probe zur Kontrollanalytik entnommen.
Es wurden für die A- bzw. B-Probe jeweils n=5 Kontrollproben sowie n=1 undotierte Realprobe dem Labor zur Analyse übergeben.

Die Parameter wurden in der Prüfstelle am Umweltbundesamt (Prüfstelle für Umwelt- , GVO- & Treibstoffanalytik) zeitnah zum Probenversand analysiert.

Im Zuge der Auswertung wurde die relative Standardabweichung zwischen den Kontrollprobenabfüllungen bewertet und mit der Vergleichsstandardabweichung beim aktuellen Ringversuch verglichen.
Die Ergebnisse der Kontrollanalytik sind in der parameterorientieren Auswertung (E7) in Form von Mittelwerten ± Messunsicherheit als Kontrollwert (control test value) ± U gelistet (jeweils angegeben als erweiterte Messunsicherheit, k=2).

D1.5. Trendtest zur Bewertung der Stabilität

Die Bewertung der Stabilität der Prüfgegenstände (Realproben) erfolgte auf Basis der Datenstatistik aus den vergangenen Runden für Realproben im Zeitraum 2013 bis 2021.

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

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

D1.6. Ermittlung des zugewiesenen Wertes

Die Ergebnisse der Analysen mussten spätestens bis zum 31.05.2022 beim Veranstalter vorliegen. Später eingehende Werte wurden nicht berücksichtigt.

Im Zuge der Plausibilitätsprüfung der Daten (z.B. Check korrekte Einheiten, Messunsicherheitsangabe, …) wurden die Teilnehmenden mit auffälligen Ergebnissen zum erneuten Datencheck der Eingabe und um Rückmeldung binnen 24 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 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 Ergebnisse der Teilnehmenden von über 50 % oder bei mangelhafter Rückführbarkeit der statistischen Kenndaten aus den ausreißerbereinigten Ergebnissen der Teilnehmenden auf den Mittelwert des Kontrolllabores bzw. einer zu geringen Anzahl an ausreißerbereinigten Ergebnissen über die Gruppe der akkreditierten Labore, kann die Situation auftreten, dass kein zugewiesener Wert für den aktuellen Ringversuch festgelegt werden kann und daher keine Bewertung der Ergebnisse der Teilnehmenden für diesen Parameter möglich ist. Ein entsprechender Hinweis wird im Bericht unter E7 bei der informativen Auswertung angebracht. Im Rahmen der internen Qualitätssicherung der Teilnehmenden kann ein Vergleich mit den Ergebnissen des Kontrolllabors durchgeführt werden. Diese

Vorgehensweise wird bei Anwendung jeweils parameter- und probenbezogen unter Punkt D4 des Berichts dokumentiert.

D2. Kriterien der Leistungsbewertung

D2.1. Leistungskriterium z-Score

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

Die Ermittlung der z-Scores erfolgte gemäß nachfolgender Formel:

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

Dabei ist:

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Ergebnisse der Teilnehmenden. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
Kriterium	Vergleichsstandardabweichung berechnet aus den Statistiken für reale Wasserproben der vorangegangenen Runden im Zeitraum 2013 bis 2021 (RSDpooled) bzw. aus den ausreißerbereinigten Ergebnissen der Teilnehmenden (sR) des aktuellen Ringversuchs (falls noch weniger als 6 vorangegangene Runden für A und B-Proben vorlagen). In begründeten Fällen (z.B. Ergebnisse Realproben nahe an Mindestbestimmungsgrenze oder regulatorischer Vorgaben) erfolgt die Festlegung nach Expertenbefund und die Vorgangsweise wird unter Punkt D4 des Berichts beschrieben.

D2.2. Leistungskriterium E_n-Score

Für die realen Wasserproben erfolgen seit 2019 zusätzliche Bewertungen unter Einbeziehung der erweiterten Messunsicherheiten der Teilnehmenden und der erweiterten Messunsicherheit des zugewiesenen Wertes, gemäß E_n-Score. Diese Auswertungen werden für die Teilnehmenden im Bericht unter Punkt E8, jeweils im Anschluss an die z-Score Auswertung dargestellt.

Die Ermittlung der E_n-Scores erfolgte gemäß nachfolgender Formel:

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

Dabei ist:

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Ergebnisse der Teilnehmenden. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
U(x_i)	erweiterte Messunsicherheit des Messergebnisses (Ergebnisse der Teilnehmenden), k=2
U($\bar{X}$)	erweiterte Messunsicherheit des zugewiesenen Wertes, k=2

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

Interpretation der z-Scores:

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

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

Interpretation der E_n-Scores:

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

Hinweis: Bei der Bewertung mittels E_n-Score erfolgt die Berücksichtigung der erweiterten Messunsicherheiten der Teilnehmenden und des zugewiesenen Wertes. |E_n-Score| > 1.0 können darauf hinweisen, dass die Unsicherheitsschätzungen überprüft oder ein Messproblem korrigiert werden muss.

D3. Darstellung und Interpretation der Messergebnisse

In der parameterorientierten Auswertung ist eine tabellarische Übersicht mit den Messergebnissen inklusive der Unsicherheit (± U), der Wiederfindung zum zugewiesenen Wert und dem berechneten z-Score dargestellt. Weiterhin werden unter

Anmerkungen die Ausreißer gekennzeichnet. Die in der Tabelle angeführten Ergebnisse werden auch grafisch dargestellt.

In der 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 D5. entnommen werden.

D4. Anmerkungen zur Auswertung

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

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

Als Ergebnis einer Langzeitauswertung über aktuell 9 Eignungsprüfungsrunden (2013–2021) in Realproben wurden Kriterien (RSDpool) zur Ergebnisbewertung berechnet. Diese wurden im Zuge der Auswertung den relativen Vergleichs-standardabweichungen (vR) des aktuellen Ringversuchs gegenübergestellt.

Bei allen Parametern erfolgt die Berechnung der Scores nach D2.

D5. Erläuterung zu Tabellen und Grafiken

D5.1. Angaben und Abkürzungen in Tabellen

Parameter	Allgemeine Bezeichnung des Analysenparameters
Probe	Bezeichnung der übermittelten Probe
Einheit	Vorgegebene Einheit für Messwert und Ergebnisunsicherheit (z.B. µg/l)
Zugewiesener Wert	Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen)
U (k=2)	erweiterte Unsicherheit (k=2) des zugewiesenen Wertes, (angegeben auf 3 signifikante Stellen)
Kriterium	Vorgabewert zur Ermittlung des z-Scores in der angegebenen Einheit (angegeben auf 3 signifikante Stellen)
Kriterium [%]	Vorgabewert zur Ermittlung des z-Scores in % des zugewiesenen Wertes (angegeben auf 2 signifikante Stellen)
Mittelwert	Ausreißerbereinigter Mittelwert über die Ergebnisse der Teilnehmenden (angegeben auf 3 signifikante Stellen)
VB (99%)	99 % Vertrauensbereich (angegeben auf 3 signifikante Stellen)
Minimum	Minimales abgegebenes Messergebnis, ausreißerbereinigt (angegeben auf 3 signifikante Stellen)
Maximum	Maximales abgegebenes Messergebnis, ausreißerbereinigt (angegeben auf 3 signifikante Stellen)
sR	Vergleichsstandardabweichung, berechnet aus den ausreißerbereinigten Ergebnissen der Teilnehmenden des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
vR	relative Vergleichsstandardabweichung in %, berechnet aus den ausreißerbereinigten Ergebnissen der Teilnehmenden des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 2 signifikante Stellen)
Kontrollwert ± U (k=2)	Mittelwert der Kontrollmessungen des Veranstalters ± erweiterte Ergebnisunsicherheit des Kontrollwertes (jeweils angegeben auf 3 signifikante Stellen)
Laborcode	anonymisierte, eindeutige Kennung des teilnehmenden Labors im jeweiligen Ringversuch
Messwert	einzelne(r) Messwert(e) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
Messergebnis	Für die Bewertung herangezogenes Ergebnis lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen

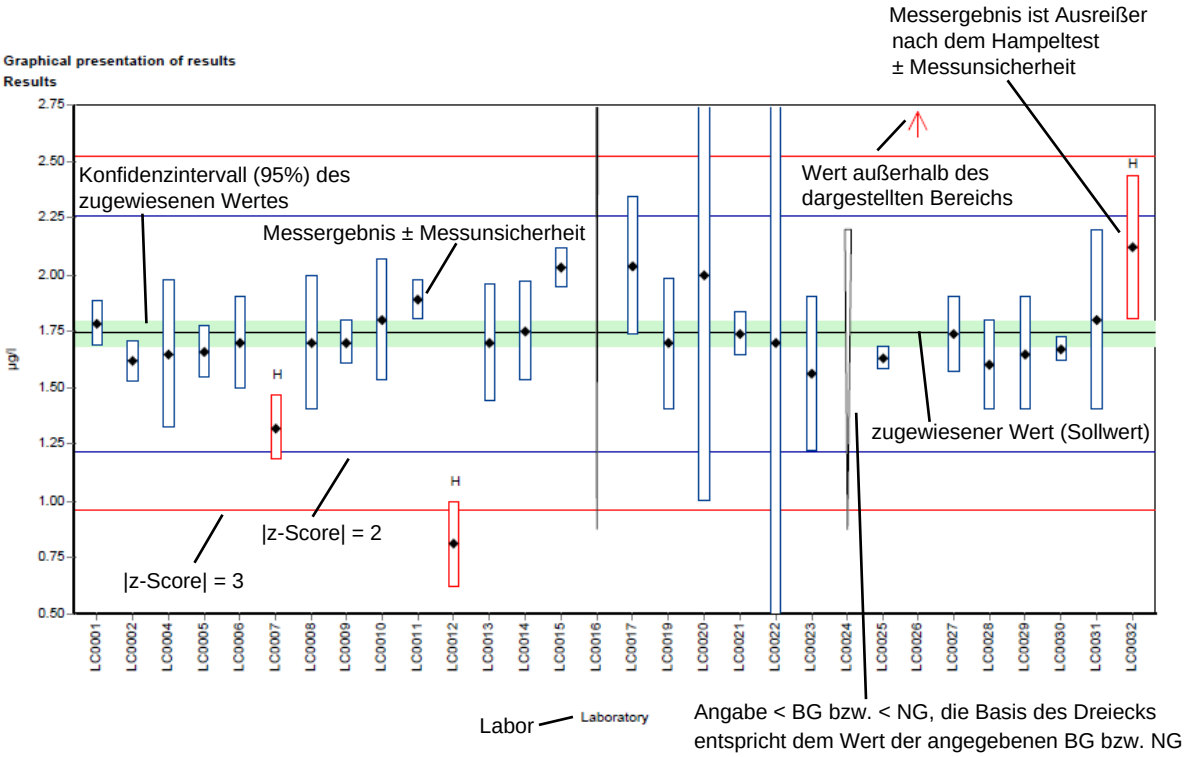
	dargestellt). Bei Eignungsprüfungsrunden mit Vorgabe von unabhängigen Mehrfachbestimmungen, entspricht dies dem berechneten Mittelwert aus den einzelnen Messwerten der Teilnehmenden.
± U	kombinierte Messunsicherheit ohne Erweiterungsfaktor (k=1) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
BG	Bestimmungsgrenze
NG	Nachweisgrenze
WF	Wiederfindungsrate in %, bezogen auf den zugewiesenen Wert (angegeben auf 3 signifikante Stellen, dargestellt maximal 1 Nachkommastelle)
MW	Mittelwert
z-Score	Abweichung des Messergebnisses zum zugewiesenen Wert, ausgedrückt als Vielfaches des Kriteriums (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen)
E_n-Score	Abweichung des Messergebnisses zum zugewiesenen Wert, ausgedrückt als Vielfaches der kombinierten Messunsicherheiten, bestehend aus erweiterter Unsicherheit des zugewiesenen Wertes und der erweiterten Unsicherheit der Messergebnisse der Teilnehmenden (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen). Beim E_n-Score erfolgt die Berücksichtigung der Messunsicherheit der Teilnehmenden.
-	Keine Daten übermittelt bzw. keine Berechnung möglich
Anmerkungen	Anmerkungen zum jeweiligen Messergebnis (z.B. H, FN, FP)
H	Ausreißer nach dem Hampel-Test
FN	Falsch negativ – Messergebnis kleiner Bestimmungs- bzw. Nachweisgrenze dessen Betrag die Bedingungen eines Ausreißers nach dem Hampeltest erfüllt.
FP	Falsch positiv – Falls aufgrund des geringen Analytgehalts kein zugewiesener Wert ermittelt werden kann (n < 6), wird der Median der Beträge der übermittelten Nachweis- bzw. Bestimmungsgrenzen ermittelt. Als falsch positiv wird ein Messergebnis bewertet, welches diesen Median um mehr als 100 % übersteigt.
Standardabweichung	Vergleichsstandardabweichung berechnet aus den Ergebnissen der Teilnehmenden des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)

rel. Standardabweichung	relative Vergleichsstandardabweichung in %, berechnet aus den Ergebnissen der Teilnehmenden des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 3 signifikante Stellen)
n	Anzahl der Messergebnisse
*	Kennzeichnung für Hinweise zur Erläuterung
**	Kennzeichnung für Parameter außerhalb der Akkreditierung gemäß EN ISO/IEC 17043

D5.2. Graphische Darstellung der Ergebnisse

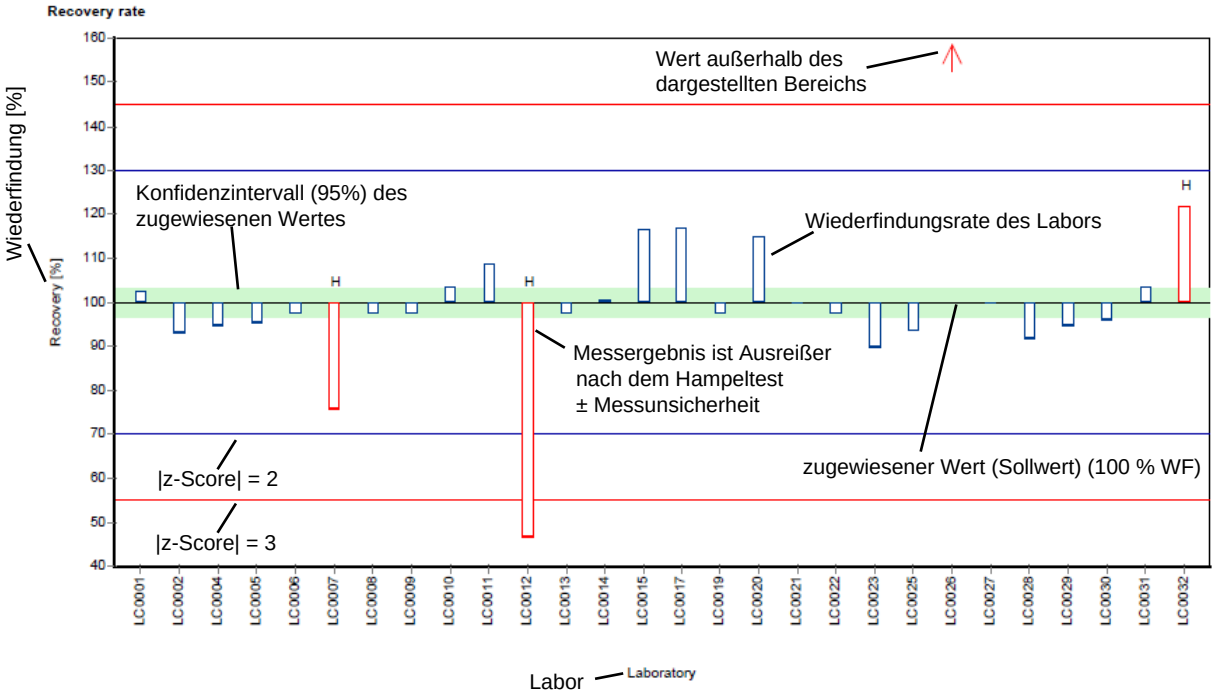
Nachfolgend wird die graphische Darstellung anhand von kommentierten Beispieldiagrammen erläutert.

Beispieldiagramm: Messwerte



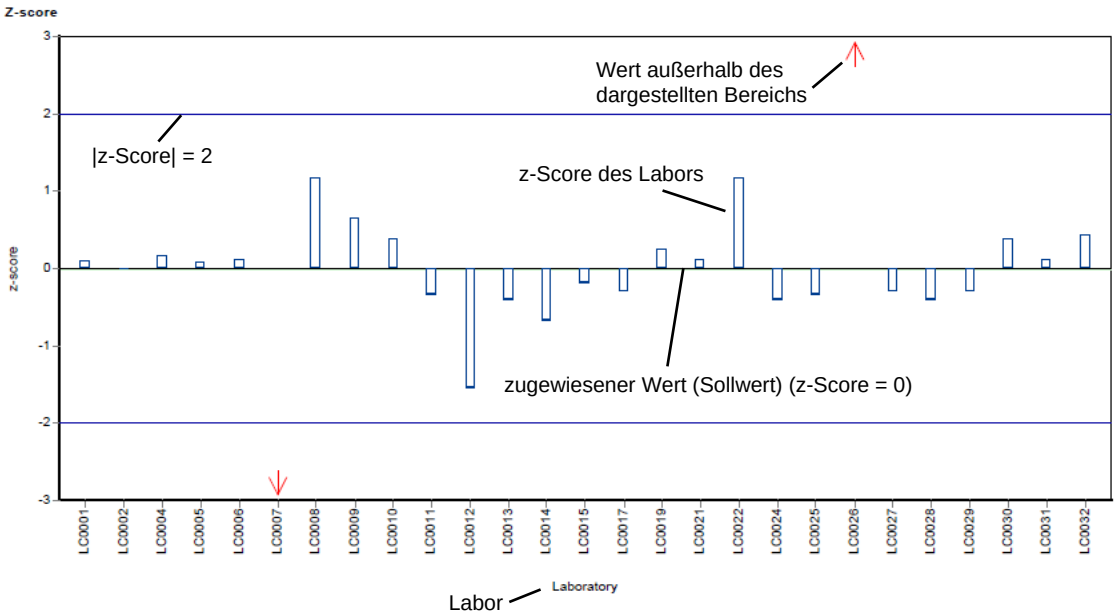
Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: Wiederfindung zum zugewiesenen Wert



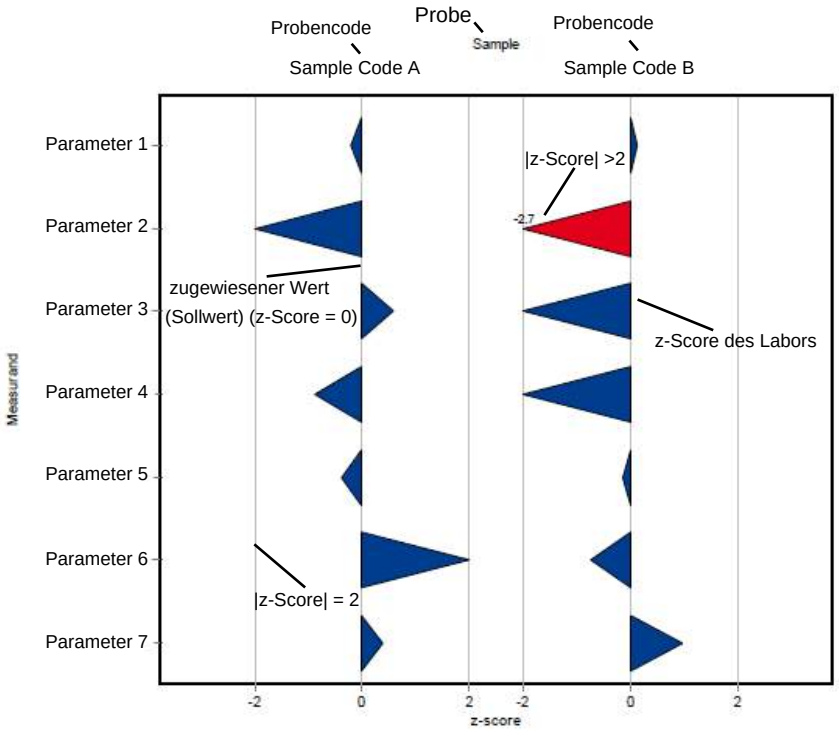
Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: z-Score

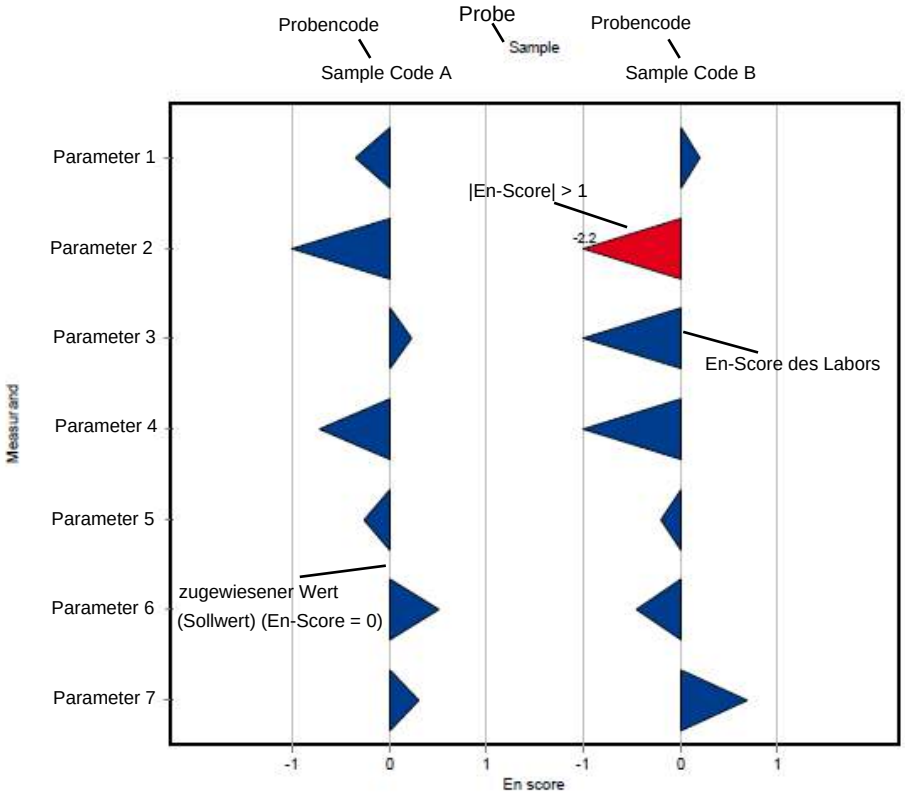


Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

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 [%]
Acenaphthen	P23 A	ng/l	13.9	±	0.552	2.64	19
	P23 B	ng/l	135	±	6.22	25.7	19
Acenaphthylen	P23 A	ng/l	10.8	±	0.79	2.59	24
	P23 B	ng/l	104	±	5.36	25	24
Anthracen	P23 A	ng/l	12.6	±	0.723	3.29	26
	P23 B	ng/l	171	±	9.03	44.5	26
Benzo[a]anthracen	P23 A	ng/l	16.1	±	1.46	3.37	21
	P23 B	ng/l	109	±	6.92	22.9	21
Benzo[a]pyren	P23 A	ng/l	12.6	±	2.25	3.03	24
	P23 B	ng/l	109	±	8.57	26.1	24
Benzo[b]fluoranthen	P23 A	ng/l	15.5	±	2.12	2.64	17
	P23 B	ng/l	94.9	±	7.06	16.1	17
Benzo[g,h,i]perylen	P23 A	ng/l	14.1	±	1.46	4.5	32
	P23 B	ng/l	139	±	8.96	44.4	32
Benzo[k]fluoranthen	P23 A	ng/l	15	±	1.5	3.91	26
	P23 B	ng/l	121	±	6.99	31.5	26
Chrysen	P23 A	ng/l	12.9	±	0.849	2.84	22
	P23 B	ng/l	141	±	7.44	31	22
Dibenzo[a,h]anthracen	P23 A	ng/l	16.3	±	2.56	4.89	30
	P23 B	ng/l	117	±	16.8	35.1	30
Fluoranthen	P23 A	ng/l	19.3	±	1.32	3.48	18
	P23 B	ng/l	147	±	7.76	26.4	18
Fluoren	P23 A	ng/l	20.9	±	1.69	2.92	14
	P23 B	ng/l	84.9	±	4.59	11.9	14
Indeno[1,2,3-cd]pyren	P23 A	ng/l	15.1	±	1.86	3.17	21
	P23 B	ng/l	76.4	±	5.56	10.7	14
Naphthalin	P23 A	ng/l	22.7	±	3.5	4.77	21
	P23 B	ng/l	137	±	8.6	28.9	21
Phenanthren	P23 A	ng/l	14.8	±	0.953	2.21	15
	P23 B	ng/l	144	±	2.72	21.6	15
Pyren	P23 A	ng/l	12.6	±	0.683	2.02	16
	P23 B	ng/l	144	±	7.27	23.1	16

D6.2. Zusammenfassung der ausreißerbereinigten Ringversuchsergebnisse

Parameter	Probe	Anzahl Labors für Berechnung	Anzahl Ausreißer Labors	Einheit	Mittelwert	±	VB (99%)	Minimum	Maximum	sR	vR [%]
Acenaphthen	P23 A	13	2	ng/l	13.9	±	0.829	11.9	15.5	0.996	7.2
	P23 B	16	1	ng/l	135	±	9.33	111	159	12.4	9.2
Acenaphthylen	P23 A	8	2	ng/l	10.8	±	1.19	8.58	12.2	1.12	10
	P23 B	15	1	ng/l	104	±	8.04	82.7	123	10.4	10
Anthracen	P23 A	12	1	ng/l	12.6	±	1.08	10.7	14.4	1.25	9.9
	P23 B	16	1	ng/l	171	±	13.5	140	209	18.1	11
Benzo[a]anthracen	P23 A	14	1	ng/l	16.1	±	2.19	12.8	23.2	2.73	17
	P23 B	15	2	ng/l	109	±	10.4	94.9	139	13.4	12
Benzo[a]pyren	P23 A	13	0	ng/l	12.6	±	3.37	3.71	19.7	4.05	32
	P23 B	14	4	ng/l	109	±	12.9	92.8	150	16	15
Benzo[b]fluoranthen	P23 A	14	1	ng/l	15.5	±	3.18	5.53	23.5	3.97	26
	P23 B	15	3	ng/l	94.9	±	10.6	79.6	132	13.7	14
Benzo[g,h,i]perylen	P23 A	12	2	ng/l	14.1	±	2.19	10.2	18.7	2.53	18
	P23 B	14	3	ng/l	139	±	13.4	118	175	16.8	12
Benzo[k]fluoranthen	P23 A	15	1	ng/l	15	±	2.25	11.5	20.8	2.9	19
	P23 B	15	3	ng/l	121	±	10.5	107	155	13.5	11
Chrysen	P23 A	13	1	ng/l	12.9	±	1.27	10.6	15.8	1.53	12
	P23 B	15	2	ng/l	141	±	11.2	122	170	14.4	10
Dibenzo[a,h]anthracen	P23 A	14	0	ng/l	16.3	±	3.85	5.14	22.9	4.8	29
	P23 B	16	0	ng/l	117	±	25.3	37.5	180	33.7	29
Fluoranthen	P23 A	15	1	ng/l	19.3	±	1.99	15	23.3	2.56	13
	P23 B	15	2	ng/l	147	±	11.6	126	176	15	10
Fluoren	P23 A	14	1	ng/l	20.9	±	2.53	16.3	28.5	3.16	15
	P23 B	16	1	ng/l	84.9	±	6.88	70.1	104	9.18	11
Indeno[1,2,3-cd]pyren	P23 A	12	2	ng/l	15.1	±	2.8	10.2	22	3.23	21
	P23 B	14	3	ng/l	76.4	±	8.35	62	95	10.4	14
Naphthalin	P23 A	14	0	ng/l	22.7	±	5.25	12.2	36.1	6.55	29
	P23 B	14	2	ng/l	137	±	12.9	106	173	16.1	12
Phenanthren	P23 A	14	1	ng/l	14.8	±	1.43	11.5	18	1.78	12
	P23 B	13	4	ng/l	144	±	4.09	138	155	4.91	3.4
Pyren	P23 A	12	2	ng/l	12.6	±	1.02	10.8	14.7	1.18	9.4

Parameter	Probe	Anzahl Labors für Berechnung	Anzahl Ausreißer Labors	Einheit	Mittelwert	± VB (99%)	Minimum	Maximum	sR	vR [%]
Pyren	P23 B	15	2	ng/l	144	± 10.9	127	170	14.1	9.7

E1. Description of the proficiency test

E1.1. Design and implementation

- Number of registrations: 21
- Number of submitted data records: 18
- Dispatch of samples: 03rd May 2022
- Closing date for submission of data: 31st May 2022

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

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

E1.2. Description of the proficiency test items

The sampling of drinking water and ground water was carried out on 27th April 2022 (drinking water) and on 29th April 2022 (ground water).

The following samples were made available

- 1 sample drinking water (P23 A)
- 1 sample ground water (P23 B)

Both samples were stored at 4 +/- 3°C until further processing. After filtration (40 µm), the samples were filled into bottles under continuous stirring (stirring vessel). Afterwards the samples were partly spiked in the bottles with specific substances and homogenized by shaking. The samples were stabilized by cooling.

The homogeneous proficiency test items were dispatched on 03rd May 2022.

Each participant received:

- 2 samples each 2000 ml, filled in 2 x 1000 ml brown glass bottles

E1.3. Instructions for the participants

For reasons of stability, it was recommended to start the analysis by the 05th May 2022 at the latest.

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

E1.4. Control testing for homogeneity evaluation

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

All parameters were tested in the testing laboratory at Environment Agency Austria (Prüfstelle für Umwelt-, GVO- & Treibstoffanalytik) close to the time of sample dispatch.

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

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

E1.5. Trend test for stability evaluation

The evaluation of stability of the proficiency test items was performed using the data statistics of the results of previous proficiency testing rounds for real water samples of the period from 2013 to 2021.

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

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

According to data obtained from previous rounds for real water samples from 2013 to 2021 and based on the trend test evaluation of the current round, the stability of the test items for proficiency testing of real water samples can be confirmed for the recommended analysis period until deadline for submission of data.

E1.6. Determination of the assigned values

The analytical results had to be made available to the organiser not later than 05th May 2022. 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, …) the 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 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 for the assigned value.

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

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

In this case, a clear statement in section E7 of the report is made and all 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 measures, the participants can compare their results with the control test values.

E2. Criteria of performance evaluation

E2.1. Performance criterion z-Score

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

z-Scores were calculated on the basis of 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 from previous rounds for proficiency testing for real water samples from 2013 to 2021 (as RSD pooled) or from the participants' results after removal of outliers (sR) in the current round (if less than 6 previous rounds for the parameters of real water samples A and B are available). Where justified (e.g. results for real water samples are close to minimum quantification limit or in case of regulatory requirements) the criteria is defined by expert judgement and the procedure is clearly described in section E4 of the report.

E2.2. Performance criterion E_n-Score

Since 2019 additional assessment of the participants' results using E_n-Scores for proficiency testing of real water samples is performed. 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 on the basis of 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, k=2
U($\bar{X}$)	expanded measurement uncertainty for the assigned value, k=2

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

Interpretation of z-Scores:

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

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

Interpretation of E_n-Scores:

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

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

E3. Representation and interpretation of measurement results

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

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

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

An annotation of the tables and graphics is given in section E.5.

E4. Explanatory notes

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

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

As a result of a long-term evaluation of 9 proficiency testing rounds (2013–2021 in real samples, evaluation criteria (RSDpool) were calculated. These criteria were compared with the relative reproducibility standard deviation (vR) of the current proficiency testing.

Scores for all listed parameters were calculated according to E2.

E5. Annotations on tables and charts

E5.1. Information and abbreviations in tables

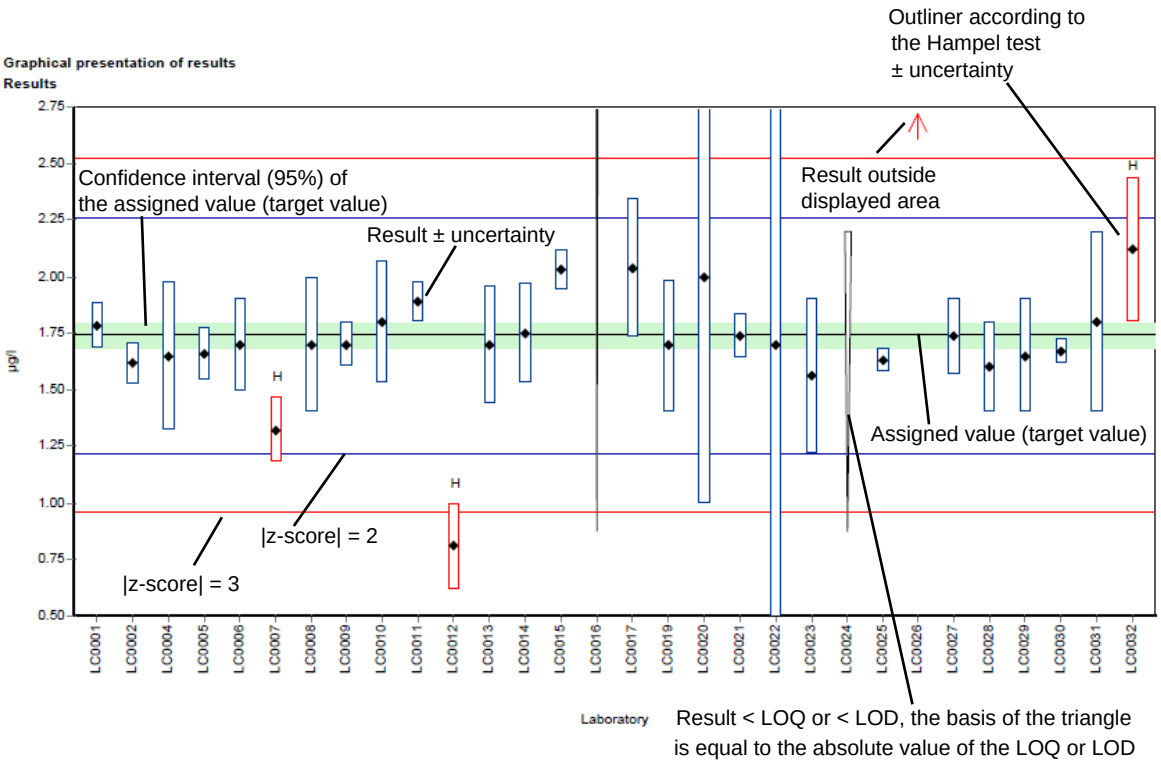
Parameter	Analyte identifier
Sample	Sample identifier
Unit	Given unit for result and uncertainty (e.g. µg/l)
Assigned value	Target value for proficiency assessment of the participants (3 significant digits)
U (k=2)	Expanded uncertainty (k=2) of the assigned value (3 significant digits)
Criteria	Specified value for the determination of the z-score in the given unit (3 significant digits)
Criteria [%]	Specified value for the determination of the z-score in % of the assigned value (2 significant digits)
Mean	Mean of the 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)
SD	Reproducibility standard deviation, calculated from the participants results, after removal of outliers (3 significant digits)
RSD %	Reproducibility standard deviation, calculated from the participants results relative to the target value, given in %, after removal of outliers (2 significant digits)
Control test value ± U (k=2)	Mean of control test value ± expanded measurement uncertainty (3 significant digits)
Labcode	Laboratory identifier (anonymized)
Result	Result as indicated by participant (max. 5 decimal places)
± U	combined measurement uncertainty without expansion factor (k=1), as indicated by participant (max. 5 decimal places)
LOQ	Limit of quantification
LOD	Limit of detection
Recovery	Recovery rate in % based on assigned value (target value) (3 significant digits, max. one decimal place given)
z-Score	Deviation of result based on the assigned value (target value) given as a multiple of the criteria (3 significant digits, max. 2 decimal places given)

E_n-Score	Deviation of result based on the assigned value (target value) given as a multiple of the combined expanded measurement uncertainty of the participant's results and expanded measurement uncertainty for the assigned value (3 significant digits, max. 2 decimal places given). Note: E_n-Score assessment 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
*	mark for additional comments
**	mark for parameters outside the scope of accreditation according to EN ISO/IEC 17043

E5.2. Graphical presentation of results

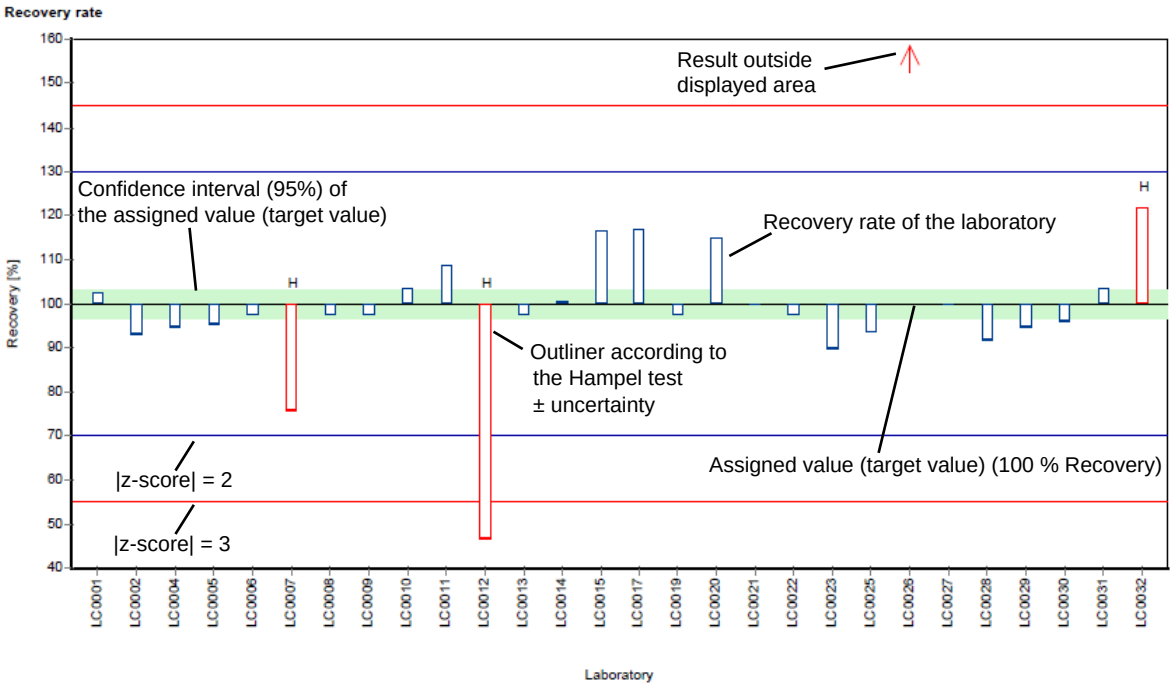
The graphic representation in the report is explained below by means of commented example diagrams:

Example chart: Results



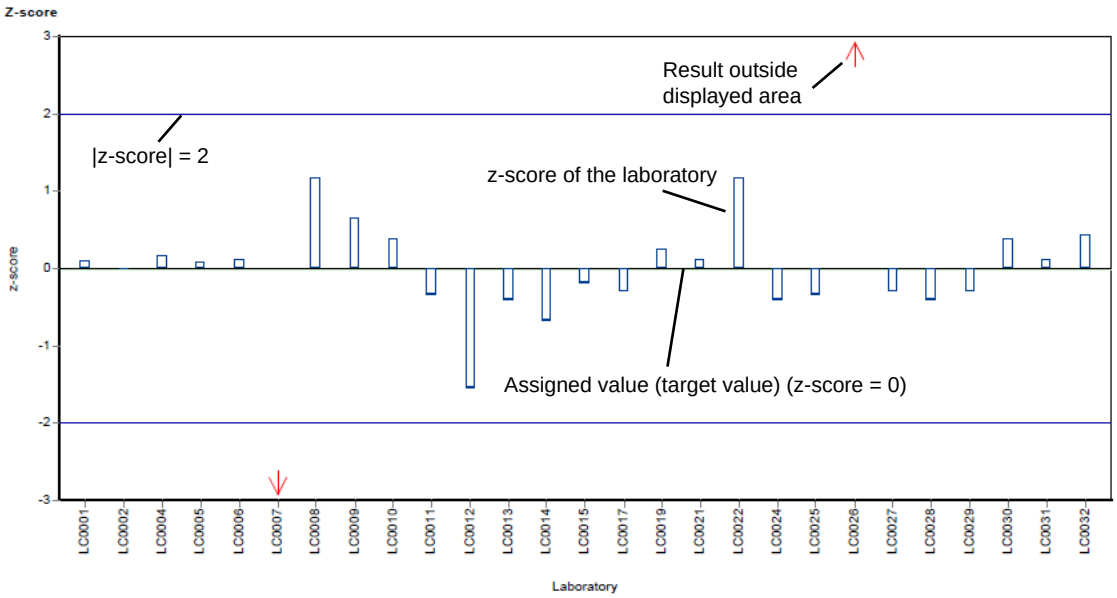
Different analysis methods are represented with different colors.

Example chart: Recovery



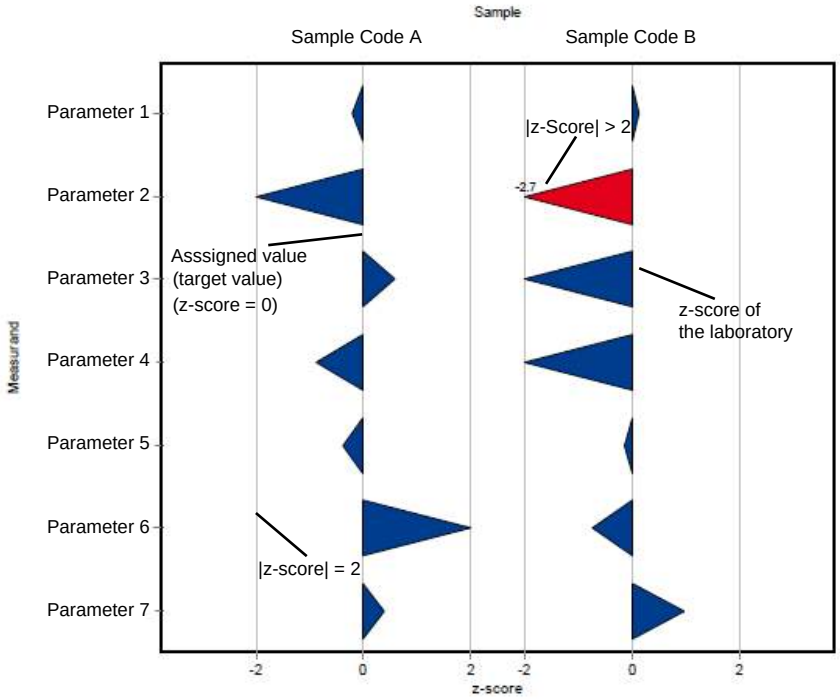
Different analysis methods are represented with different colors.

Example chart: z-score

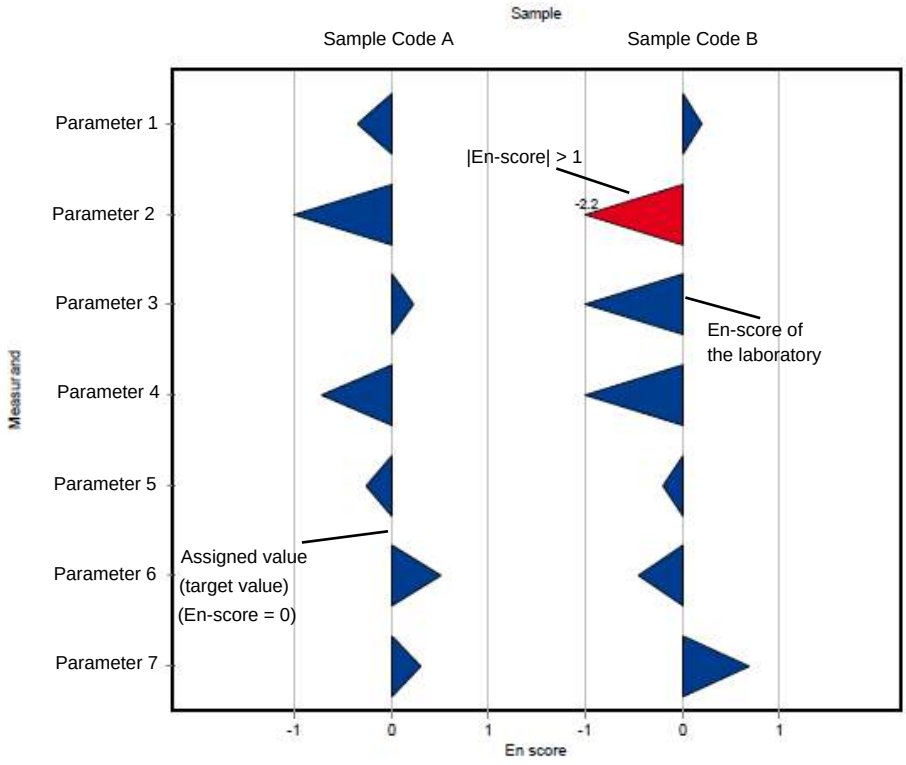


Different analysis methods are represented with different colors.

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 [%]
Acenaphthene	P23 A	ng/l	13.9	±	0.552	2.64	19
	P23 B	ng/l	135	±	6.22	25.7	19
Acenaphthylene	P23 A	ng/l	10.8	±	0.79	2.59	24
	P23 B	ng/l	104	±	5.36	25	24
Anthracene	P23 A	ng/l	12.6	±	0.723	3.29	26
	P23 B	ng/l	171	±	9.03	44.5	26
Benzo[a]anthracene	P23 A	ng/l	16.1	±	1.46	3.37	21
	P23 B	ng/l	109	±	6.92	22.9	21
Benzo[a]pyrene	P23 A	ng/l	12.6	±	2.25	3.03	24
	P23 B	ng/l	109	±	8.57	26.1	24
Benzo[b]fluoranthene	P23 A	ng/l	15.5	±	2.12	2.64	17
	P23 B	ng/l	94.9	±	7.06	16.1	17
Benzo[g,h,i]perylene	P23 A	ng/l	14.1	±	1.46	4.5	32
	P23 B	ng/l	139	±	8.96	44.4	32
Benzo[k]fluoranthene	P23 A	ng/l	15	±	1.5	3.91	26
	P23 B	ng/l	121	±	6.99	31.5	26
Chrysene	P23 A	ng/l	12.9	±	0.849	2.84	22
	P23 B	ng/l	141	±	7.44	31	22
Dibenzo[a,h]anthracene	P23 A	ng/l	16.3	±	2.56	4.89	30
	P23 B	ng/l	117	±	16.8	35.1	30
Fluoranthene	P23 A	ng/l	19.3	±	1.32	3.48	18
	P23 B	ng/l	147	±	7.76	26.4	18
Fluorene	P23 A	ng/l	20.9	±	1.69	2.92	14
	P23 B	ng/l	84.9	±	4.59	11.9	14
Indeno[1,2,3-cd]pyrene	P23 A	ng/l	15.1	±	1.86	3.17	21
	P23 B	ng/l	76.4	±	5.56	10.7	14
Naphthalene	P23 A	ng/l	22.7	±	3.5	4.77	21
	P23 B	ng/l	137	±	8.6	28.9	21
Phenanthrene	P23 A	ng/l	14.8	±	0.953	2.21	15
	P23 B	ng/l	144	±	2.72	21.6	15
Pyrene	P23 A	ng/l	12.6	±	0.683	2.02	16
	P23 B	ng/l	144	±	7.27	23.1	16

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 [%]
Acenaphthene	P23 A	13	2	ng/l	13.9	± 0.829	11.9	15.5	0.996	7.2
	P23 B	16	1	ng/l	135	± 9.33	111	159	12.4	9.2
Acenaphthylene	P23 A	8	2	ng/l	10.8	± 1.19	8.58	12.2	1.12	10
	P23 B	15	1	ng/l	104	± 8.04	82.7	123	10.4	10
Anthracene	P23 A	12	1	ng/l	12.6	± 1.08	10.7	14.4	1.25	9.9
	P23 B	16	1	ng/l	171	± 13.5	140	209	18.1	11
Benzo[a]anthracene	P23 A	14	1	ng/l	16.1	± 2.19	12.8	23.2	2.73	17
	P23 B	15	2	ng/l	109	± 10.4	94.9	139	13.4	12
Benzo[a]pyrene	P23 A	13	0	ng/l	12.6	± 3.37	3.71	19.7	4.05	32
	P23 B	14	4	ng/l	109	± 12.9	92.8	150	16	15
Benzo[b]fluoranthene	P23 A	14	1	ng/l	15.5	± 3.18	5.53	23.5	3.97	26
	P23 B	15	3	ng/l	94.9	± 10.6	79.6	132	13.7	14
Benzo[g,h,i]perylene	P23 A	12	2	ng/l	14.1	± 2.19	10.2	18.7	2.53	18
	P23 B	14	3	ng/l	139	± 13.4	118	175	16.8	12
Benzo[k]fluoranthene	P23 A	15	1	ng/l	15	± 2.25	11.5	20.8	2.9	19
	P23 B	15	3	ng/l	121	± 10.5	107	155	13.5	11
Chrysene	P23 A	13	1	ng/l	12.9	± 1.27	10.6	15.8	1.53	12
	P23 B	15	2	ng/l	141	± 11.2	122	170	14.4	10
Dibenzo[a,h]anthracene	P23 A	14	0	ng/l	16.3	± 3.85	5.14	22.9	4.8	29
	P23 B	16	0	ng/l	117	± 25.3	37.5	180	33.7	29
Fluoranthene	P23 A	15	1	ng/l	19.3	± 1.99	15	23.3	2.56	13
	P23 B	15	2	ng/l	147	± 11.6	126	176	15	10
Fluorene	P23 A	14	1	ng/l	20.9	± 2.53	16.3	28.5	3.16	15
	P23 B	16	1	ng/l	84.9	± 6.88	70.1	104	9.18	11
Indeno[1,2,3-cd]pyrene	P23 A	12	2	ng/l	15.1	± 2.8	10.2	22	3.23	21
	P23 B	14	3	ng/l	76.4	± 8.35	62	95	10.4	14
Naphthalene	P23 A	14	0	ng/l	22.7	± 5.25	12.2	36.1	6.55	29
	P23 B	14	2	ng/l	137	± 12.9	106	173	16.1	12
Phenanthrene	P23 A	14	1	ng/l	14.8	± 1.43	11.5	18	1.78	12
	P23 B	13	4	ng/l	144	± 4.09	138	155	4.91	3.4
Pyrene	P23 A	12	2	ng/l	12.6	± 1.02	10.8	14.7	1.18	9.4

Parameter	Sample	Number of results for calculation	Number of outliers	Unit	Mean	± CI (99%)	Minimum	Maximum	sR	vR [%]
Pyrene	P23 B	15	2	ng/l	144	± 10.9	127	170	14.1	9.7

E7. Parameterorientierte Auswertung / Parameter oriented report

Parameter oriented report

P23 A

Acenaphthene

Unit	ng/l
Assigned value ± U (k=2)	13.9 ± 0.552
Criterion	2.64 (19 %)
Minimum - Maximum	11.9 - 15.5
Control test value ± U (k=2)	19.80 ± 6.93

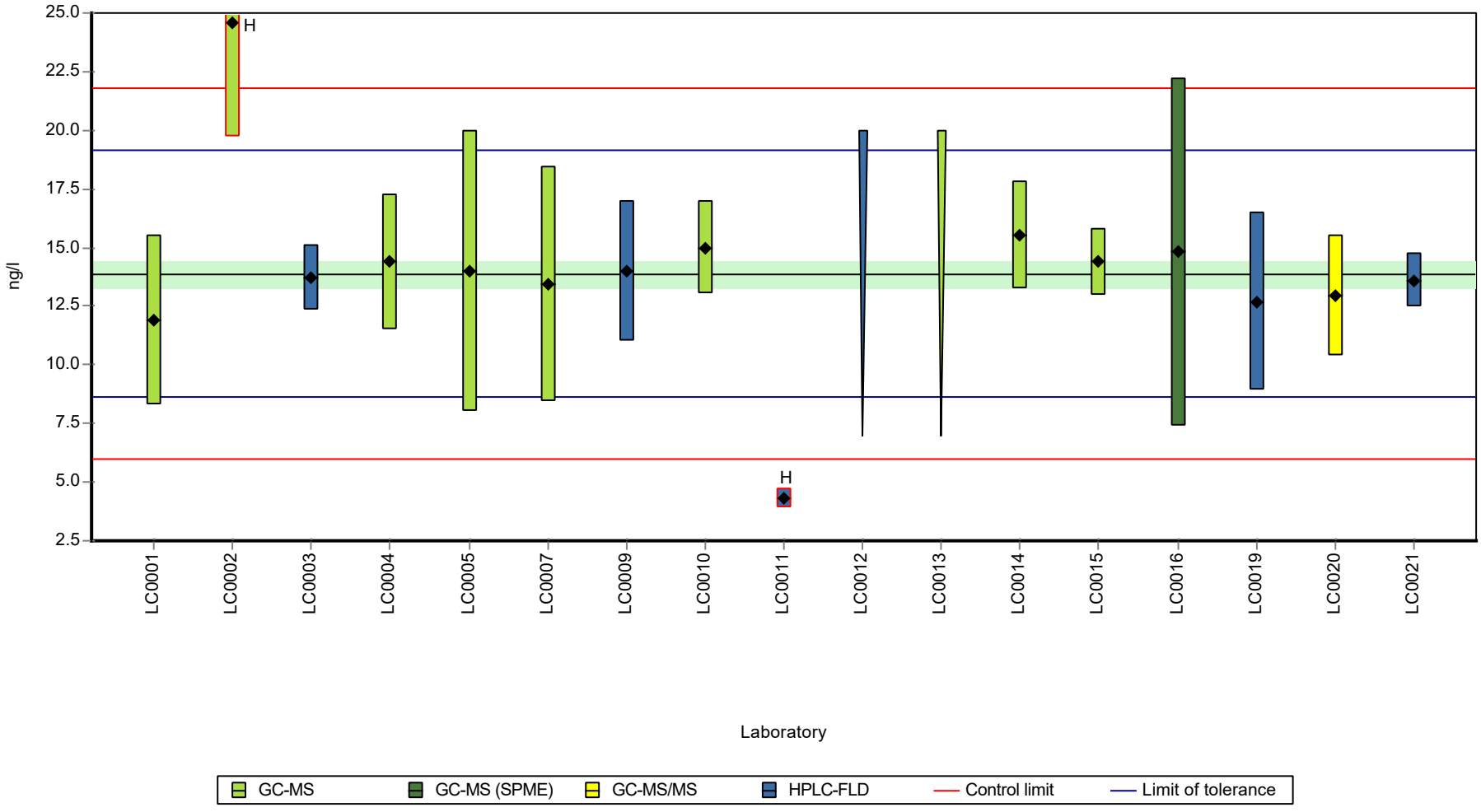
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	11.9	3.6	85.8	-0.75	
LC0002	24.6	4.9	177	4.07	H
LC0003	13.7	1.4	98.7	-0.07	
LC0004	14.4	2.9	104	0.2	
LC0005	14	6	101	0.05	
LC0006	-	-	-	-	
LC0007	13.44	5	96.9	-0.17	
LC0008	-	-	-	-	
LC0009	14	3	101	0.05	
LC0010	15	2	108	0.43	
LC0011	4.31	0.431	31.1	-3.63	H
LC0012	< 20 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	15.53	2.27	112	0.63	
LC0015	14.39	1.44	104	0.2	
LC0016	14.8	7.4	107	0.35	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	12.7	3.8	91.5	-0.45	
LC0020	12.93	2.59	93.2	-0.36	
LC0021	13.6	1.15	98	-0.1	

Characteristics of parameter

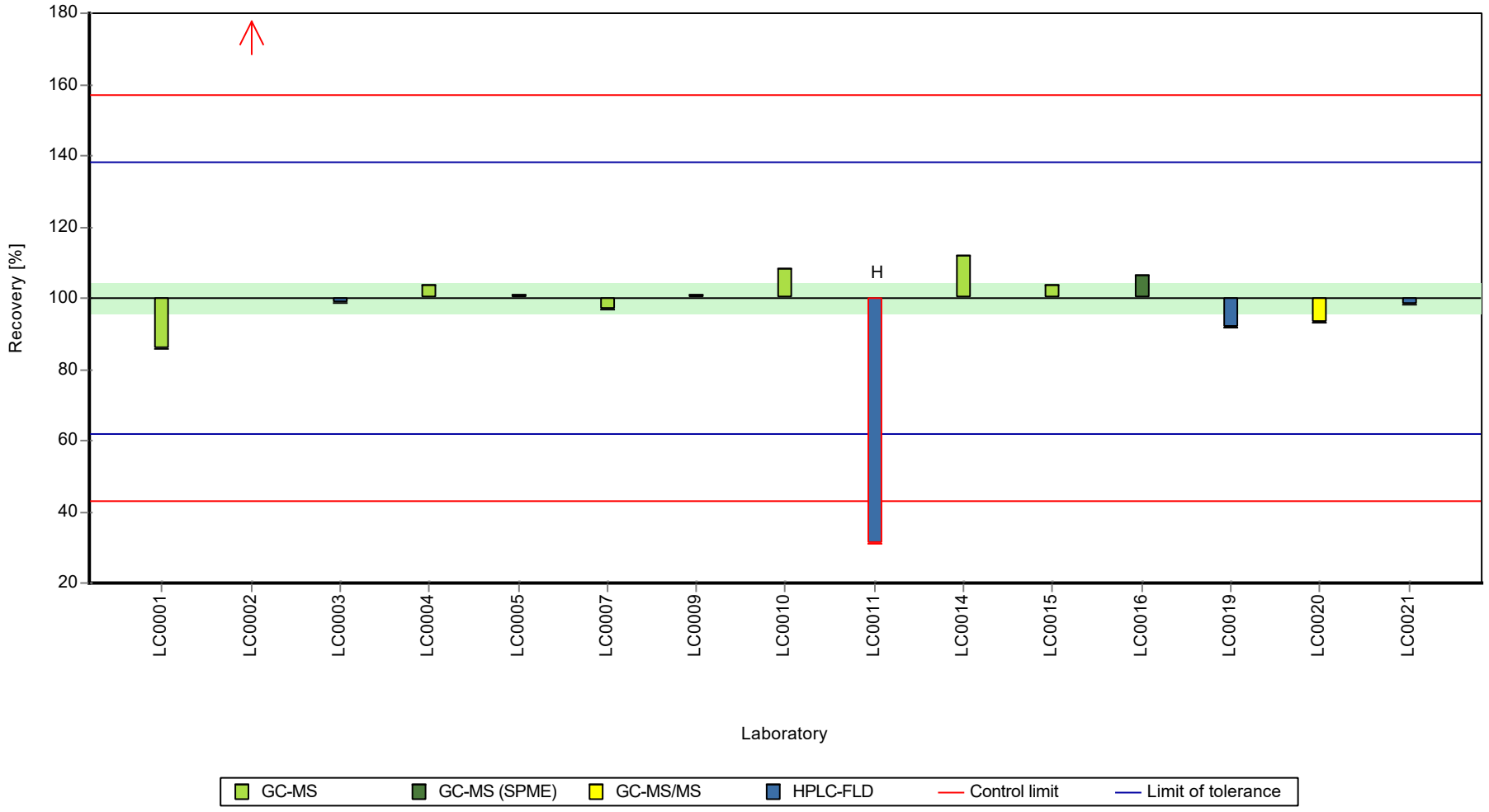
	all results	without outliers	Unit
Mean ± CI (99%)	14 ± 3.06	13.9 ± 0.829	ng/l
Minimum	4.31	11.9	ng/l
Maximum	24.6	15.5	ng/l
Standard deviation	3.95	0.996	ng/l
rel. standard deviation	28.3	7.18	%
n	15	13	-

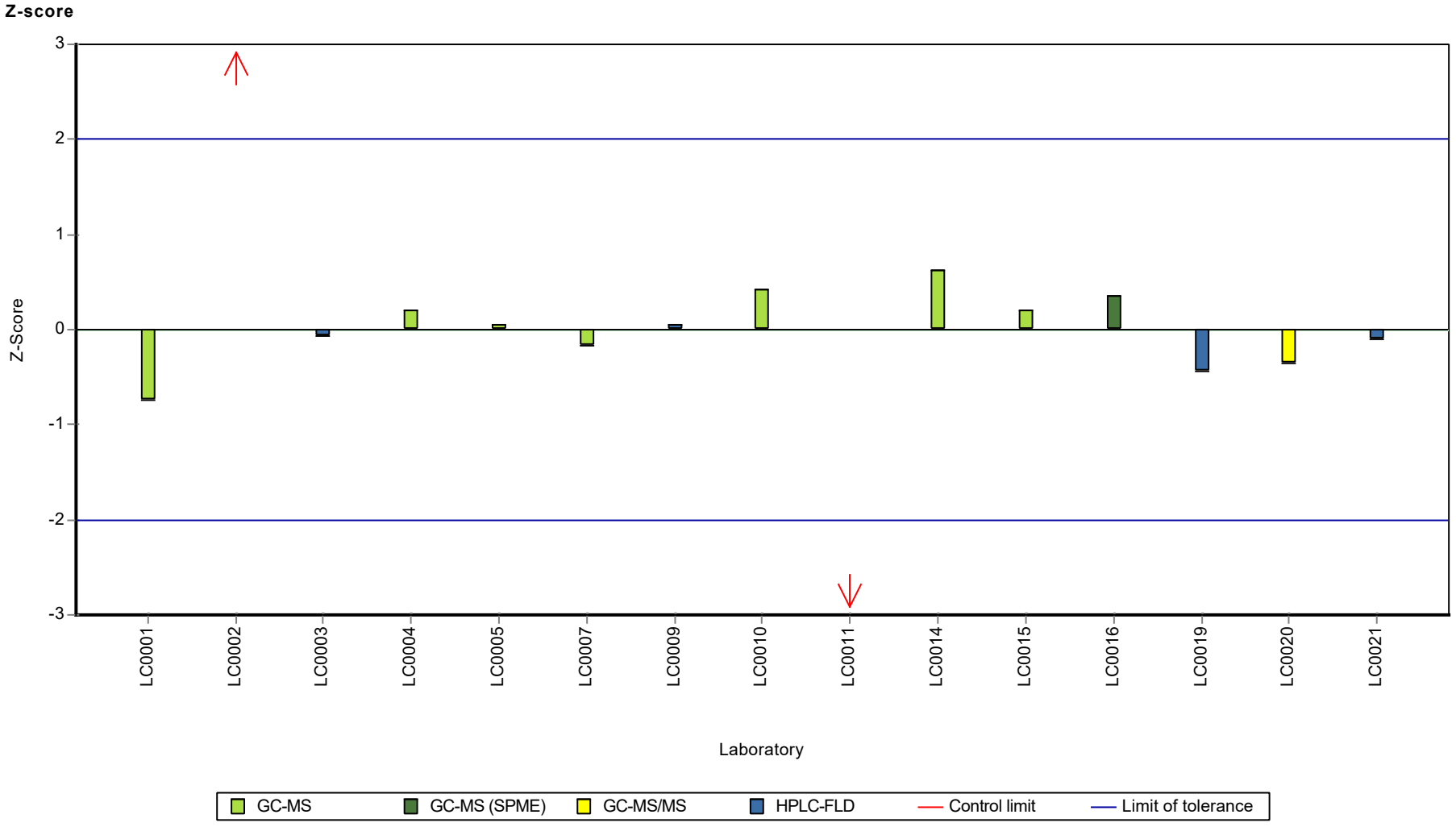
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Acenaphthene

Unit	ng/l
Assigned value ± U (k=2)	135 ± 6.22
Criterion	25.7 (19 %)
Minimum - Maximum	111 - 159
Control test value ± U (k=2)	157.0 ± 54.8

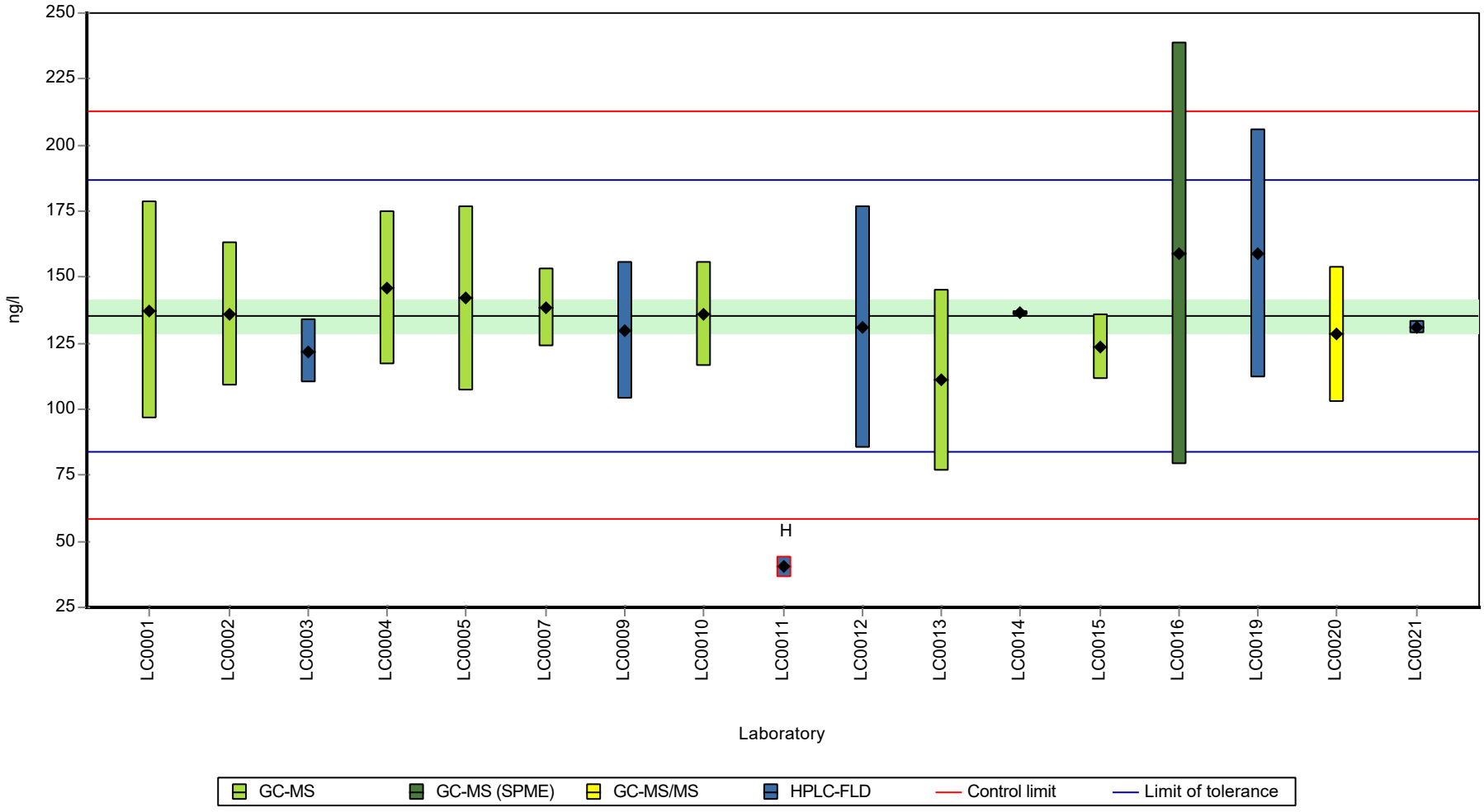
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	137.4	41.2	101	0.08	
LC0002	136	27.2	100	0.02	
LC0003	122	12	90.1	-0.52	
LC0004	146	29	108	0.41	
LC0005	142	35	105	0.26	
LC0006	-	-	-	-	
LC0007	138.28	15	102	0.11	
LC0008	-	-	-	-	
LC0009	130	26	96	-0.21	
LC0010	136	20	100	0.02	
LC0011	40.2	4.02	29.7	-3.7	H
LC0012	131	46	96.7	-0.17	
LC0013	111	34.4	82	-0.95	
LC0014	136.35	1.07	101	0.04	
LC0015	123.37	12.34	91.1	-0.47	
LC0016	159	80	117	0.92	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	159	47	117	0.92	
LC0020	128.44	25.69	94.8	-0.27	
LC0021	131	2.32	96.7	-0.17	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	130 ± 19	135 ± 9.33	ng/l
Minimum	40.2	111	ng/l
Maximum	159	159	ng/l
Standard deviation	26	12.4	ng/l
rel. standard deviation	20.1	9.18	%
n	17	16	-

Graphical presentation of results

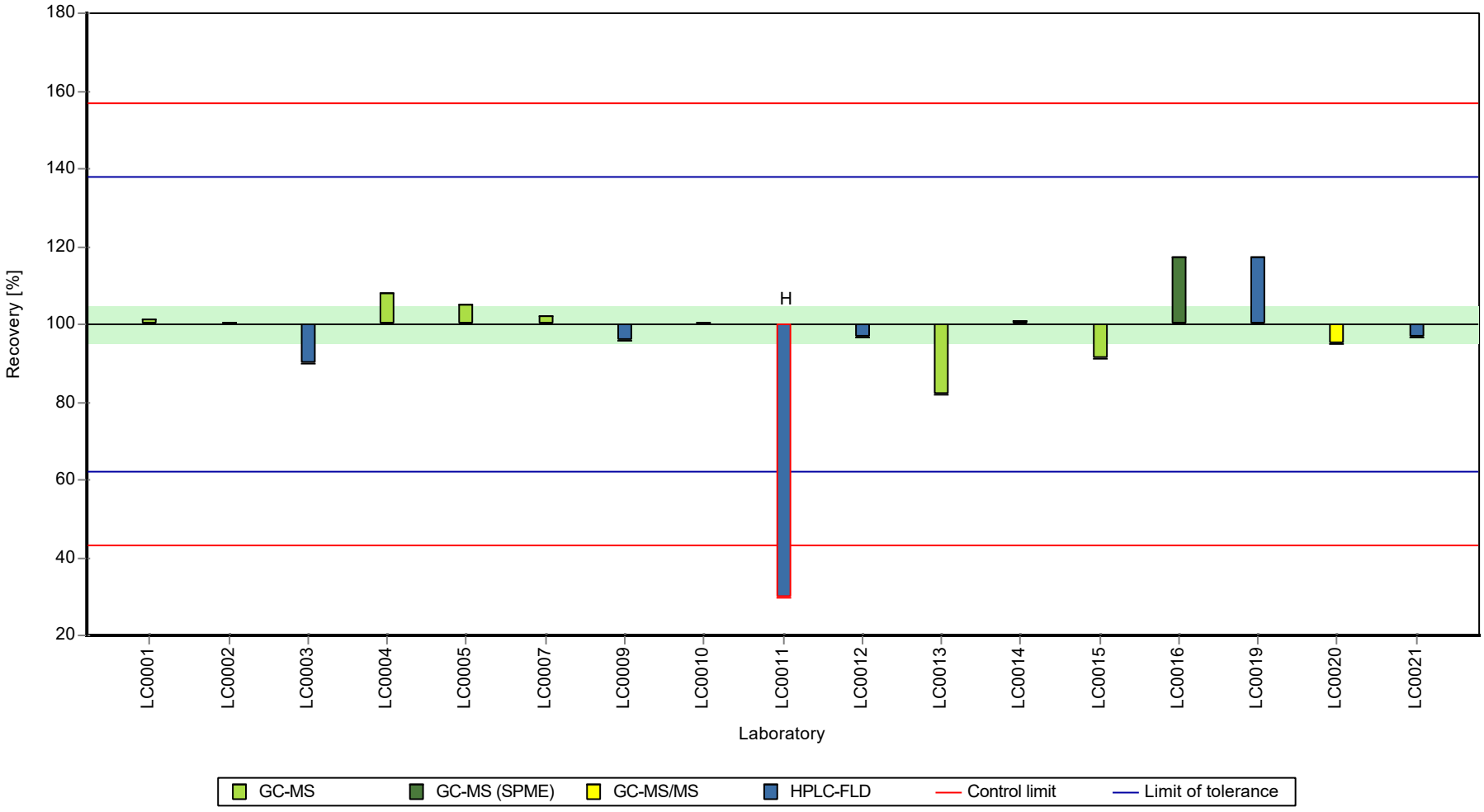
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

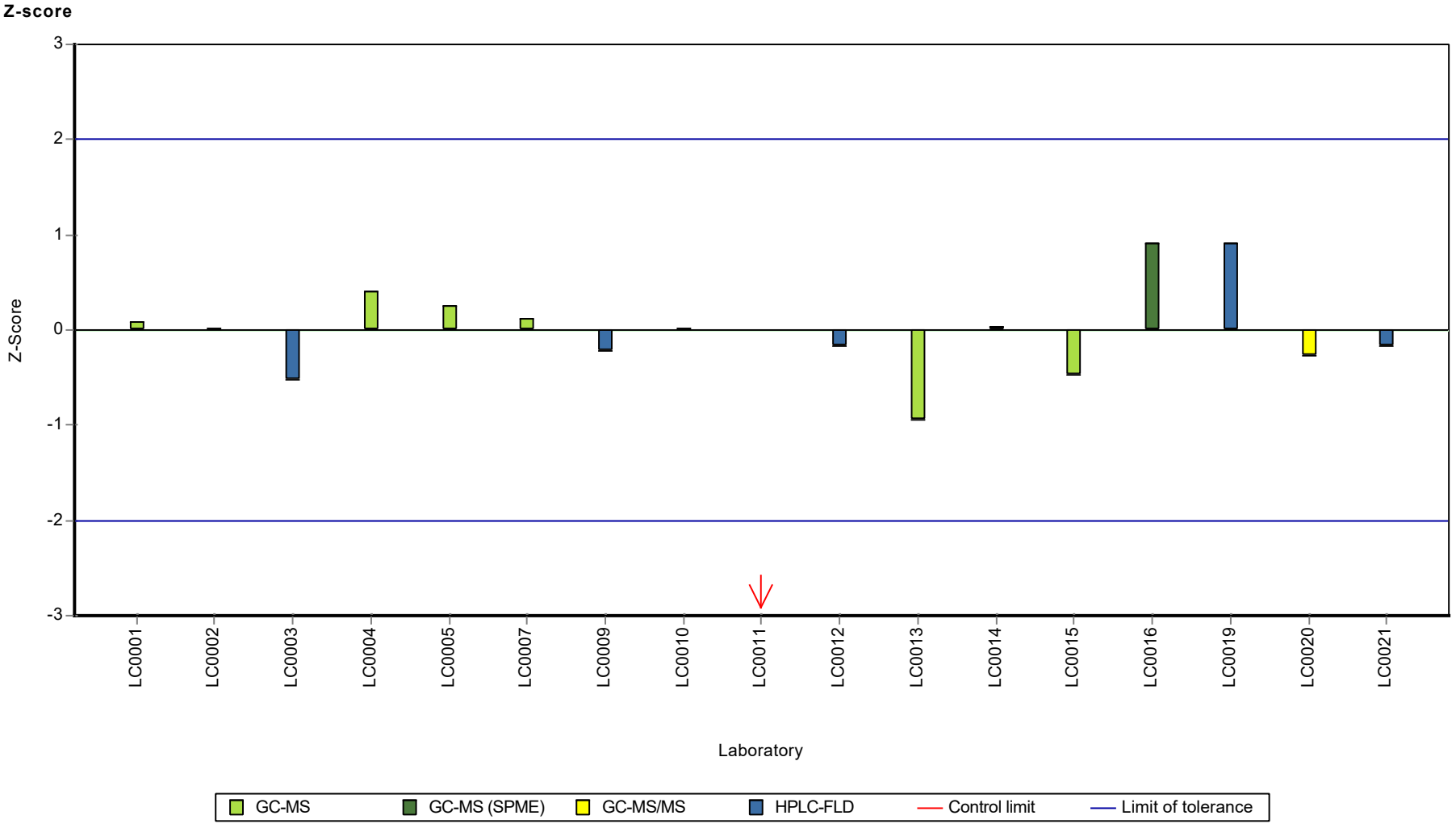
Sample: P23B, Parameter: Acenaphthene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Acenaphthene



Parameter oriented report

P23 A

Acenaphthylene

Unit	ng/l
Assigned value ± U (k=2)	10.8 ± 0.79
Criterion	2.59 (24 %)
Minimum - Maximum	8.58 - 12.2
Control test value ± U (k=2)	13.00 ± 3.91

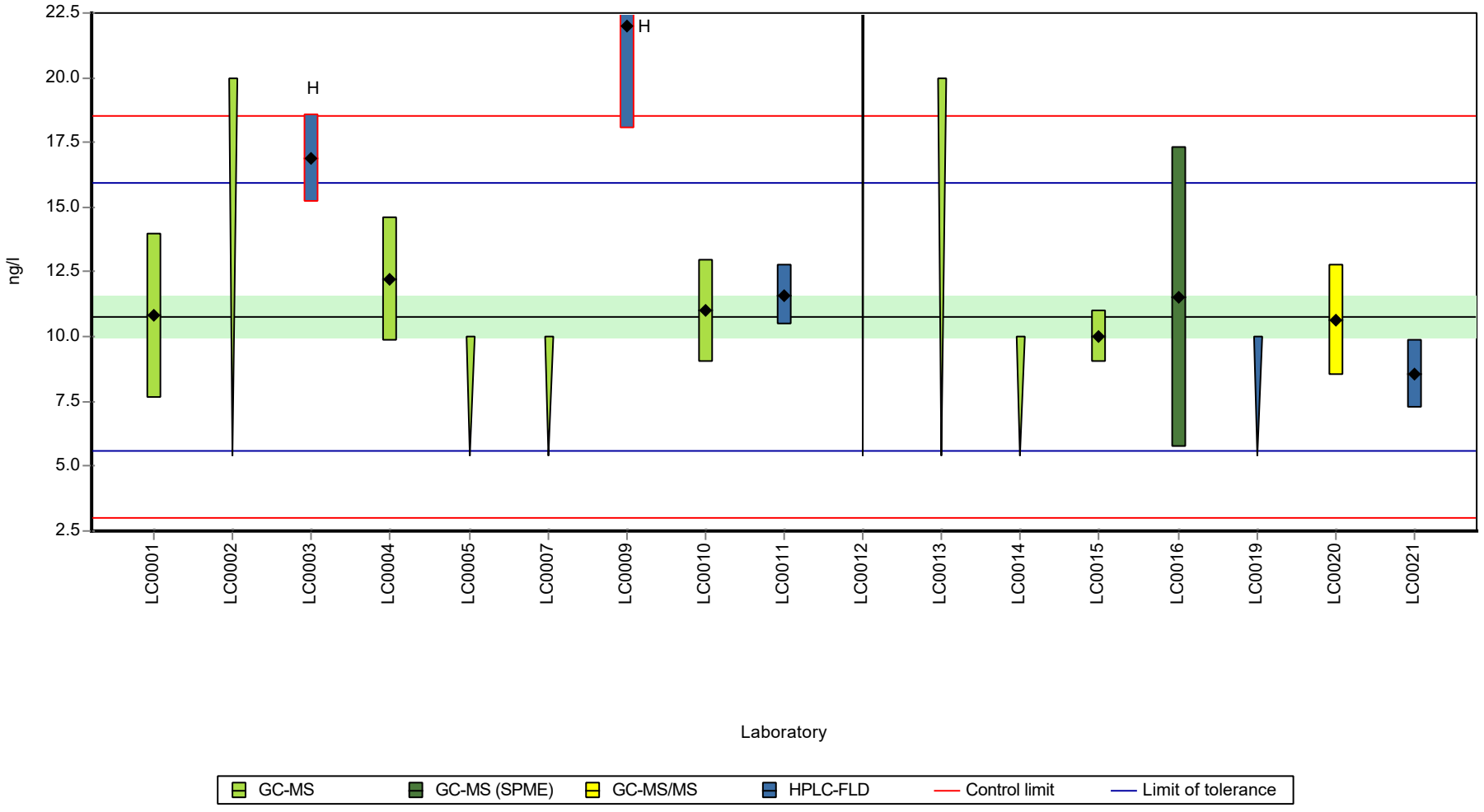
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	10.8	3.2	100	0.00	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	16.9	1.7	157	2.36	H
LC0004	12.2	2.4	113	0.55	
LC0005	< 10 (LOQ)	-	-	-	
LC0006	-	-	-	-	
LC0007	< 10 (LOQ)	-	-	-	
LC0008	-	-	-	-	
LC0009	22	4	204	4.33	H
LC0010	11	2	102	0.08	
LC0011	11.6	1.16	108	0.31	
LC0012	< 100 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	< 10 (LOQ)	-	-	-	
LC0015	9.99	1	92.6	-0.31	
LC0016	11.5	5.8	107	0.28	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	< 10 (LOQ)	-	-	-	
LC0020	10.63	2.13	98.5	-0.06	
LC0021	8.58	1.32	79.5	-0.85	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	12.5 ± 3.77	10.8 ± 1.19	ng/l
Minimum	8.58	8.58	ng/l
Maximum	22	12.2	ng/l
Standard deviation	3.97	1.12	ng/l
rel. standard deviation	31.7	10.4	%
n	10	8	-

Graphical presentation of results

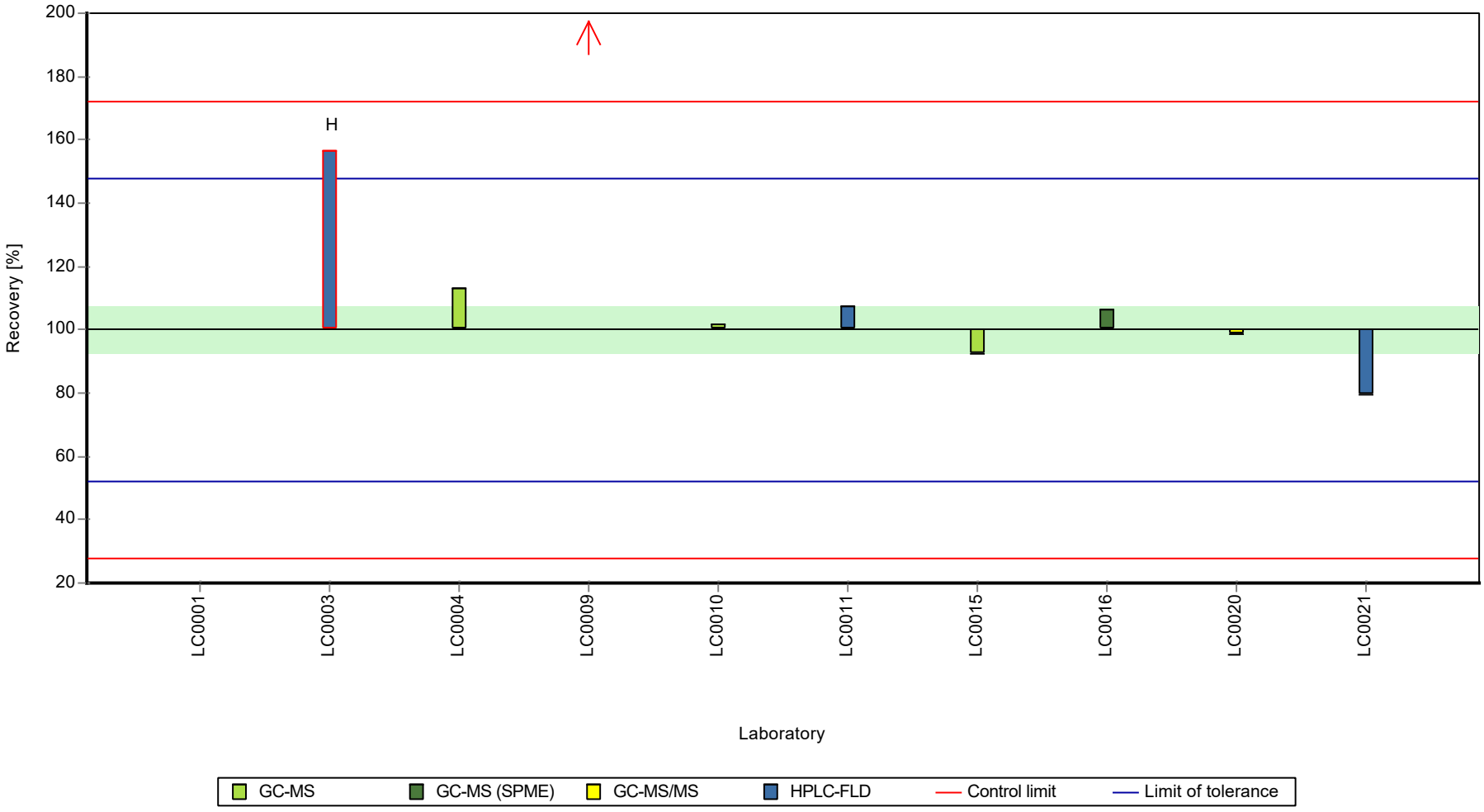
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

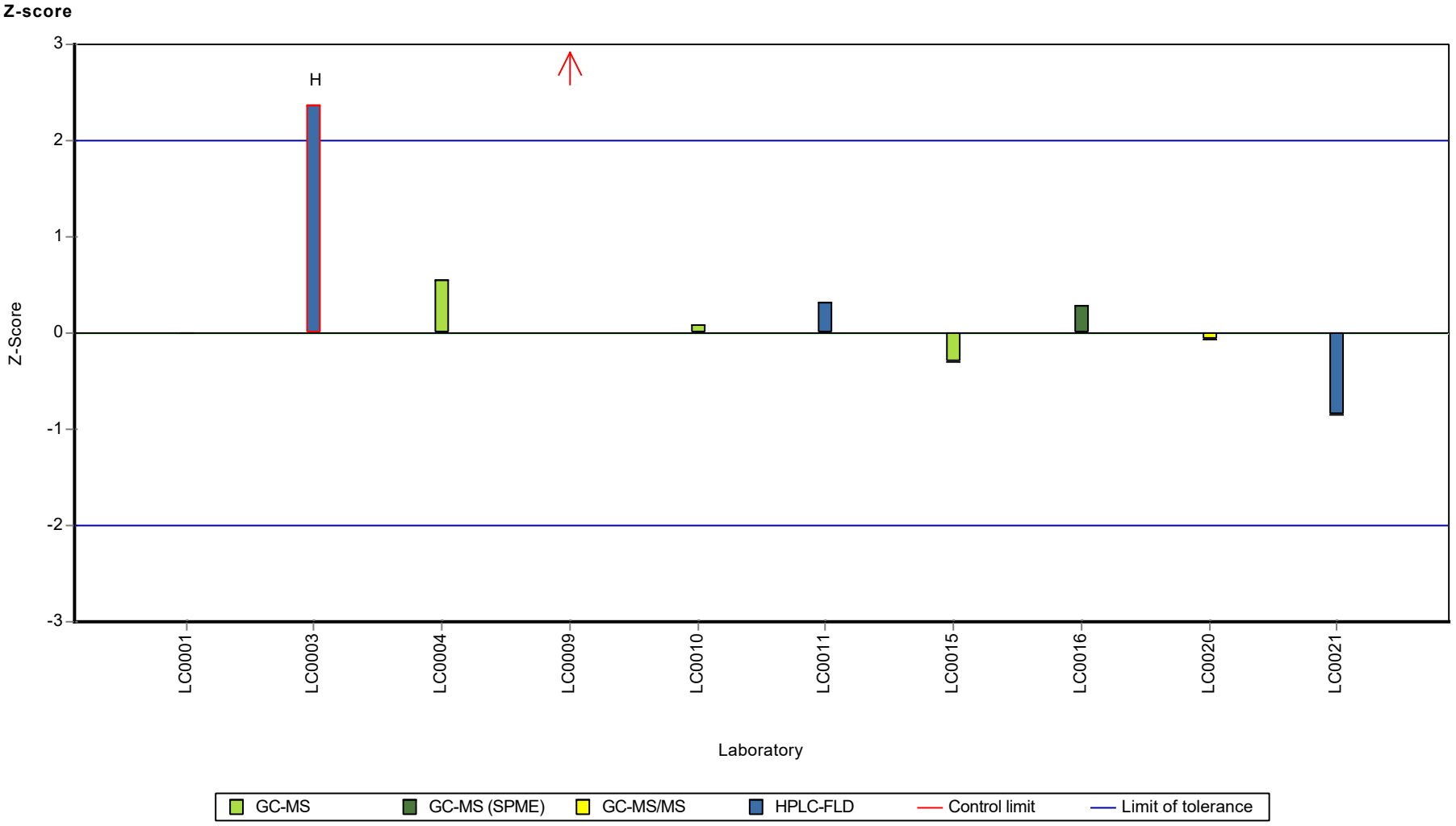
Sample: P23A, Parameter: Acenaphthylene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Acenaphthylene



Parameter oriented report

P23 B

Acenaphthylene

Unit	ng/l
Assigned value ± U (k=2)	104 ± 5.36
Criterion	25 (24 %)
Minimum - Maximum	82.7 - 123
Control test value ± U (k=2)	118.0 ± 35.4

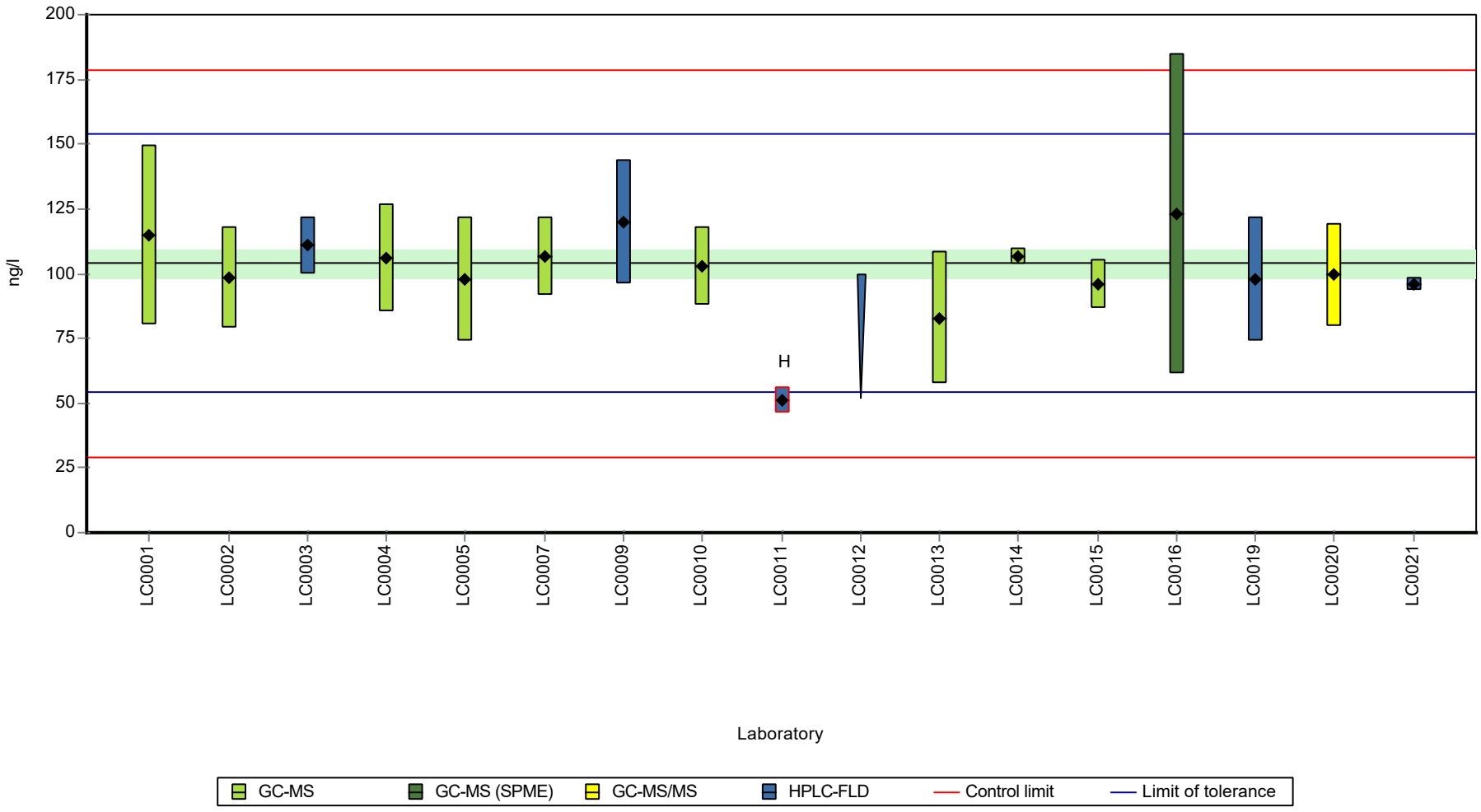
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	114.9	34.5	110	0.44	
LC0002	98.5	19.7	94.7	-0.22	
LC0003	111	11	107	0.28	
LC0004	106	21	102	0.08	
LC0005	98	24	94.2	-0.24	
LC0006	-	-	-	-	
LC0007	106.66	15	103	0.11	
LC0008	-	-	-	-	
LC0009	120	24	115	0.64	
LC0010	103	15	99.1	-0.04	
LC0011	51.3	5.13	49.3	-2.11	H
LC0012	< 100 (LOQ)	-	-	-	
LC0013	82.7	25.6	79.5	-0.85	
LC0014	106.64	2.89	103	0.11	
LC0015	96.01	9.6	92.3	-0.32	
LC0016	123	62	118	0.76	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	98	24	94.2	-0.24	
LC0020	99.5	19.9	95.7	-0.18	
LC0021	95.9	2.64	92.2	-0.32	

Characteristics of parameter

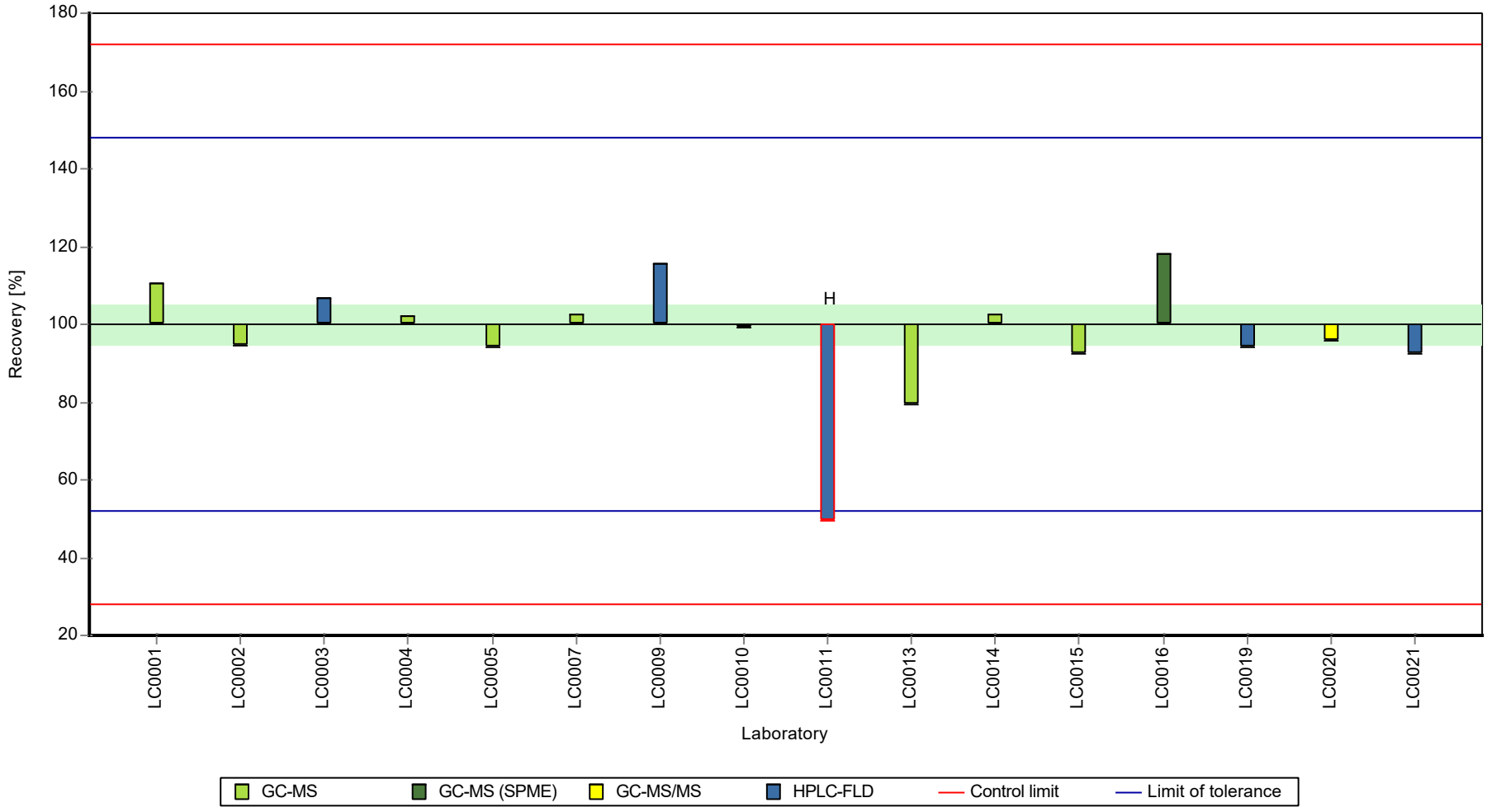
	all results	without outliers	Unit
Mean ± CI (99%)	101 ± 12.4	104 ± 8.04	ng/l
Minimum	51.3	82.7	ng/l
Maximum	123	123	ng/l
Standard deviation	16.6	10.4	ng/l
rel. standard deviation	16.4	9.99	%
n	16	15	-

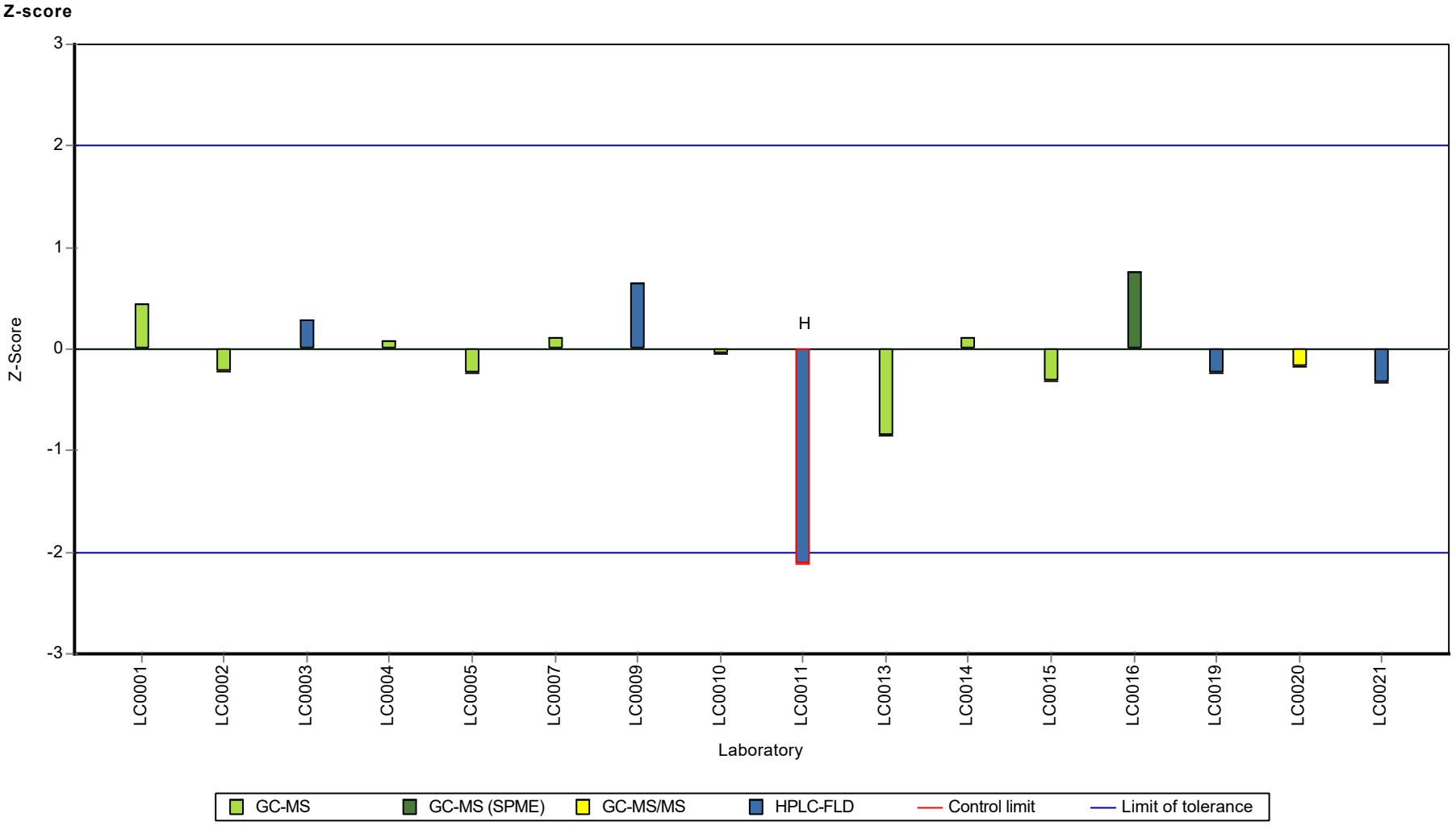
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
H
LC0001
LC0002
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 A

Anthracene

Unit	ng/l
Assigned value ± U (k=2)	12.6 ± 0.723
Criterion	3.29 (26 %)
Minimum - Maximum	10.7 - 14.4
Control test value ± U (k=2)	16.60 ± 4.14

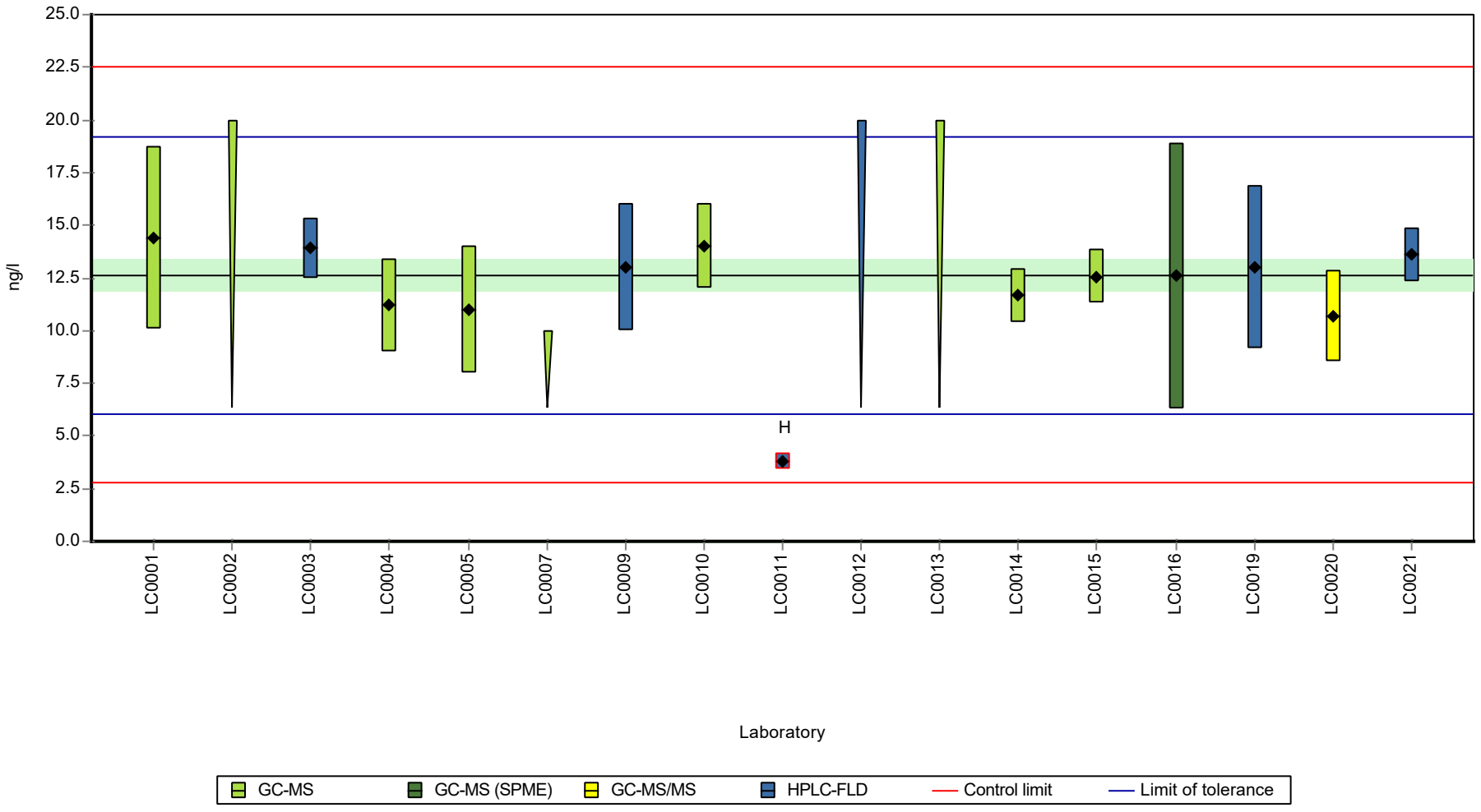
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	14.4	4.3	114	0.54	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	13.9	1.4	110	0.39	
LC0004	11.2	2.2	88.6	-0.44	
LC0005	11	3	87.1	-0.5	
LC0006	-	-	-	-	
LC0007	< 10 (LOQ)	-	-	-	
LC0008	-	-	-	-	
LC0009	13	3	103	0.11	
LC0010	14	2	111	0.42	
LC0011	3.79	0.379	30	-2.69	H
LC0012	< 20 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	11.68	1.27	92.4	-0.29	
LC0015	12.56	1.26	99.4	-0.02	
LC0016	12.6	6.3	99.7	-0.01	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	13	3.9	103	0.11	
LC0020	10.68	2.14	84.5	-0.59	
LC0021	13.6	1.26	108	0.29	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	12 ± 2.27	12.6 ± 1.08	ng/l
Minimum	3.79	10.7	ng/l
Maximum	14.4	14.4	ng/l
Standard deviation	2.73	1.25	ng/l
rel. standard deviation	22.8	9.91	%
n	13	12	-

Graphical presentation of results

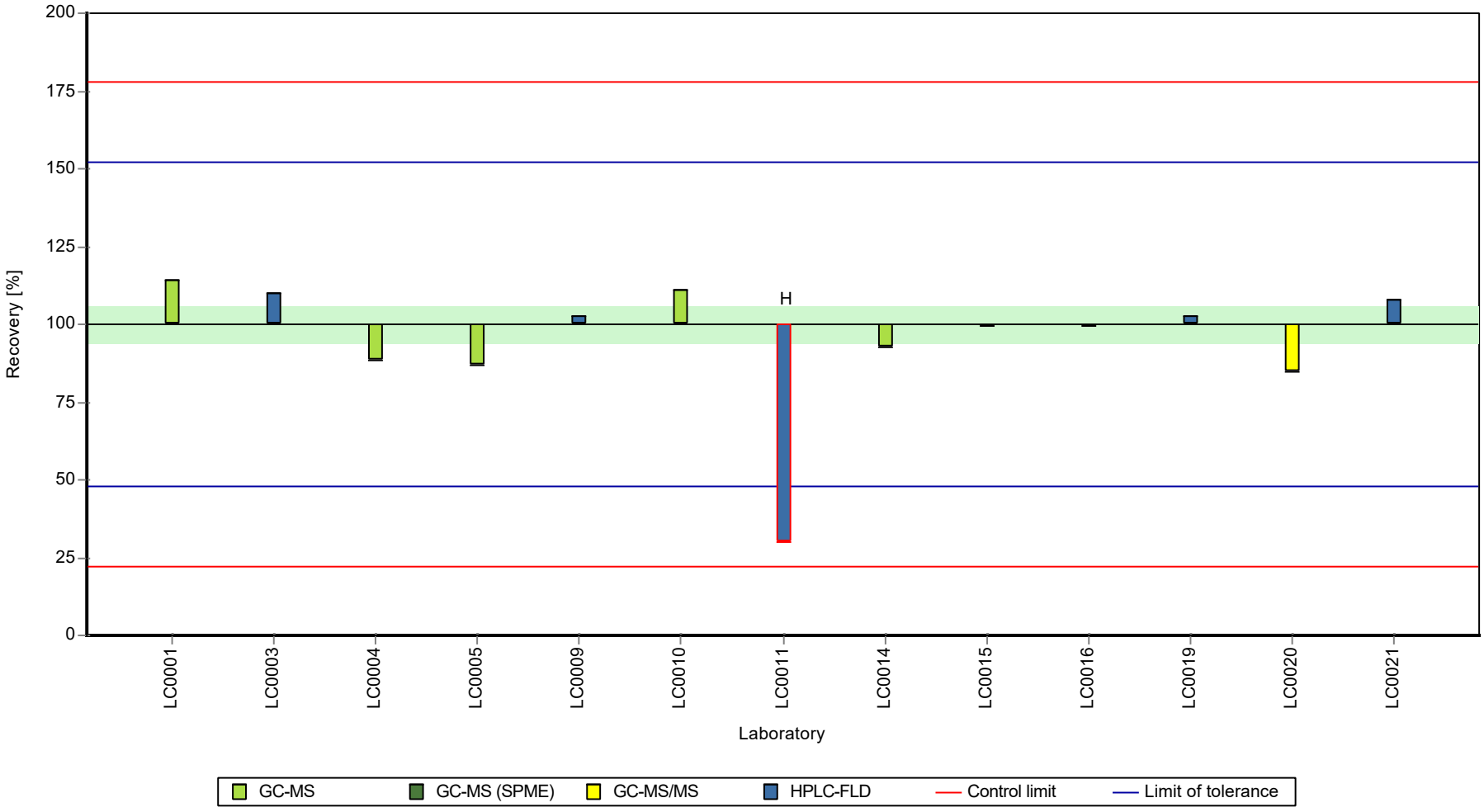
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

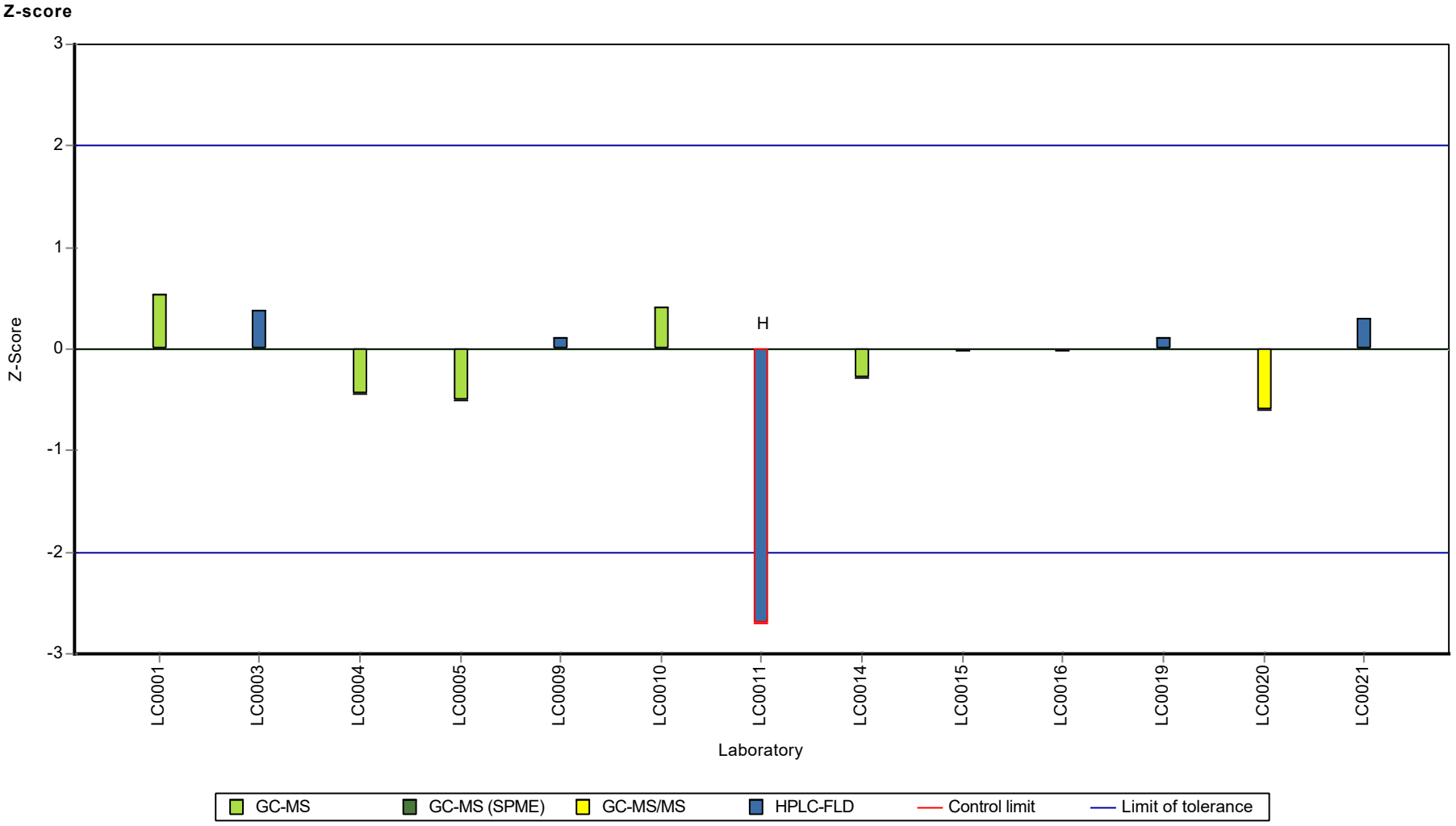
Sample: P23A, Parameter: Anthracene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Anthracene



Parameter oriented report

P23 B

Anthracene

Unit	ng/l
Assigned value ± U (k=2)	171 ± 9.03
Criterion	44.5 (26 %)
Minimum - Maximum	140 - 209
Control test value ± U (k=2)	192.0 ± 48

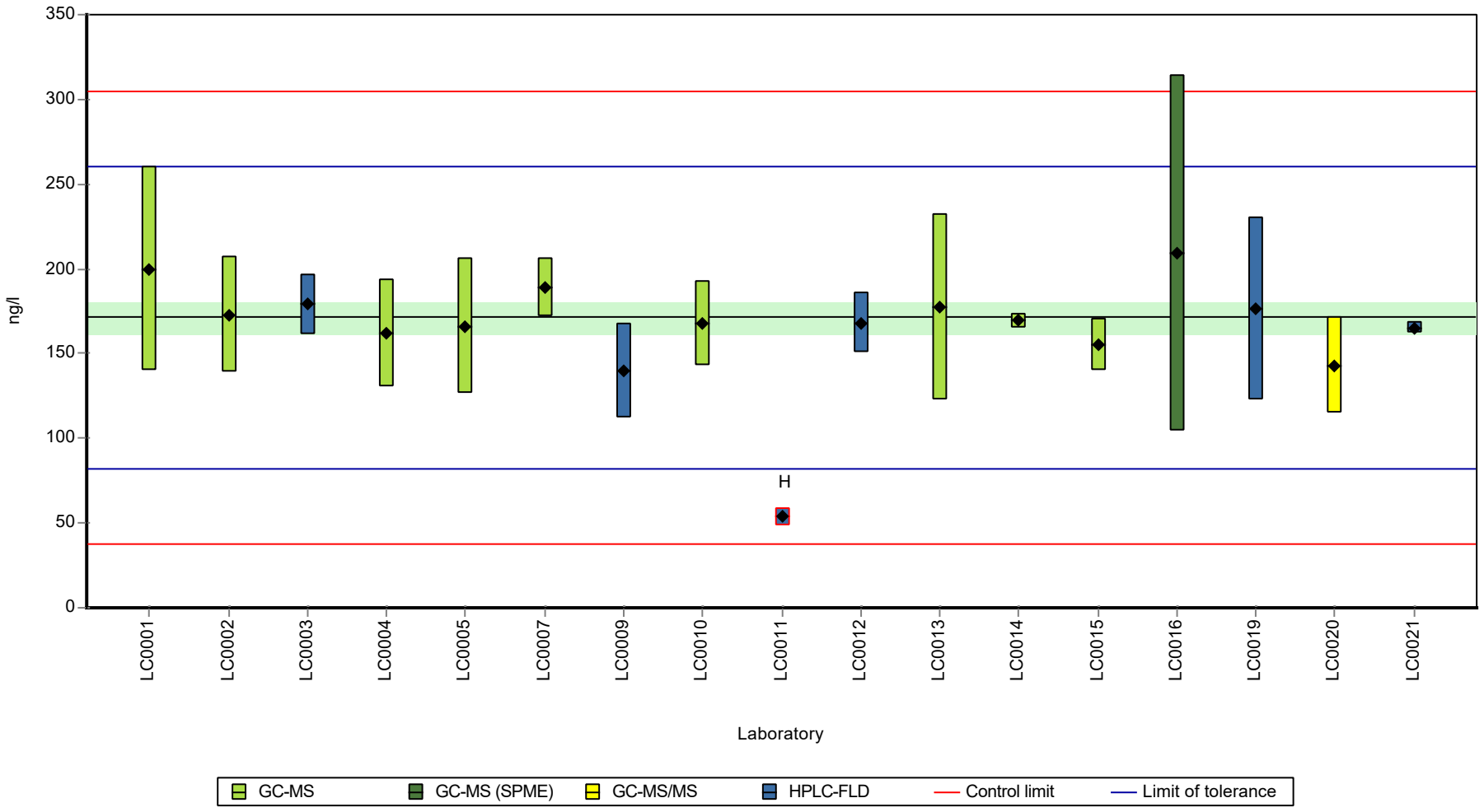
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	199.9	60	117	0.64	
LC0002	173	34.6	101	0.04	
LC0003	179	18	105	0.17	
LC0004	162	32	94.6	-0.21	
LC0005	166	40	96.9	-0.12	
LC0006	-	-	-	-	
LC0007	188.98	17	110	0.4	
LC0008	-	-	-	-	
LC0009	140	28	81.8	-0.7	
LC0010	168	25	98.1	-0.07	
LC0011	53.8	5.38	31.4	-2.64	H
LC0012	168	18	98.1	-0.07	
LC0013	177	54.9	103	0.13	
LC0014	169.59	4.39	99	-0.04	
LC0015	155.22	15.52	90.7	-0.36	
LC0016	209	105	122	0.85	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	176	54	103	0.11	
LC0020	142.93	28.59	83.5	-0.64	
LC0021	165	3.36	96.4	-0.14	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	164 ± 24.3	171 ± 13.5	ng/l
Minimum	53.8	140	ng/l
Maximum	209	209	ng/l
Standard deviation	33.4	18.1	ng/l
rel. standard deviation	20.3	10.5	%
n	17	16	-

Graphical presentation of results

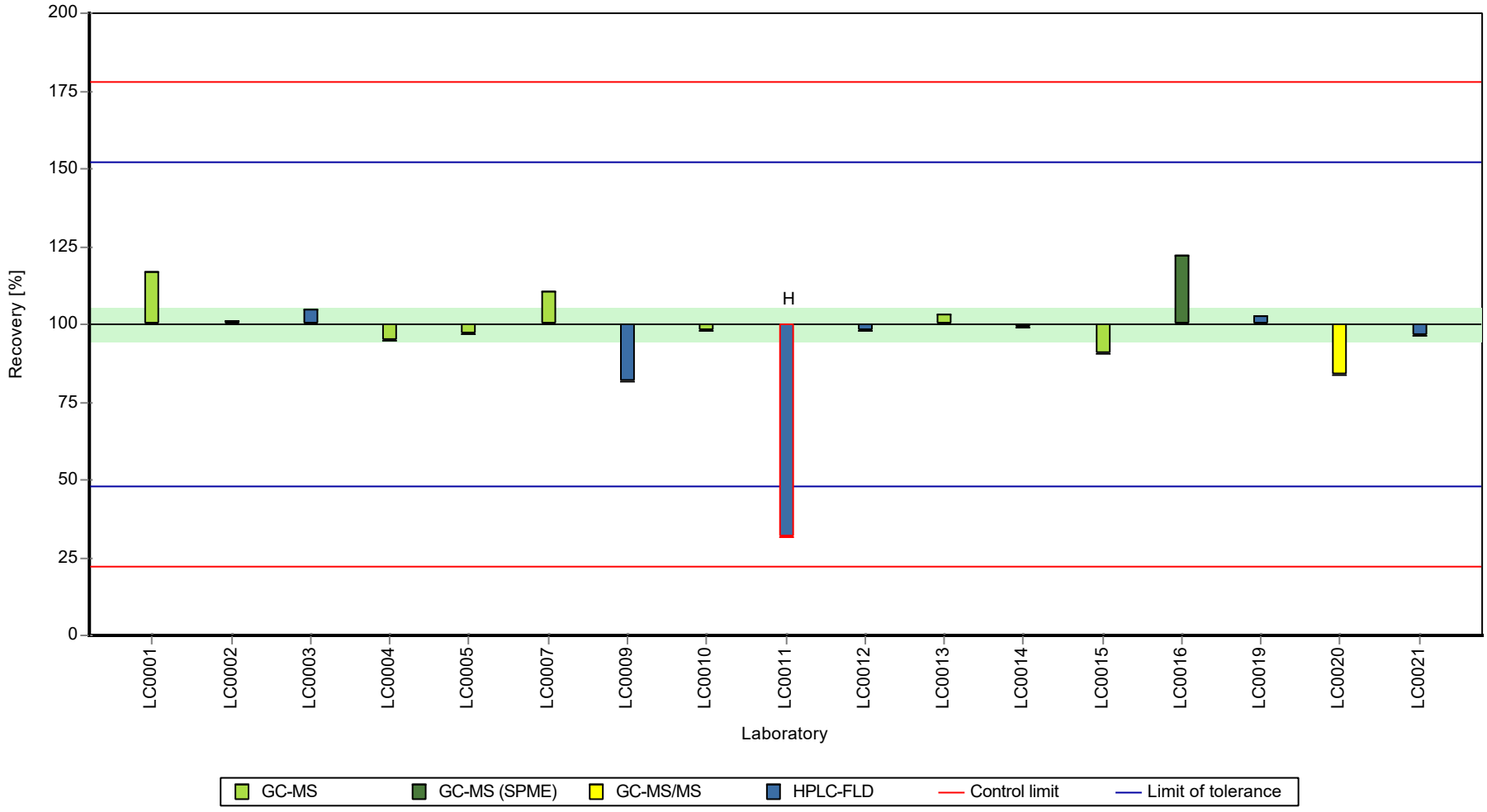
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

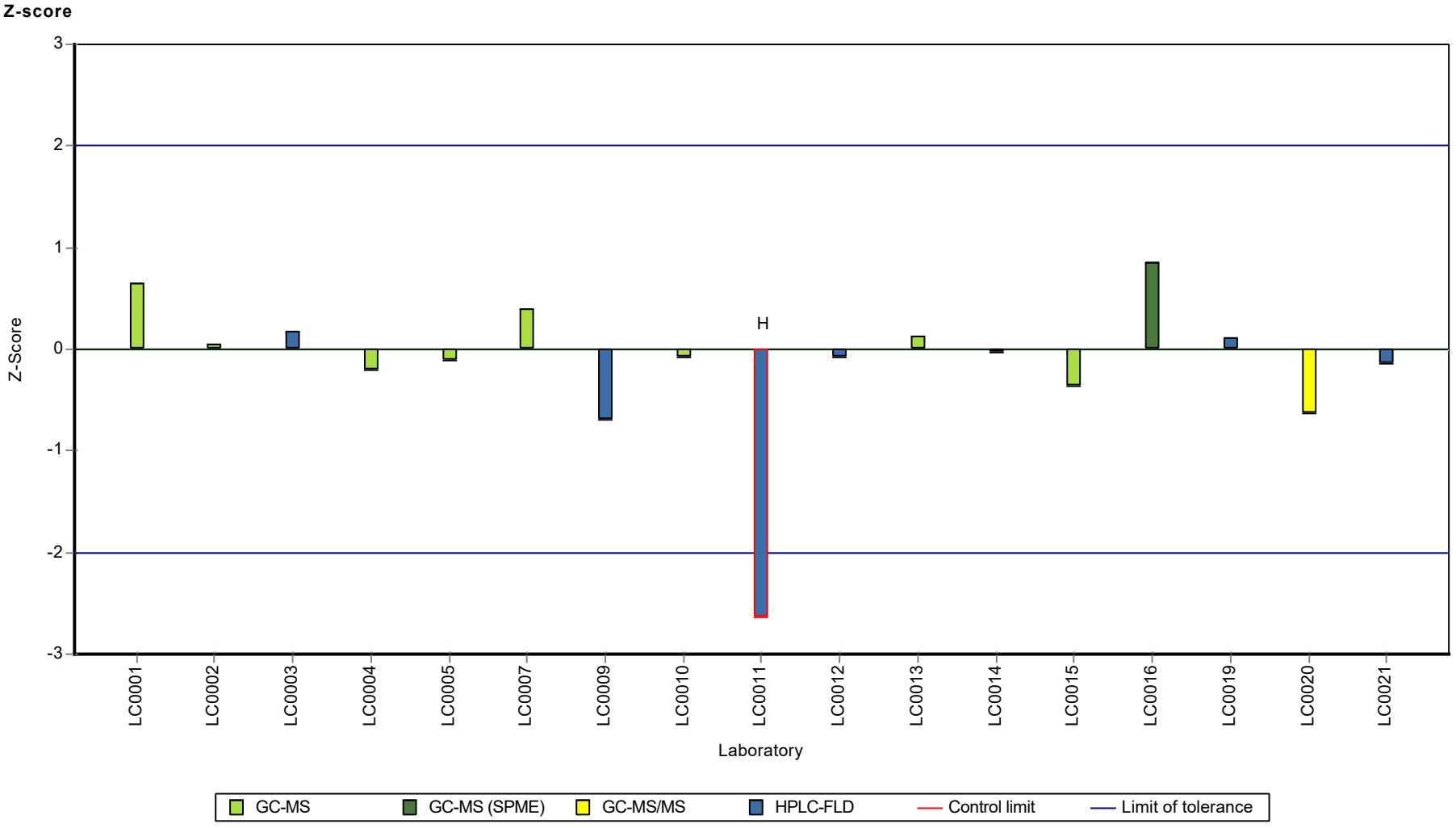
Sample: P23B, Parameter: Anthracene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Anthracene



Parameter oriented report

P23 A

Benzo[a]anthracene

Unit	ng/l
Assigned value ± U (k=2)	16.1 ± 1.46
Criterion	3.37 (21 %)
Minimum - Maximum	12.8 - 23.2
Control test value ± U (k=2)	19.20 ± 4.8

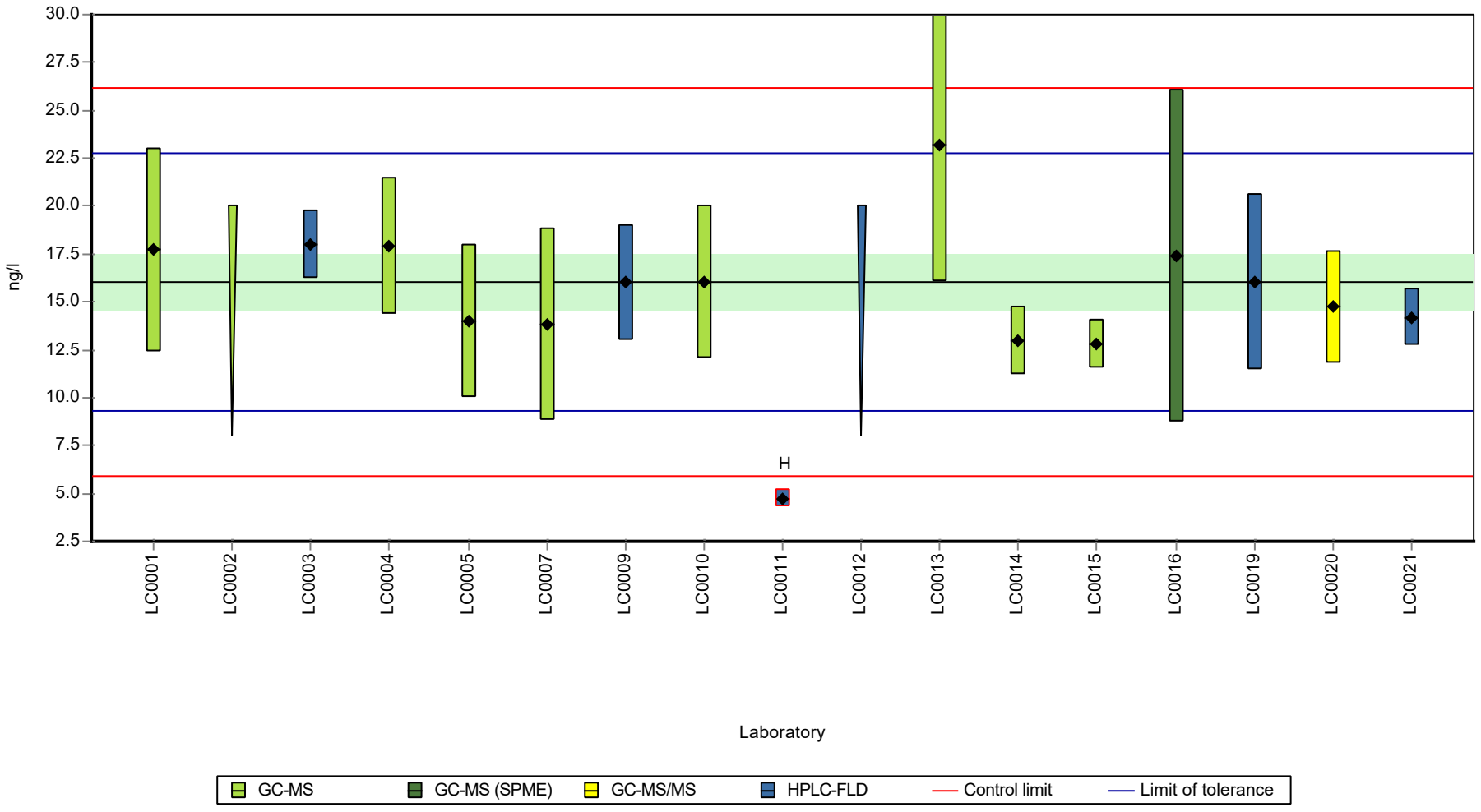
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	17.7	5.3	110	0.49	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	18	1.8	112	0.58	
LC0004	17.9	3.6	112	0.55	
LC0005	14	4	87.2	-0.61	
LC0006	-	-	-	-	
LC0007	13.83	5	86.1	-0.66	
LC0008	-	-	-	-	
LC0009	16	3	99.7	-0.02	
LC0010	16	4	99.7	-0.02	
LC0011	4.72	0.472	29.4	-3.36	H
LC0012	< 20 (LOQ)	-	-	-	
LC0013	23.2	7.19	145	2.12	
LC0014	13	1.8	81	-0.91	
LC0015	12.8	1.28	79.7	-0.96	
LC0016	17.4	8.7	108	0.4	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	16	4.6	99.7	-0.02	
LC0020	14.72	2.94	91.7	-0.4	
LC0021	14.2	1.52	88.5	-0.55	

Characteristics of parameter

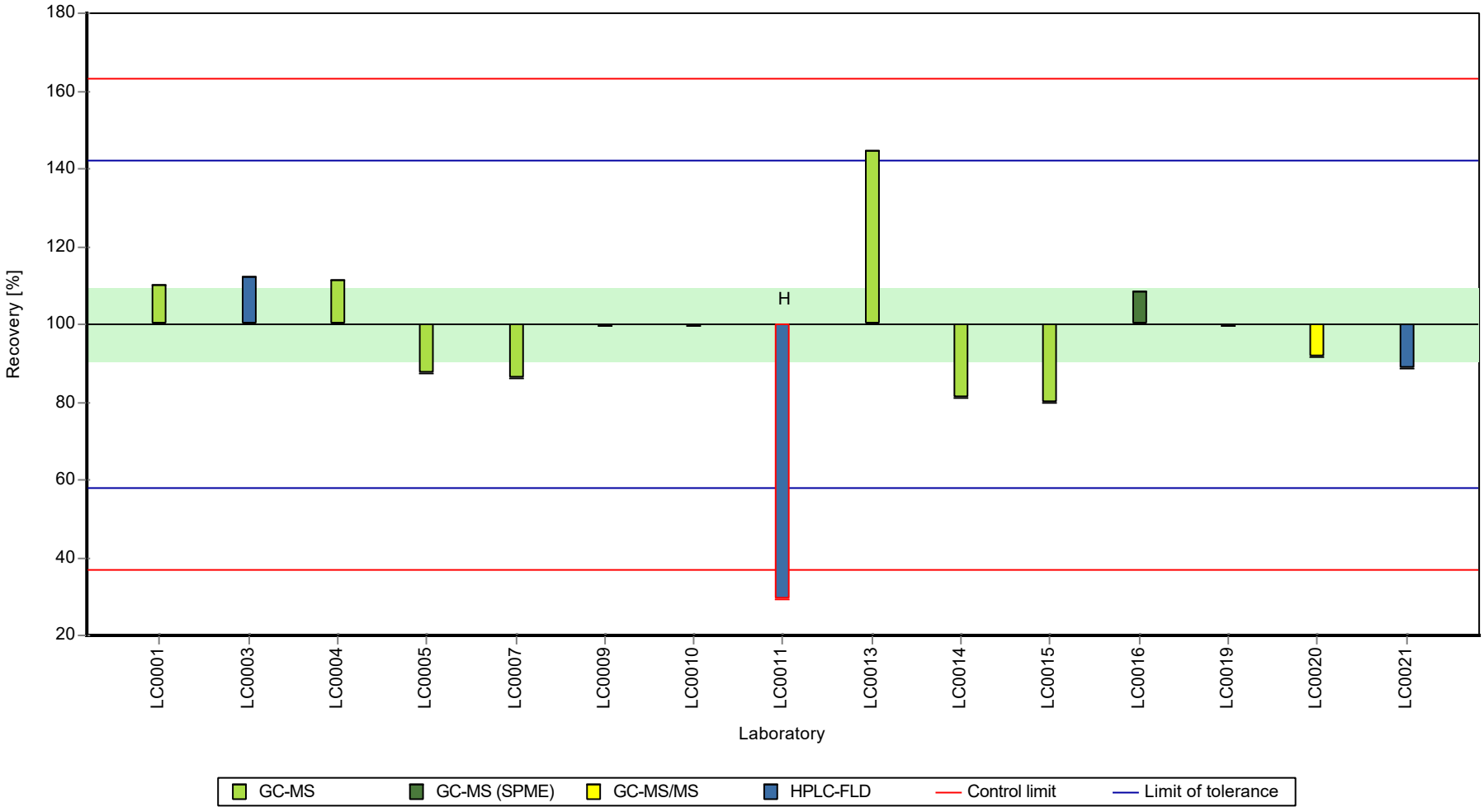
	all results	without outliers	Unit
Mean ± CI (99%)	15.3 ± 3.05	16.1 ± 2.19	ng/l
Minimum	4.72	12.8	ng/l
Maximum	23.2	23.2	ng/l
Standard deviation	3.94	2.73	ng/l
rel. standard deviation	25.7	17	%
n	15	14	-

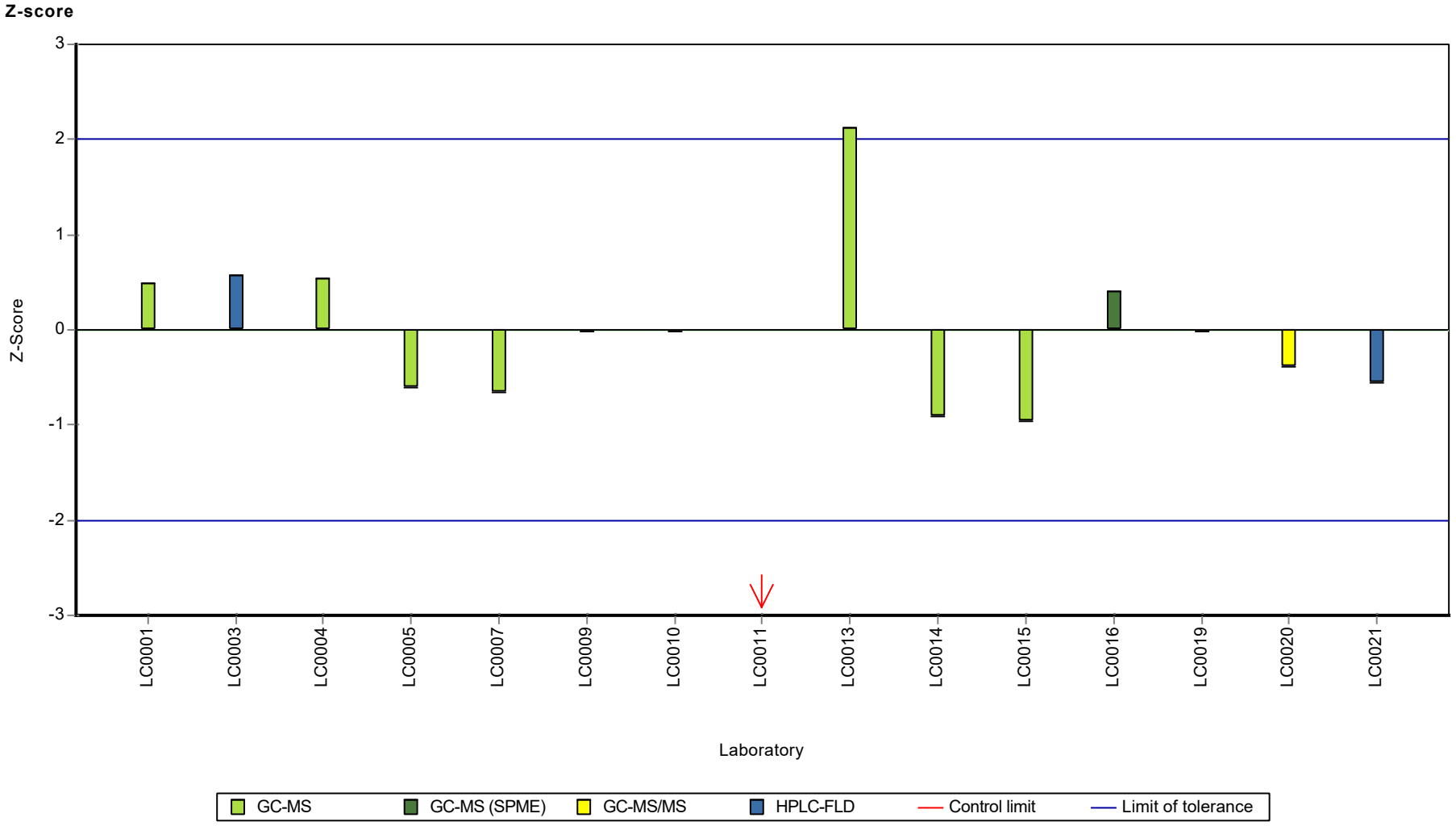
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Benzo[a]anthracene

Unit	ng/l
Assigned value ± U (k=2)	109 ± 6.92
Criterion	22.9 (21 %)
Minimum - Maximum	94.9 - 139
Control test value ± U (k=2)	119.0 ± 29.8

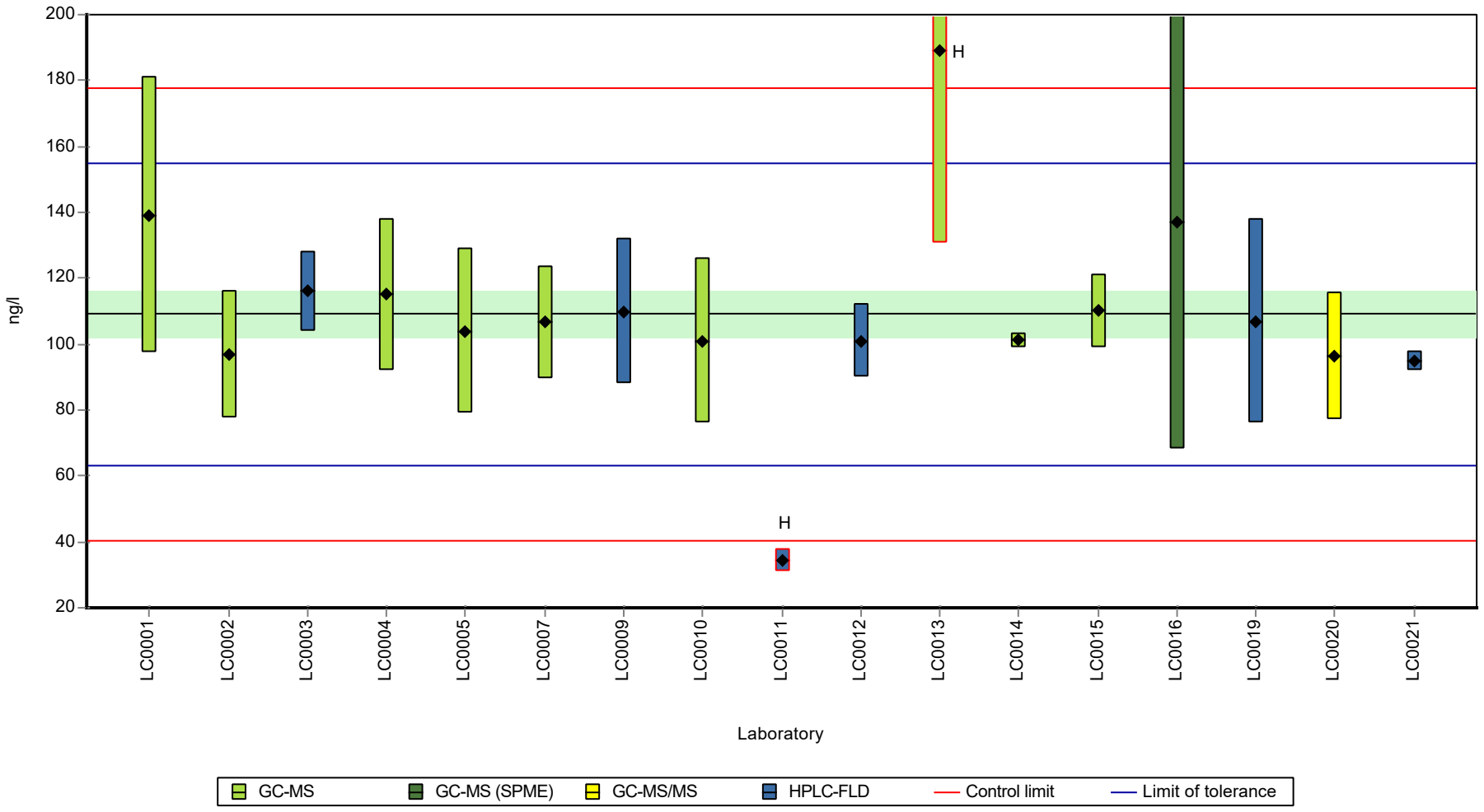
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	139.2	41.8	128	1.32	
LC0002	96.9	19.4	88.8	-0.53	
LC0003	116	12	106	0.3	
LC0004	115	23	105	0.26	
LC0005	104	25	95.3	-0.22	
LC0006	-	-	-	-	
LC0007	106.59	17	97.7	-0.11	
LC0008	-	-	-	-	
LC0009	110	22	101	0.04	
LC0010	101	25	92.6	-0.35	
LC0011	34.4	3.44	31.5	-3.26	H
LC0012	101	11	92.6	-0.35	
LC0013	189	58.5	173	3.49	H
LC0014	101.1	2.42	92.7	-0.35	
LC0015	110.01	11	101	0.04	
LC0016	137	69	126	1.22	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	107	31	98.1	-0.09	
LC0020	96.44	19.29	88.4	-0.55	
LC0021	94.9	3.02	87	-0.62	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	109 ± 21.9	109 ± 10.4	ng/l
Minimum	34.4	94.9	ng/l
Maximum	189	139	ng/l
Standard deviation	30.1	13.4	ng/l
rel. standard deviation	27.5	12.3	%
n	17	15	-

Graphical presentation of results

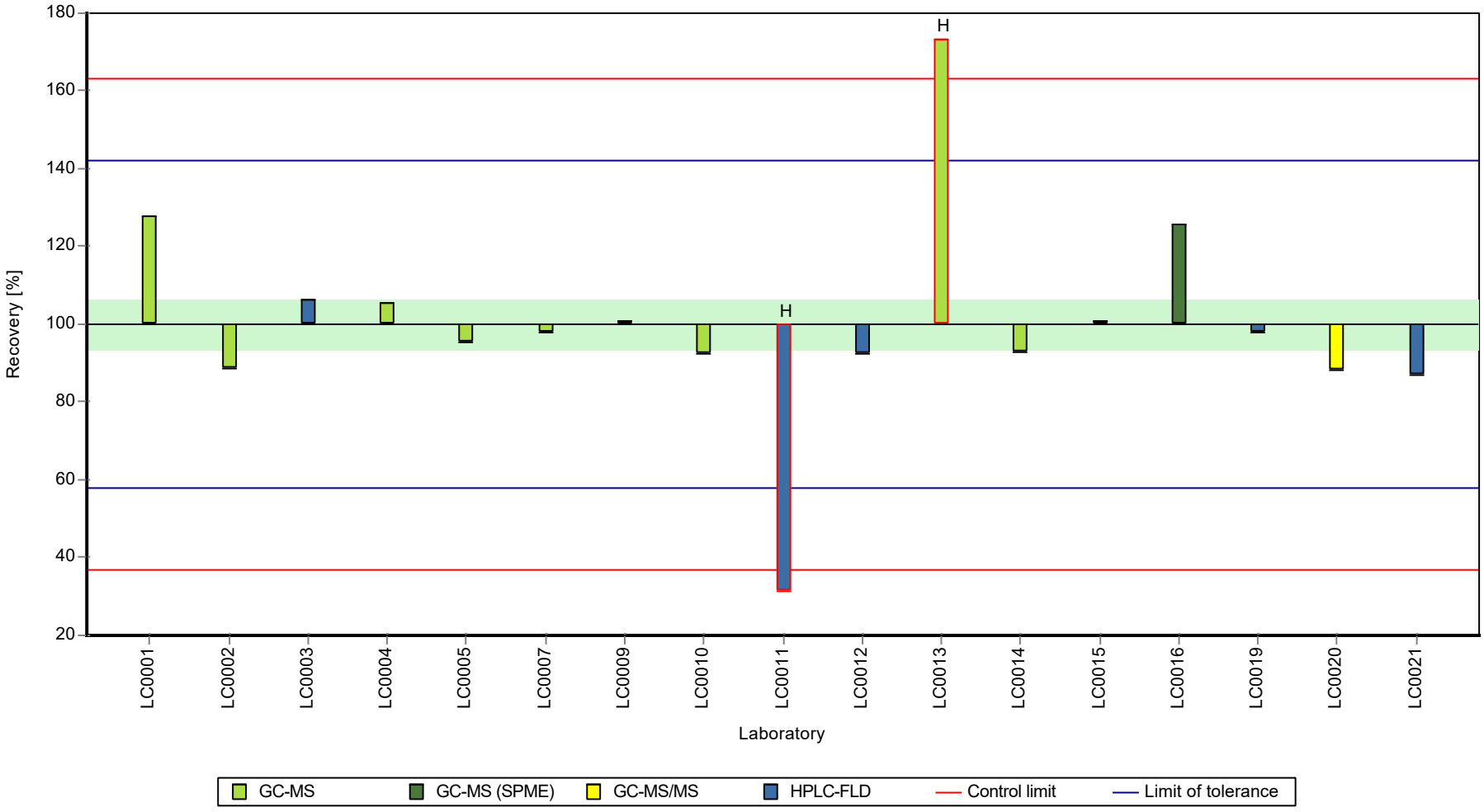
Results

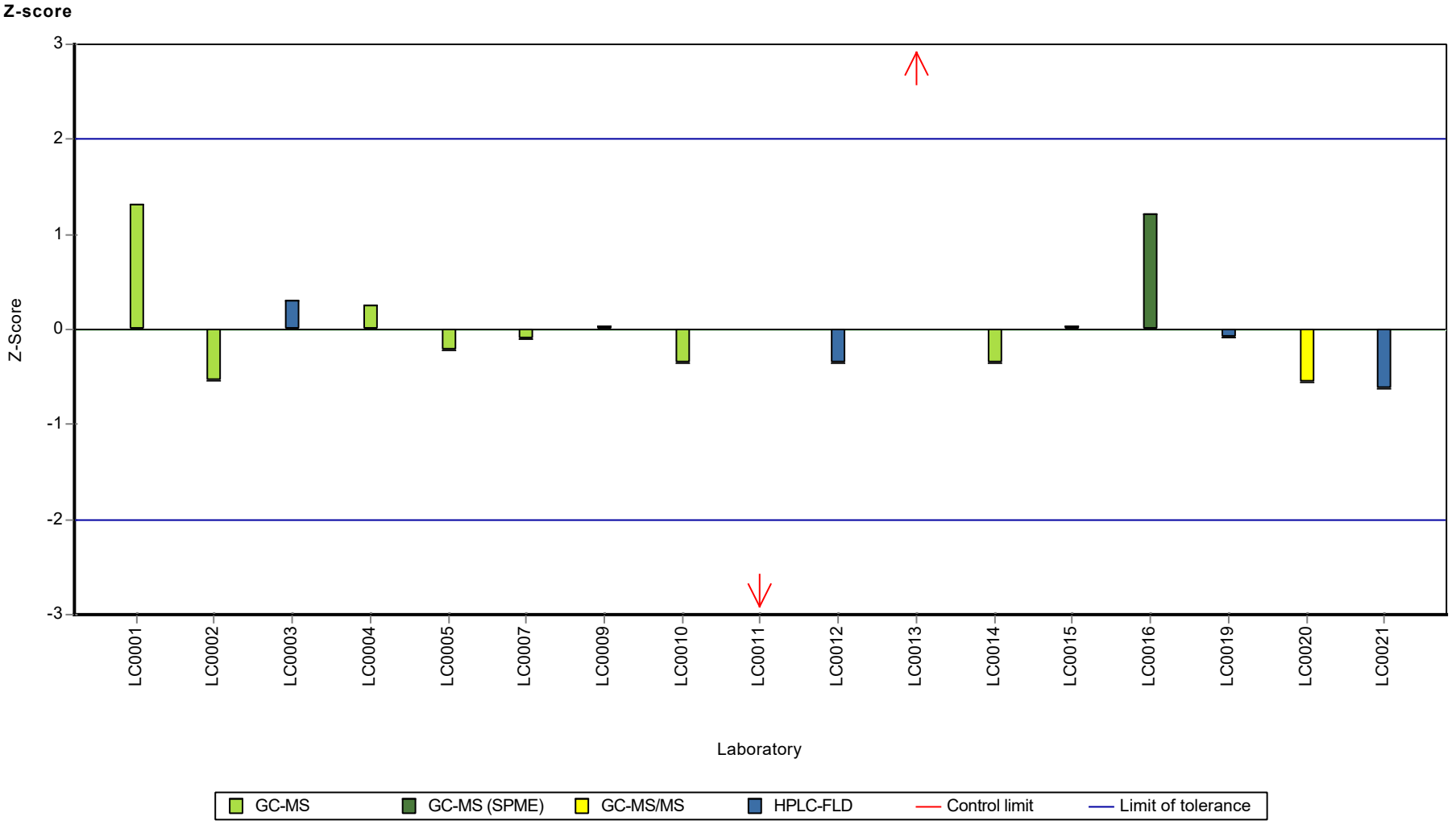


Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Benzo[a]anthracene

Recovery rate




Z-score
Z-Score
3
2
1
0
-1
-2
-3
LC0001
LC0002
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 A

Benzo[a]pyrene

Unit	ng/l
Assigned value ± U (k=2)	12.6 ± 2.25
Criterion	3.03 (24 %)
Minimum - Maximum	3.71 - 19.7
Control test value ± U (k=2)	16.70 ± 5.86

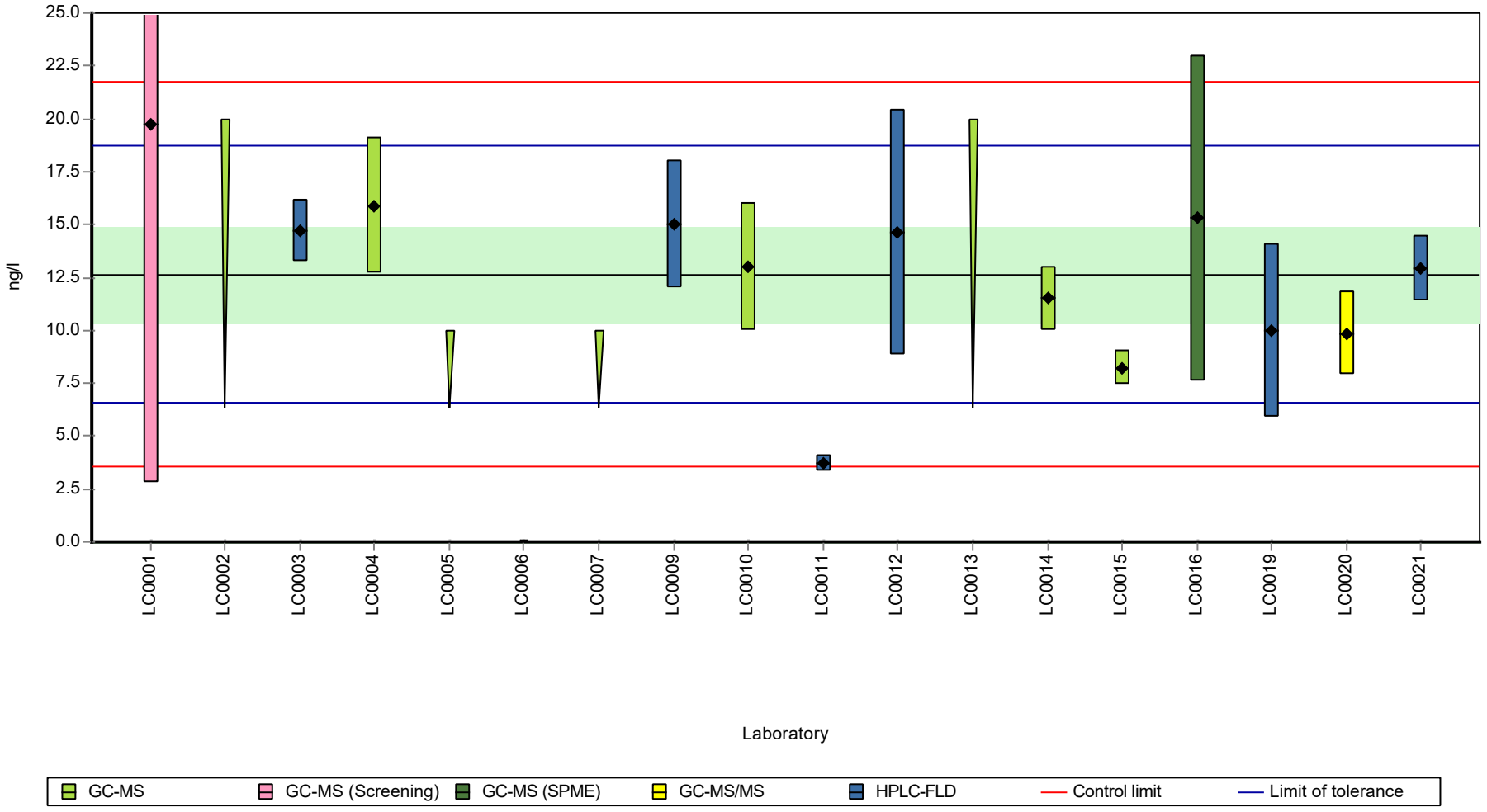
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	19.7	16.9	156	2.32	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	14.7	1.5	116	0.68	
LC0004	15.9	3.2	126	1.07	
LC0005	< 10 (LOQ)	-	-	-	
LC0006	< 0.05 (LOQ)	-	-	-	FN
LC0007	< 10 (LOQ)	-	-	-	
LC0008	-	-	-	-	
LC0009	15	3	119	0.78	
LC0010	13	3	103	0.12	
LC0011	3.71	0.371	29.3	-2.94	
LC0012	14.6	5.8	115	0.64	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	11.5	1.48	90.9	-0.38	
LC0015	8.23	0.82	65.1	-1.45	
LC0016	15.3	7.7	121	0.88	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	10	4.1	79.1	-0.87	
LC0020	9.85	1.97	77.9	-0.92	
LC0021	12.9	1.55	102	0.08	

Characteristics of parameter

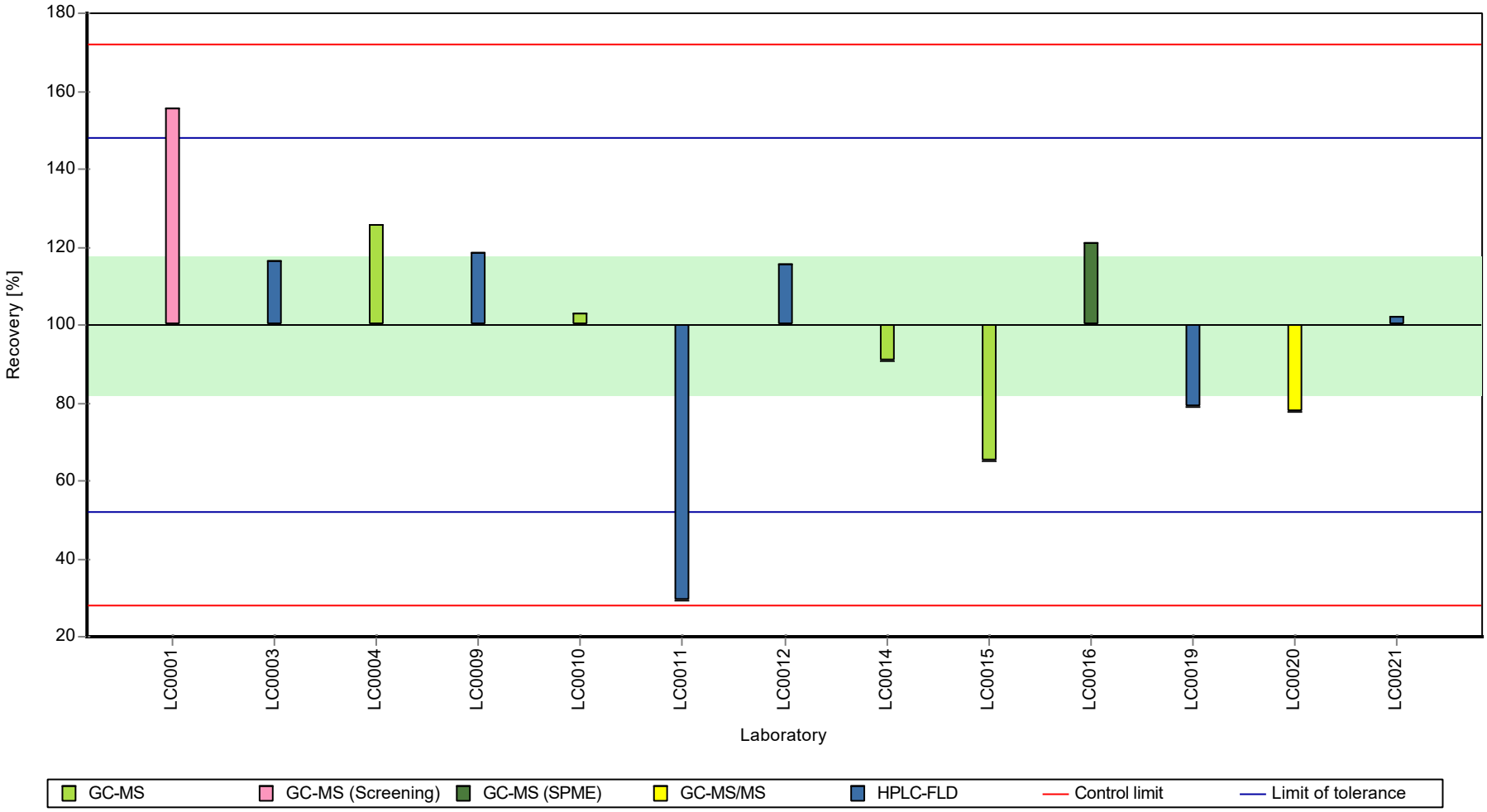
	all results	without outliers	Unit
Mean ± CI (99%)	12.6 ± 3.37	12.6 ± 3.37	ng/l
Minimum	3.71	3.71	ng/l
Maximum	19.7	19.7	ng/l
Standard deviation	4.05	4.05	ng/l
rel. standard deviation	32	32	%
n	13	13	-

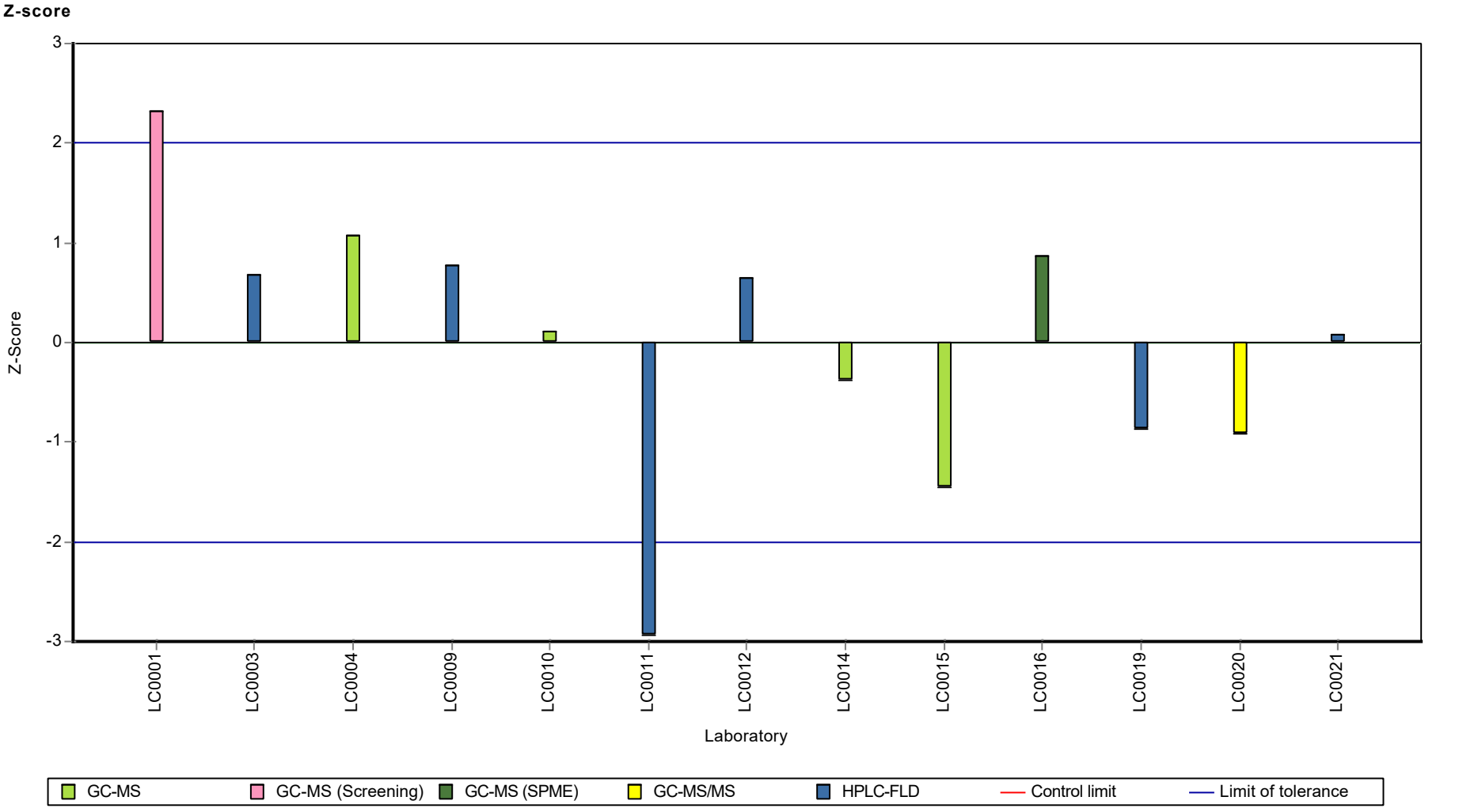
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0003
LC0004
LC0009
LC0010
LC0011
LC0012
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (Screening)
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Benzo[a]pyrene

Unit	ng/l
Assigned value ± U (k=2)	109 ± 8.57
Criterion	26.1 (24 %)
Minimum - Maximum	92.8 - 150
Control test value ± U (k=2)	129.0 ± 45.1

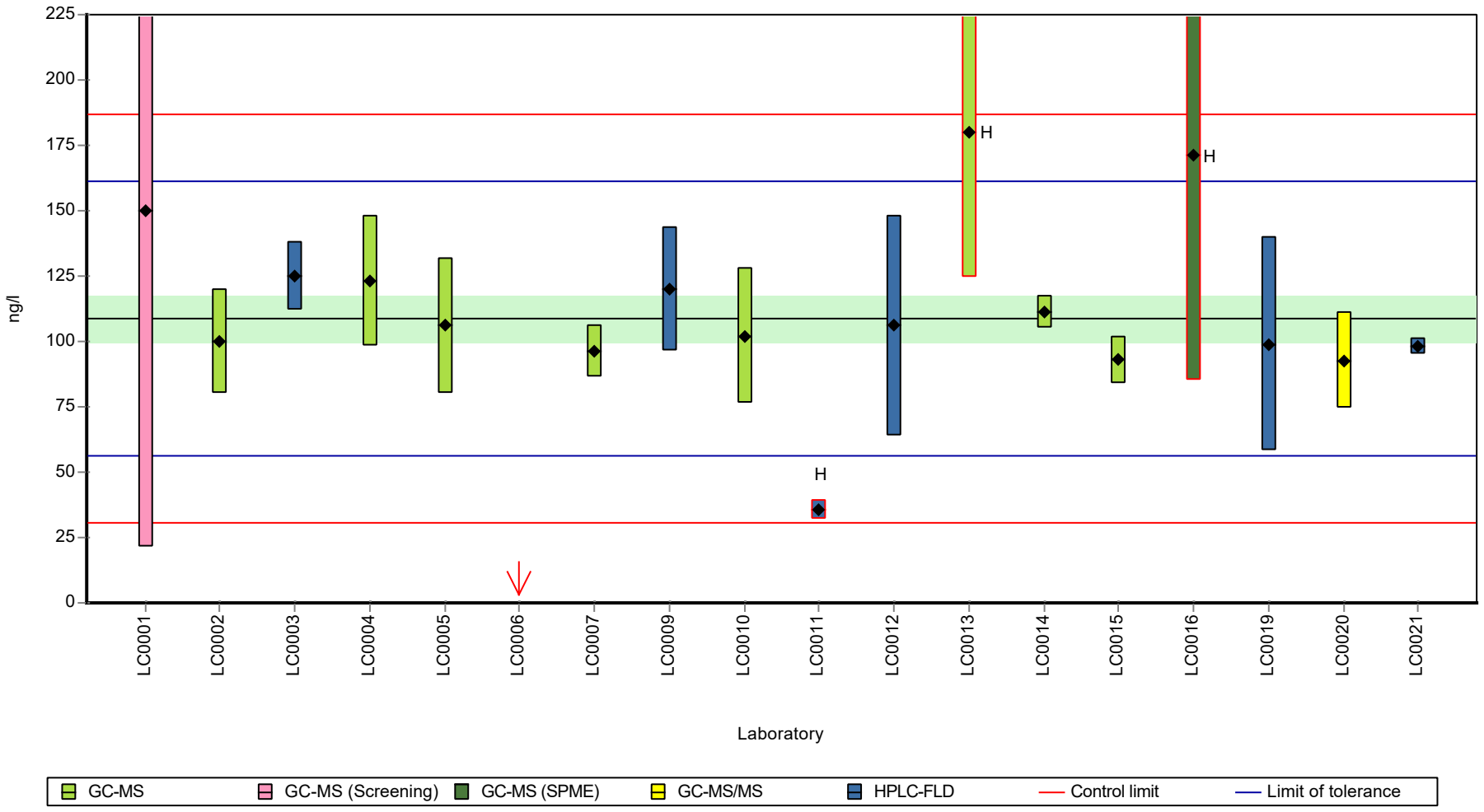
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	150.3	129.3	138	1.59	
LC0002	99.8	20	91.8	-0.34	
LC0003	125	13	115	0.62	
LC0004	123	25	113	0.55	
LC0005	106	26	97.5	-0.11	
LC0006	0.13	0.039	0.1	-4.16	H
LC0007	96.24	10	88.5	-0.48	
LC0008	-	-	-	-	
LC0009	120	24	110	0.43	
LC0010	102	26	93.8	-0.26	
LC0011	35.7	3.57	32.8	-2.8	H
LC0012	106	42	97.5	-0.11	
LC0013	180	55.9	166	2.73	H
LC0014	111.5	6.25	103	0.1	
LC0015	92.88	9.29	85.4	-0.61	
LC0016	171	86	157	2.38	H
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	99	41	91	-0.37	
LC0020	92.77	18.56	85.3	-0.61	
LC0021	98.1	3.04	90.2	-0.41	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	106 ± 29.4	109 ± 12.9	ng/l
Minimum	0.13	92.8	ng/l
Maximum	180	150	ng/l
Standard deviation	41.5	16	ng/l
rel. standard deviation	39.1	14.7	%
n	18	14	-

Graphical presentation of results

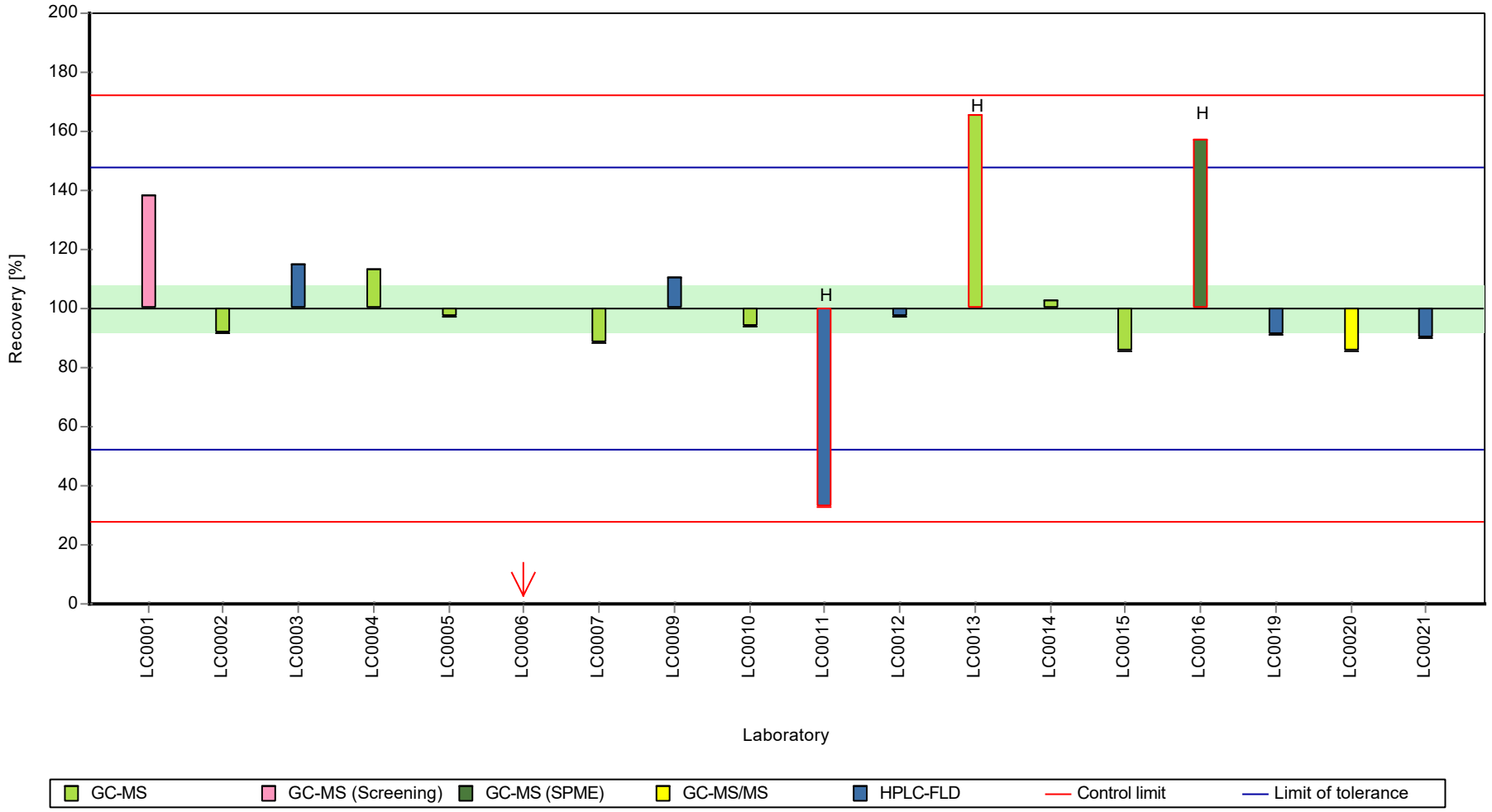
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

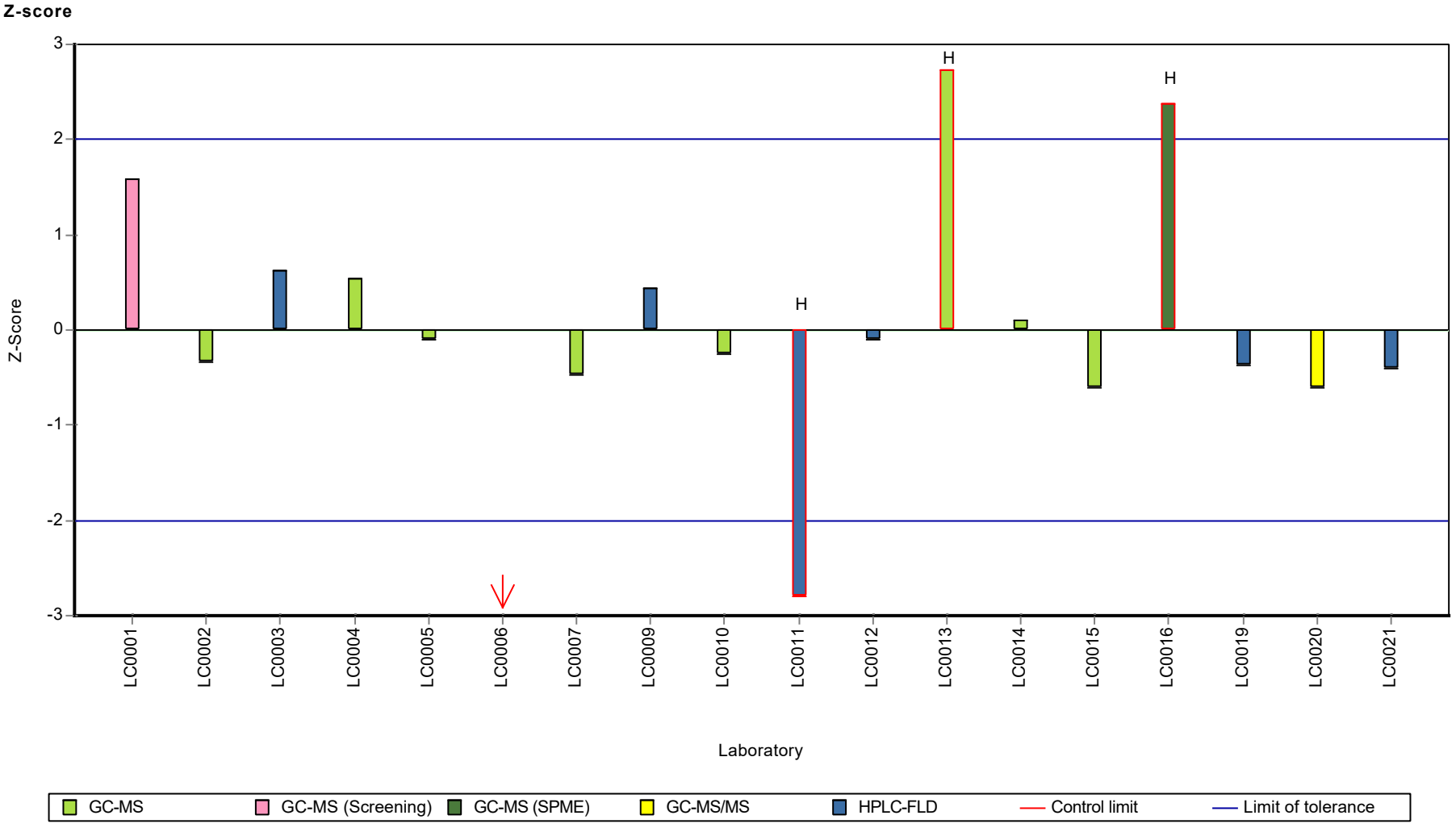
Sample: P23B, Parameter: Benzo[a]pyrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Benzo[a]pyrene



Parameter oriented report

P23 A

Benzo[b]fluoranthene

Unit	ng/l
Assigned value ± U (k=2)	15.5 ± 2.12
Criterion	2.64 (17 %)
Minimum - Maximum	5.53 - 23.5
Control test value ± U (k=2)	18.50 ± 4.62

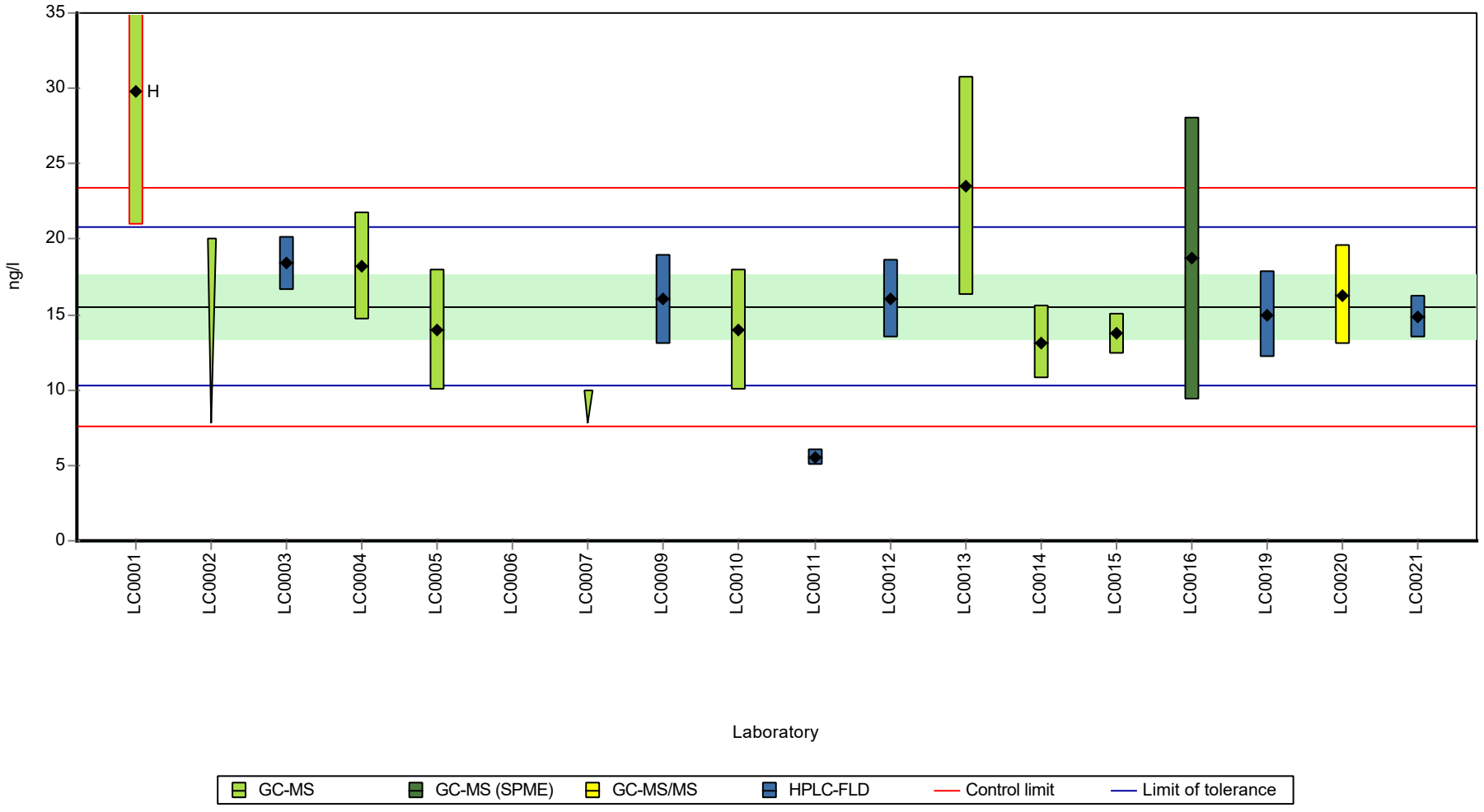
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	29.8	8.9	192	5.41	H
LC0002	< 20 (LOQ)	-	-	-	
LC0003	18.4	1.8	119	1.09	
LC0004	18.2	3.6	117	1.02	
LC0005	14	4	90.2	-0.58	
LC0006	< 0.05 (LOQ)	-	-	-	FN
LC0007	< 10 (LOQ)	-	-	-	
LC0008	-	-	-	-	
LC0009	16	3	103	0.18	
LC0010	14	4	90.2	-0.58	
LC0011	5.53	0.553	35.6	-3.79	
LC0012	16	2.6	103	0.18	
LC0013	23.5	7.29	151	3.02	
LC0014	13.16	2.43	84.8	-0.9	
LC0015	13.71	1.37	88.3	-0.69	
LC0016	18.7	9.4	120	1.2	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	15	2.9	96.6	-0.2	
LC0020	16.3	3.26	105	0.29	
LC0021	14.8	1.41	95.4	-0.27	

Characteristics of parameter

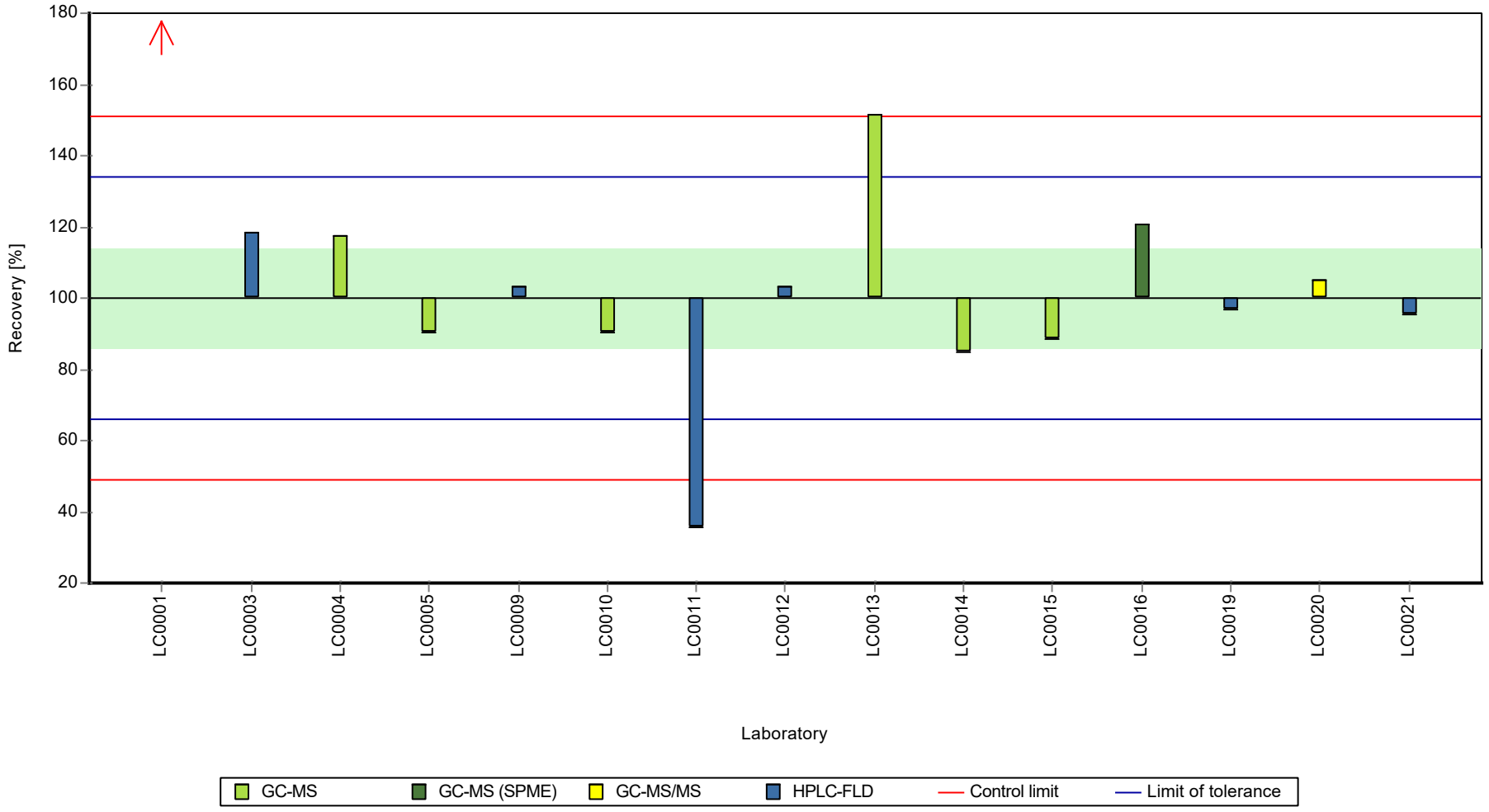
	all results	without outliers	Unit
Mean ± CI (99%)	16.5 ± 4.11	15.5 ± 3.18	ng/l
Minimum	5.53	5.53	ng/l
Maximum	29.8	23.5	ng/l
Standard deviation	5.31	3.97	ng/l
rel. standard deviation	32.2	25.5	%
n	15	14	-

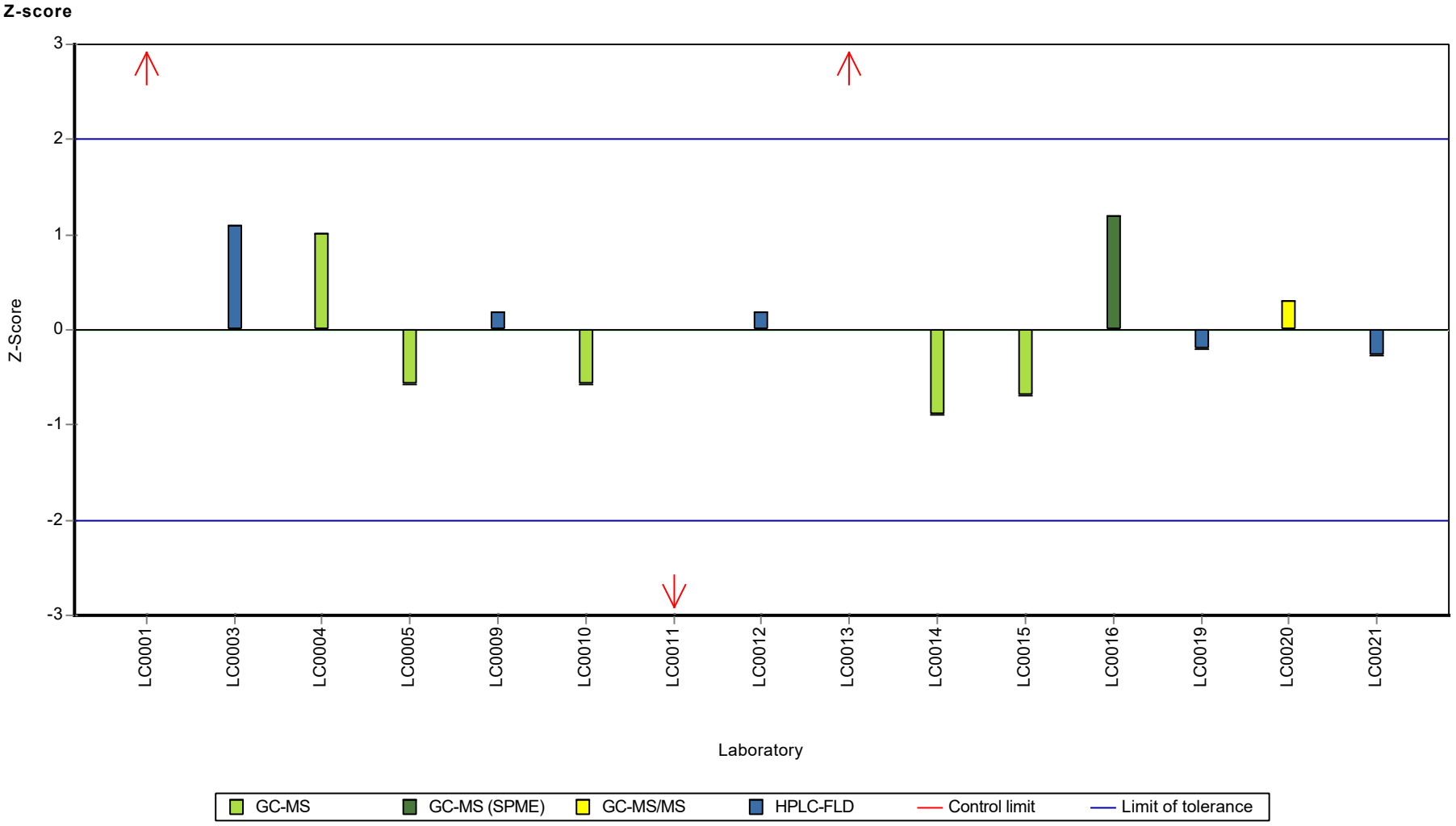
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0003
LC0004
LC0005
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Benzo[b]fluoranthene

Unit	ng/l
Assigned value ± U (k=2)	94.9 ± 7.06
Criterion	16.1 (17 %)
Minimum - Maximum	79.6 - 133
Control test value ± U (k=2)	106.0 ± 26.6

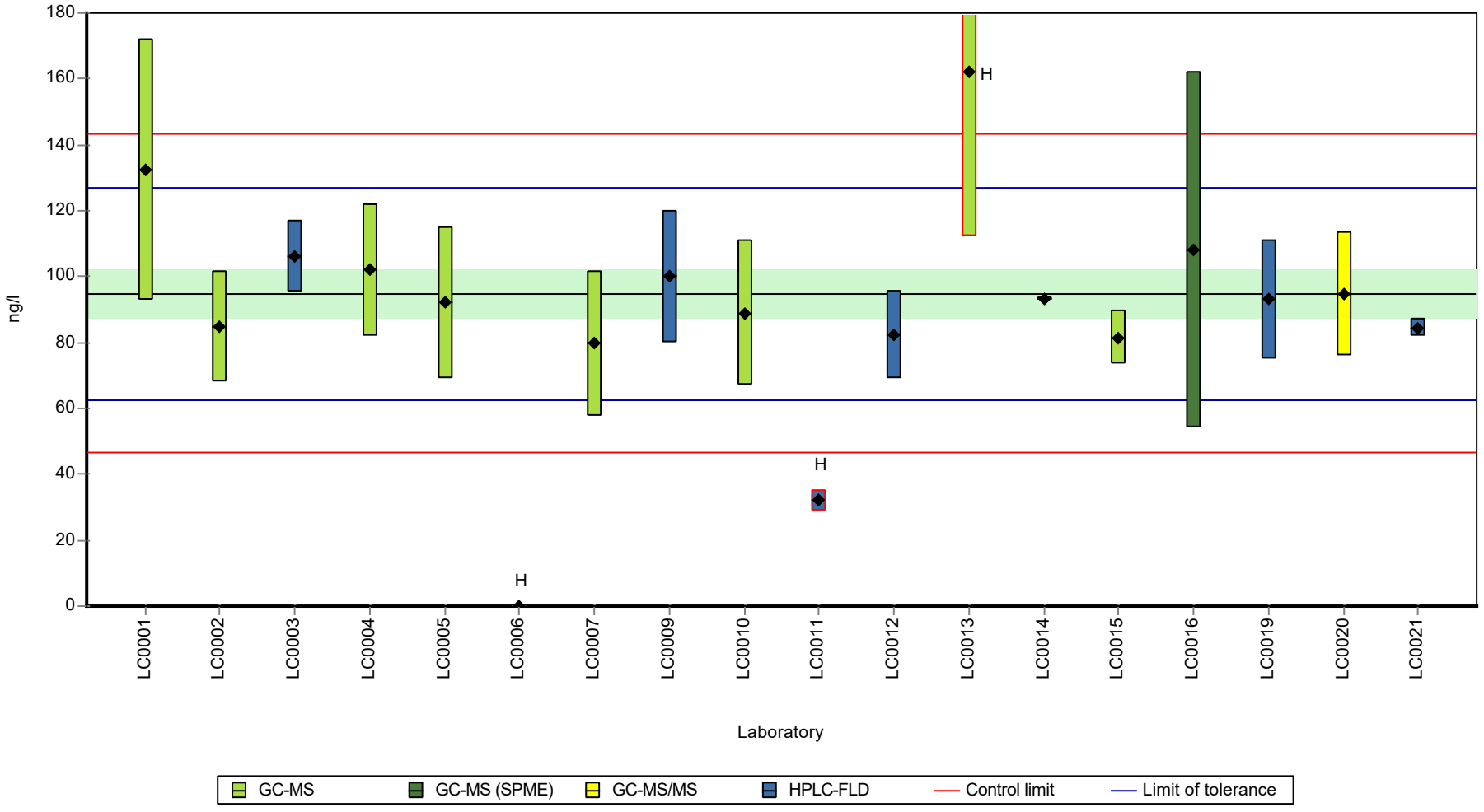
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	132.5	39.7	140	2.33	
LC0002	84.6	16.9	89.2	-0.64	
LC0003	106	11	112	0.69	
LC0004	102	20	108	0.44	
LC0005	92	23	97	-0.18	
LC0006	0.087	0.026	0.1	-5.88	H
LC0007	79.64	22	84	-0.94	
LC0008	-	-	-	-	
LC0009	100	20	105	0.32	
LC0010	89	22	93.8	-0.36	
LC0011	32.2	3.22	33.9	-3.89	H
LC0012	82.3	13.2	86.8	-0.78	
LC0013	162	50.1	171	4.16	H
LC0014	93	0.51	98	-0.12	
LC0015	81.56	8.16	86	-0.82	
LC0016	108	54	114	0.81	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	93	18	98	-0.12	
LC0020	94.75	18.95	99.9	-0.01	
LC0021	84.5	2.79	89.1	-0.64	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	89.8 ± 24	94.9 ± 10.6	ng/l
Minimum	0.087	79.6	ng/l
Maximum	162	133	ng/l
Standard deviation	33.9	13.7	ng/l
rel. standard deviation	37.8	14.4	%
n	18	15	-

Graphical presentation of results

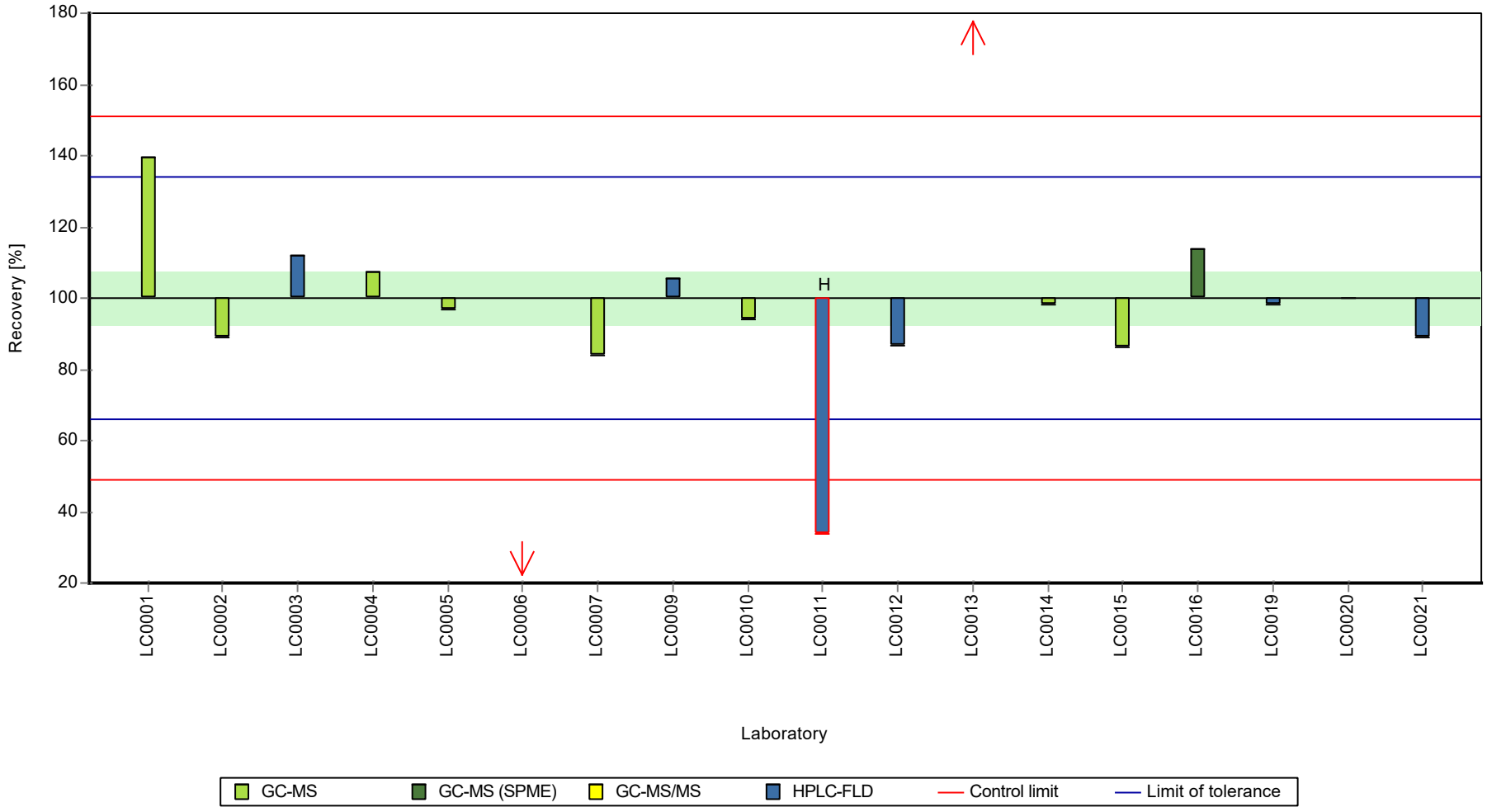
Results

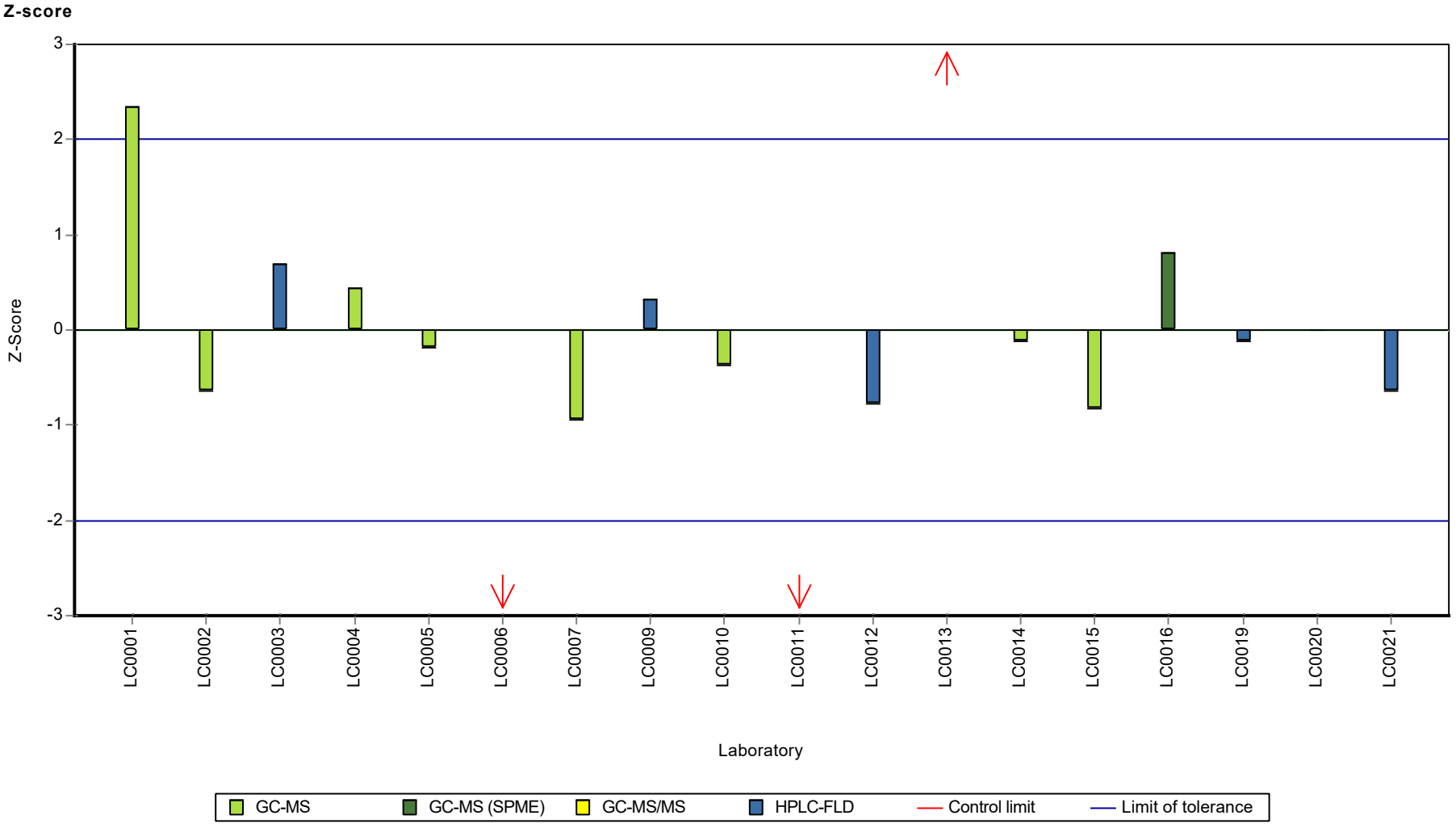


Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Benzo[b]fluoranthene

Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0006
LC0007
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 A

Benzo[g,h,i]perylene

Unit	ng/l
Assigned value ± U (k=2)	14.1 ± 1.46
Criterion	4.5 (32 %)
Minimum - Maximum	10.2 - 18.7
Control test value ± U (k=2)	16.40 ± 5.76

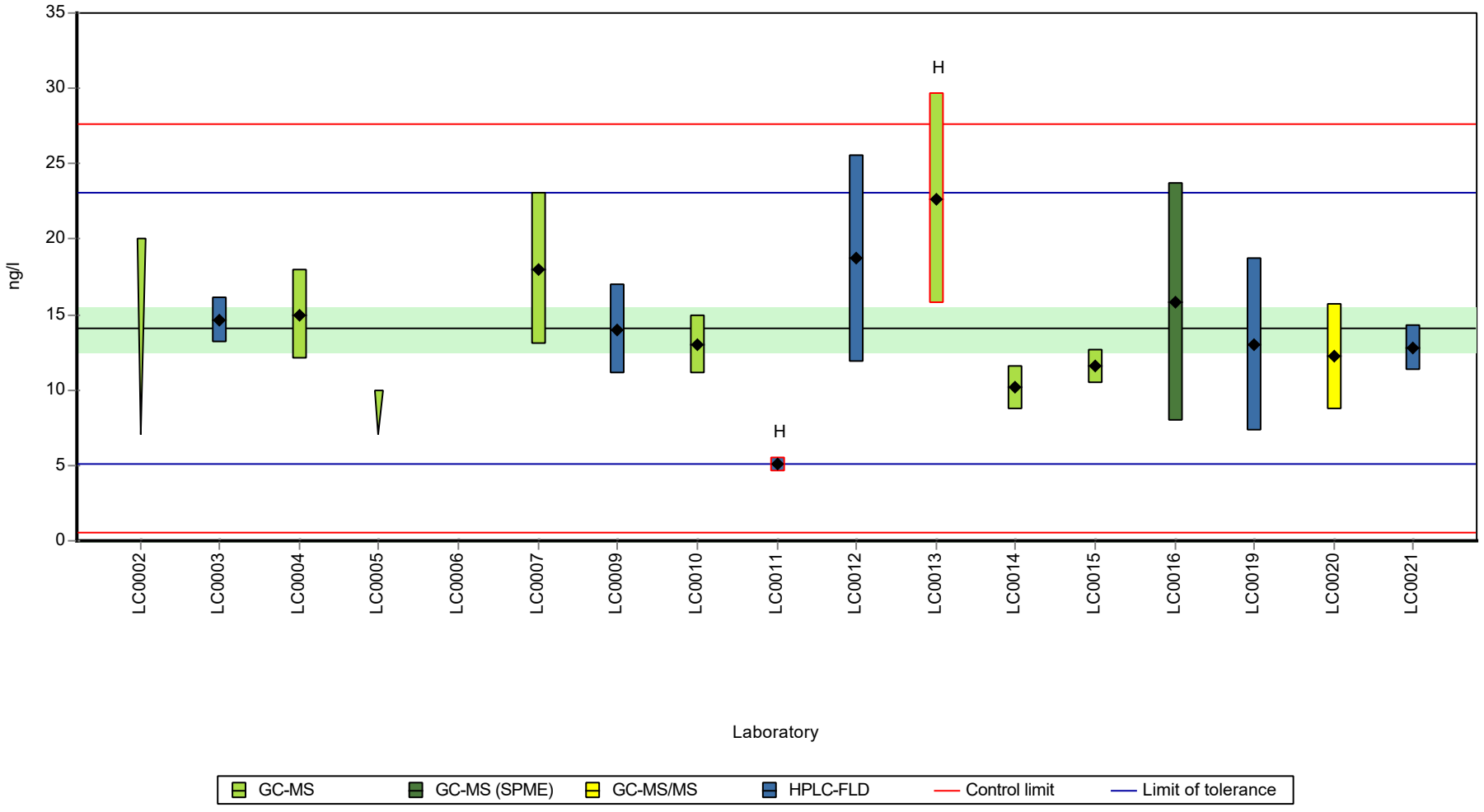
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	14.6	1.5	104	0.12	
LC0004	15	3	107	0.21	
LC0005	< 10 (LOQ)	-	-	-	
LC0006	< 0.05 (LOQ)	-	-	-	FN
LC0007	18.03	5	128	0.88	
LC0008	-	-	-	-	
LC0009	14	3	99.5	-0.02	
LC0010	13	2	92.4	-0.24	
LC0011	5.06	0.506	36	-2	H
LC0012	18.7	6.9	133	1.03	
LC0013	22.7	7.04	161	1.92	H
LC0014	10.16	1.48	72.2	-0.87	
LC0015	11.57	1.16	82.2	-0.56	
LC0016	15.8	7.9	112	0.38	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	13	5.7	92.4	-0.24	
LC0020	12.21	3.54	86.8	-0.41	
LC0021	12.8	1.51	91	-0.28	

Characteristics of parameter

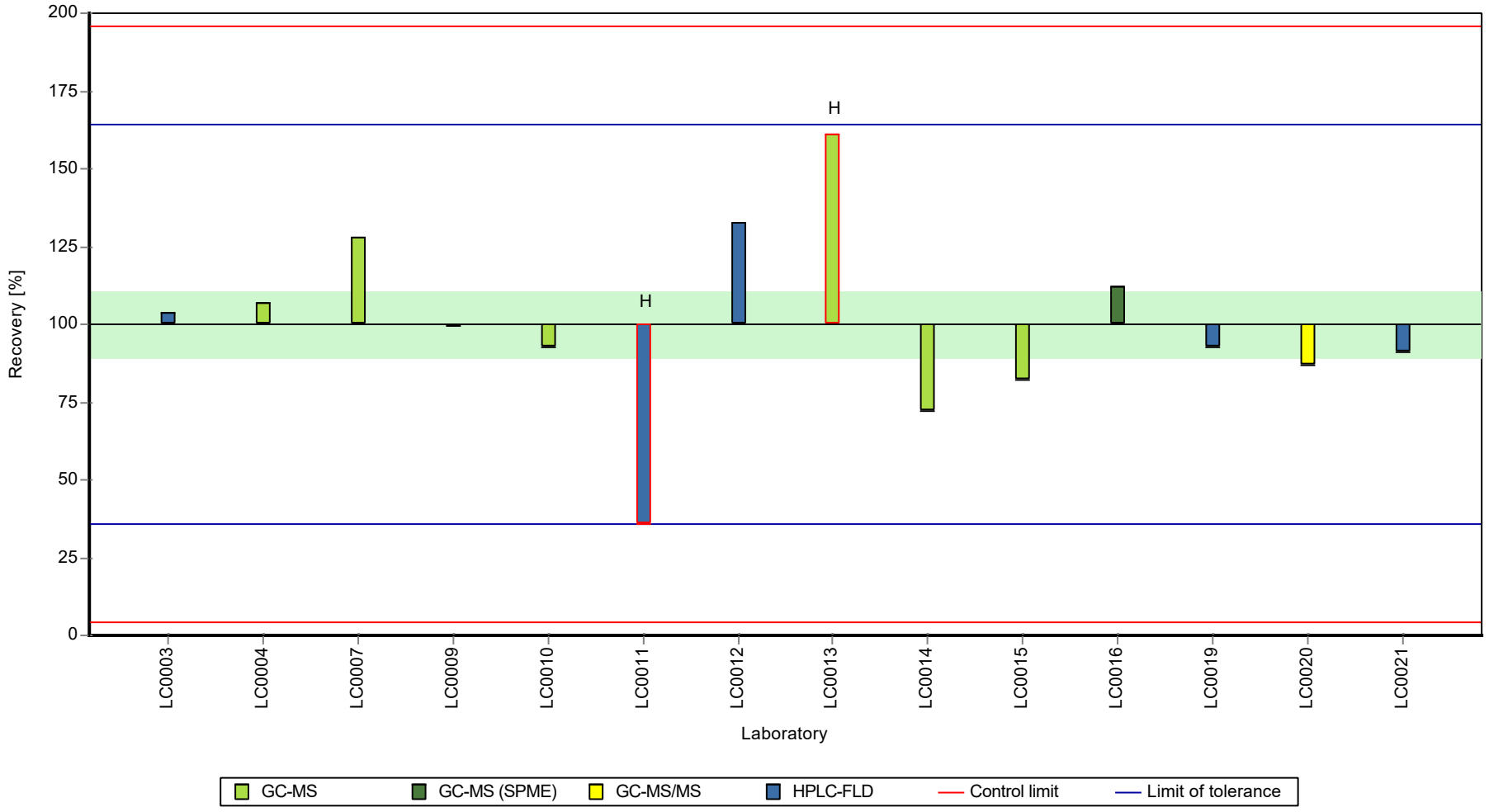
	all results	without outliers	Unit
Mean ± CI (99%)	14 ± 3.34	14.1 ± 2.19	ng/l
Minimum	5.06	10.2	ng/l
Maximum	22.7	18.7	ng/l
Standard deviation	4.17	2.53	ng/l
rel. standard deviation	29.7	17.9	%
n	14	12	-

Graphical presentation of results

Results

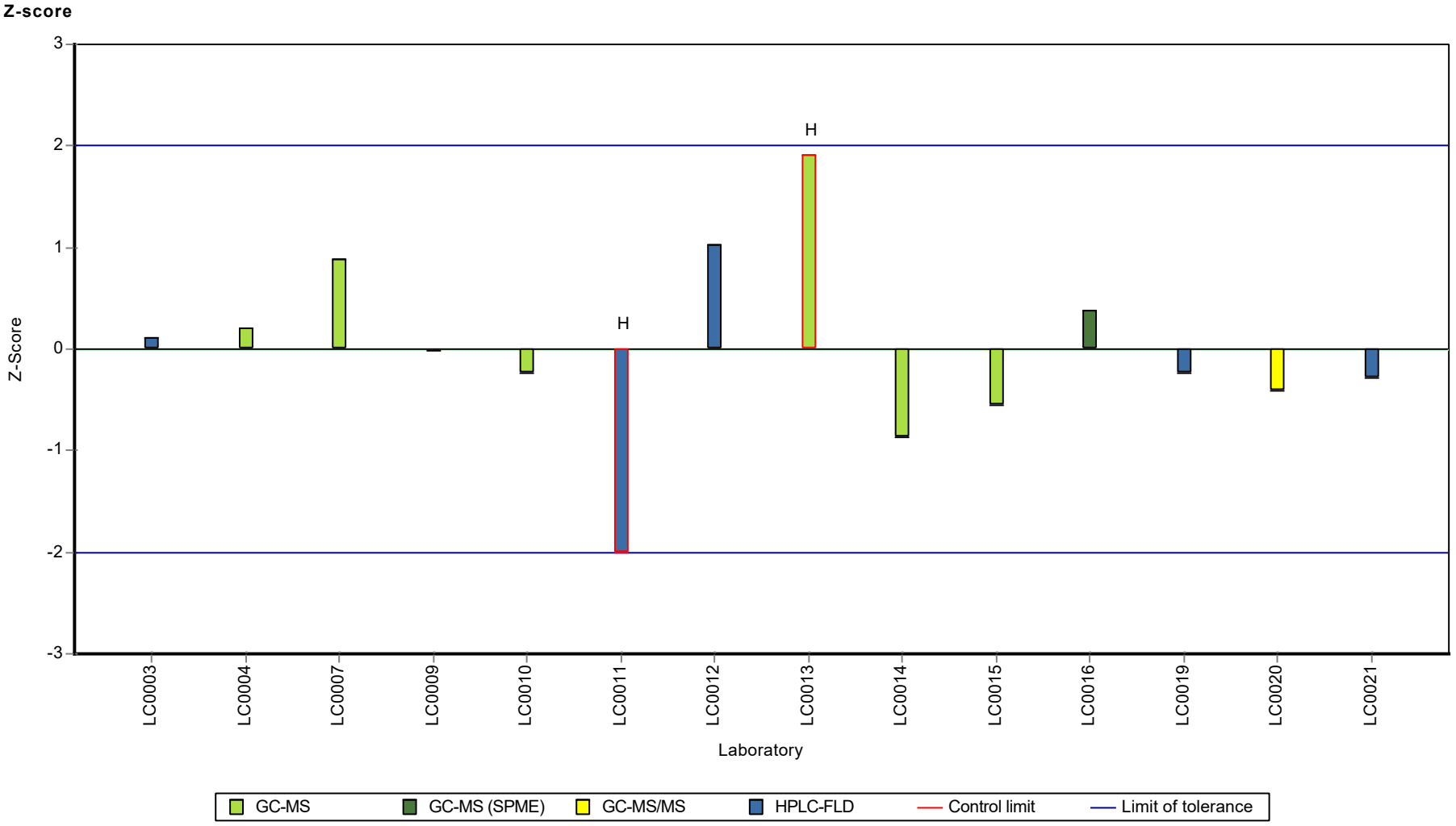


Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Benzo[g,h,i]perylene



Parameter oriented report

P23 B

Benzo[g,h,i]perylene

Unit	ng/l
Assigned value ± U (k=2)	139 ± 8.96
Criterion	44.4 (32 %)
Minimum - Maximum	118 - 175
Control test value ± U (k=2)	165.0 ± 57.8

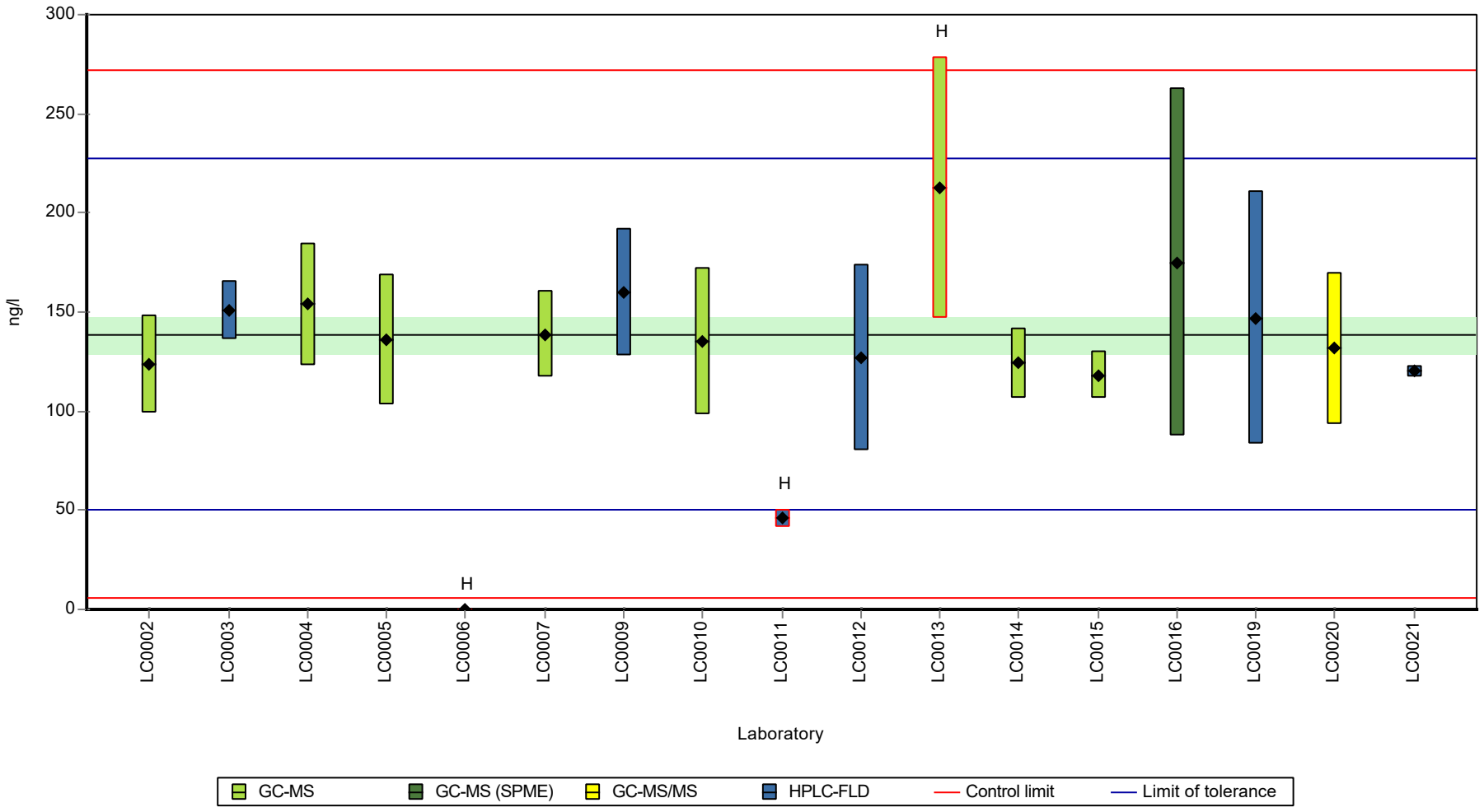
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	123.5	24.7	89.1	-0.34	
LC0003	151	15	109	0.28	
LC0004	154	31	111	0.35	
LC0005	136	33	98.1	-0.06	
LC0006	0.121	0.036	0.1	-3.12	H
LC0007	138.73	22	100	0.00	
LC0008	-	-	-	-	
LC0009	160	32	115	0.48	
LC0010	135	37	97.4	-0.08	
LC0011	45.9	4.59	33.1	-2.09	H
LC0012	127	47	91.6	-0.26	
LC0013	213	65.9	154	1.68	H
LC0014	124.04	17.68	89.5	-0.33	
LC0015	118.12	11.81	85.2	-0.46	
LC0016	175	88	126	0.82	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	147	64	106	0.19	
LC0020	131.72	38.2	95	-0.16	
LC0021	120	3.01	86.5	-0.42	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	129 ± 34.3	139 ± 13.4	ng/l
Minimum	0.121	118	ng/l
Maximum	213	175	ng/l
Standard deviation	47.1	16.8	ng/l
rel. standard deviation	36.4	12.1	%
n	17	14	-

Graphical presentation of results

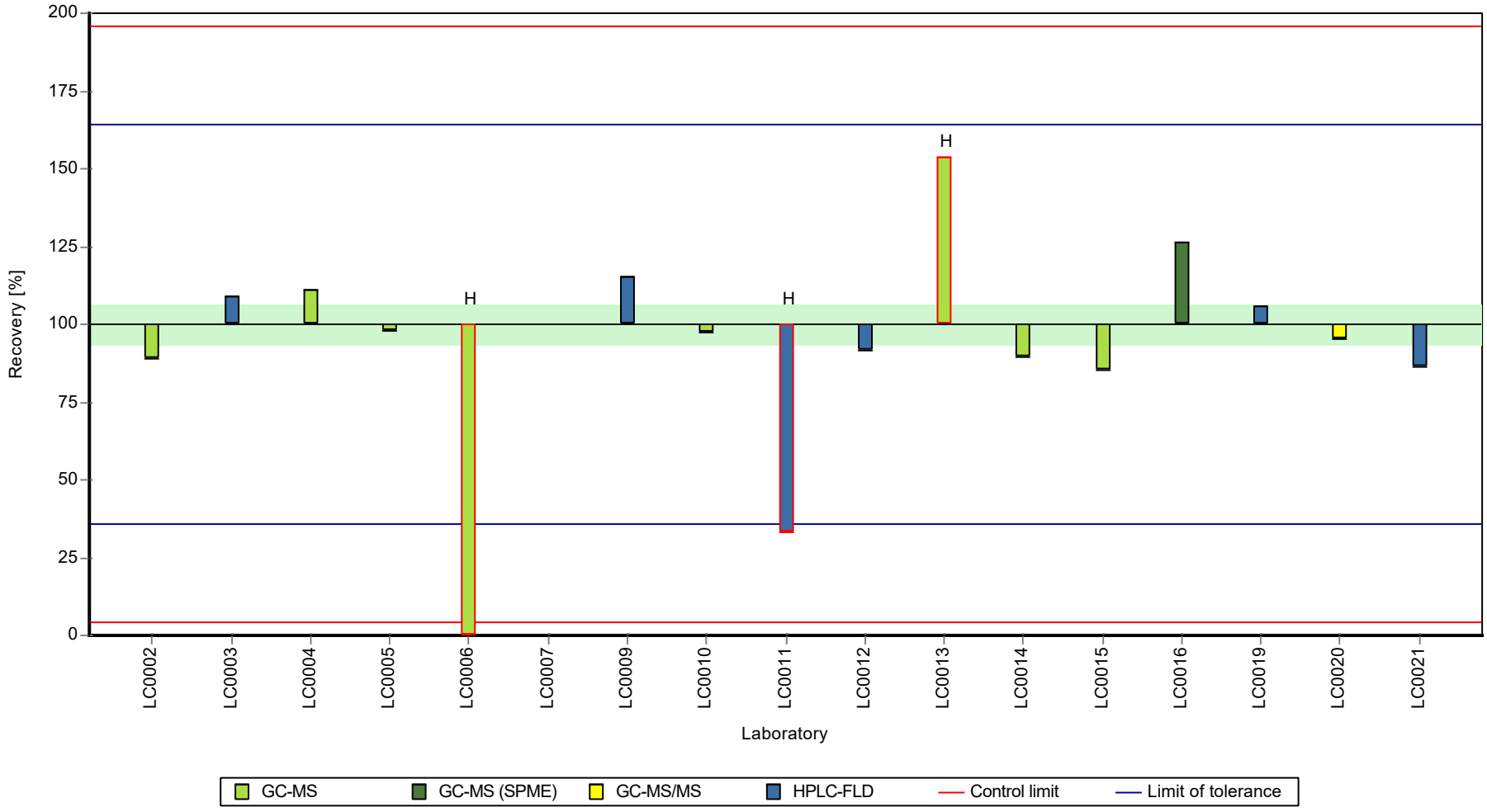
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

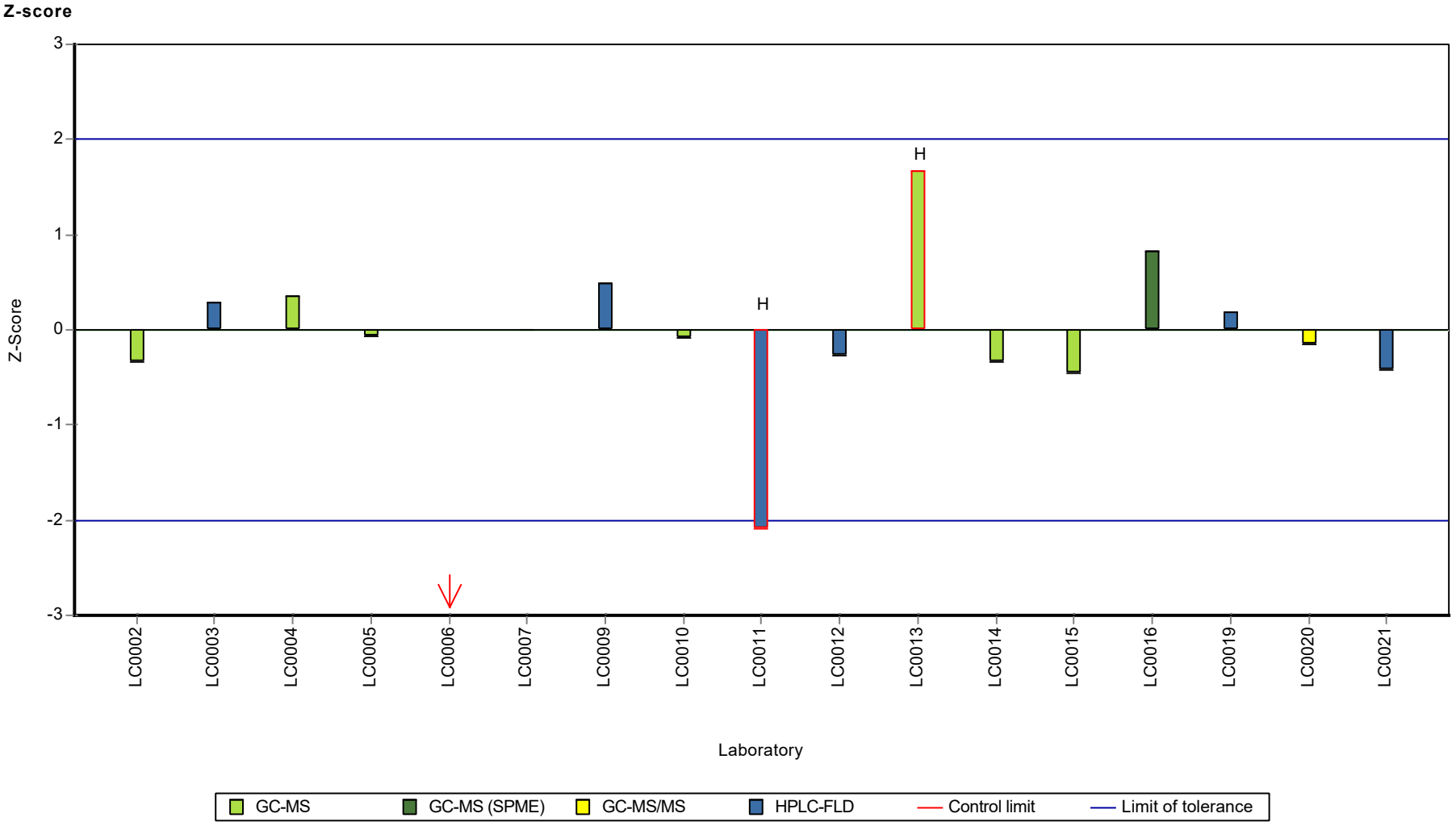
Sample: P23B, Parameter: Benzo[g,h,i]perylene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Benzo[g,h,i]perylene



Parameter oriented report

P23 A

Benzo[k]fluoranthene

Unit	ng/l
Assigned value ± U (k=2)	15 ± 1.5
Criterion	3.91 (26 %)
Minimum - Maximum	11.5 - 20.8
Control test value ± U (k=2)	16.60 ± 4.97

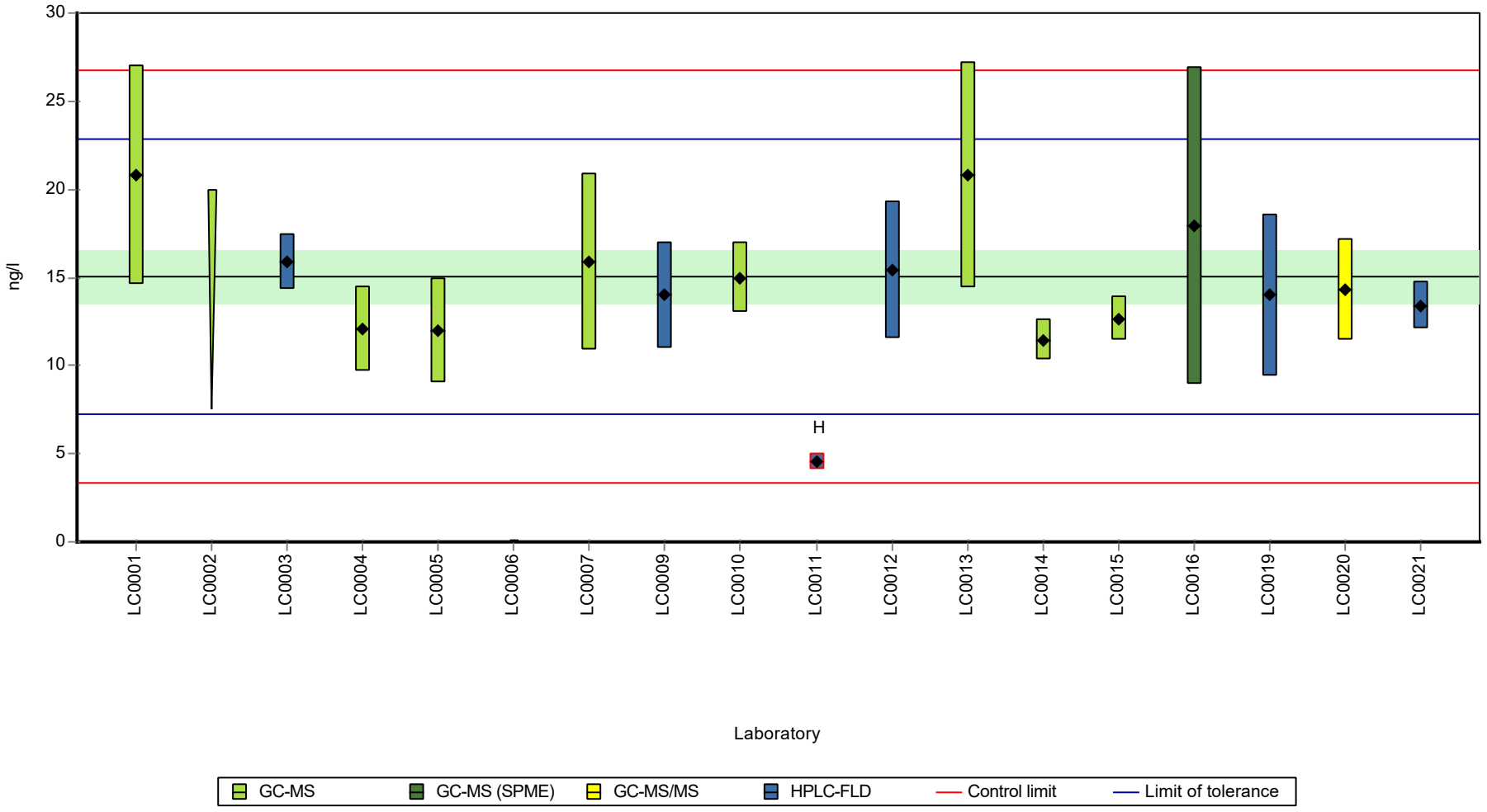
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	20.8	6.2	138	1.47	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	15.9	1.6	106	0.22	
LC0004	12.1	2.4	80.4	-0.75	
LC0005	12	3	79.8	-0.78	
LC0006	< 0.05 (LOQ)	-	-	-	FN
LC0007	15.9	5	106	0.22	
LC0008	-	-	-	-	
LC0009	14	3	93.1	-0.27	
LC0010	15	2	99.7	-0.01	
LC0011	4.58	0.458	30.4	-2.68	H
LC0012	15.4	3.9	102	0.09	
LC0013	20.8	6.45	138	1.47	
LC0014	11.47	1.2	76.3	-0.91	
LC0015	12.65	1.26	84.1	-0.61	
LC0016	17.9	9	119	0.73	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	14	4.6	93.1	-0.27	
LC0020	14.3	2.86	95.1	-0.19	
LC0021	13.4	1.35	89.1	-0.42	

Characteristics of parameter

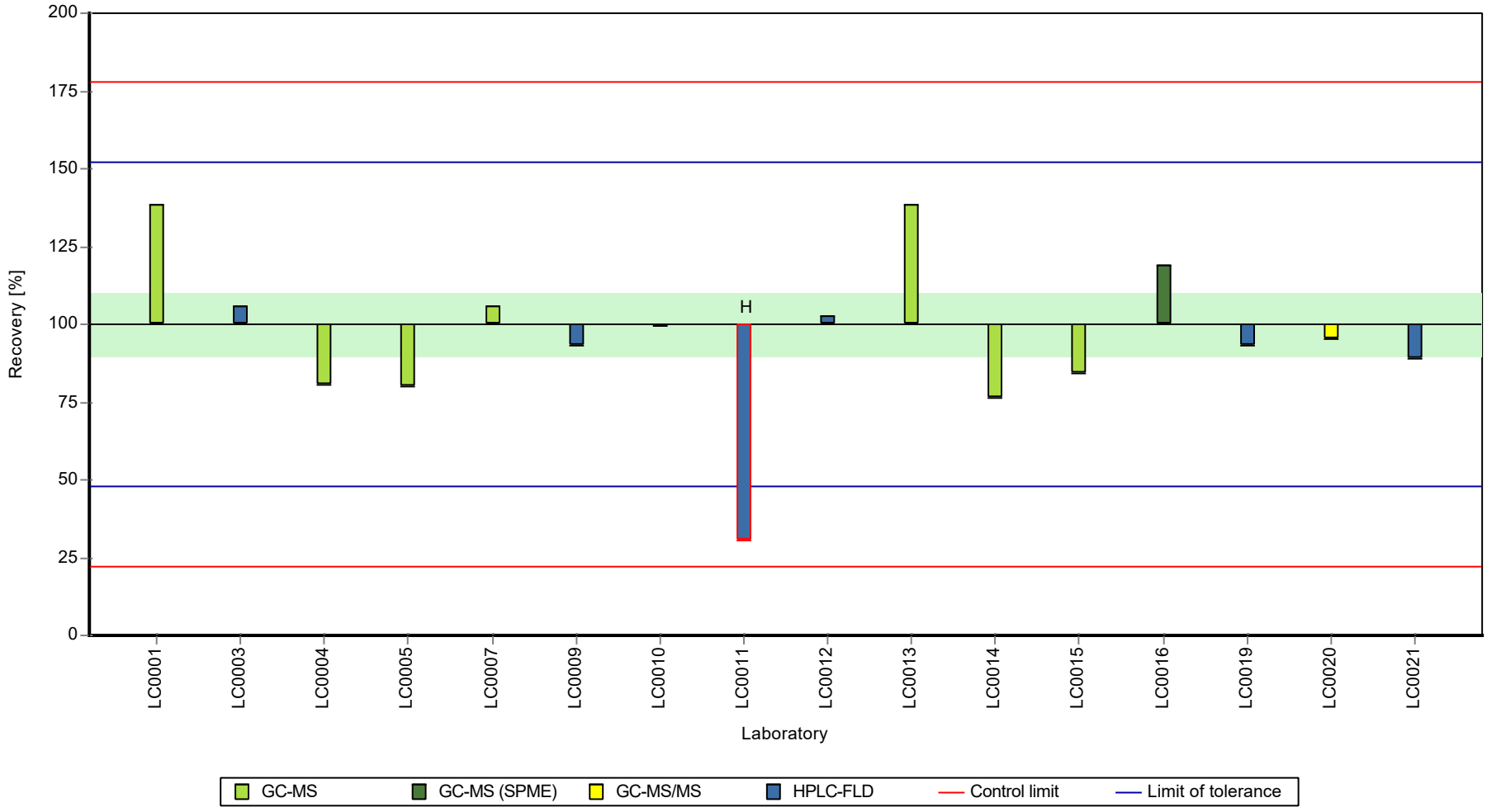
	all results	without outliers	Unit
Mean ± CI (99%)	14.4 ± 2.88	15 ± 2.25	ng/l
Minimum	4.58	11.5	ng/l
Maximum	20.8	20.8	ng/l
Standard deviation	3.83	2.9	ng/l
rel. standard deviation	26.6	19.3	%
n	16	15	-

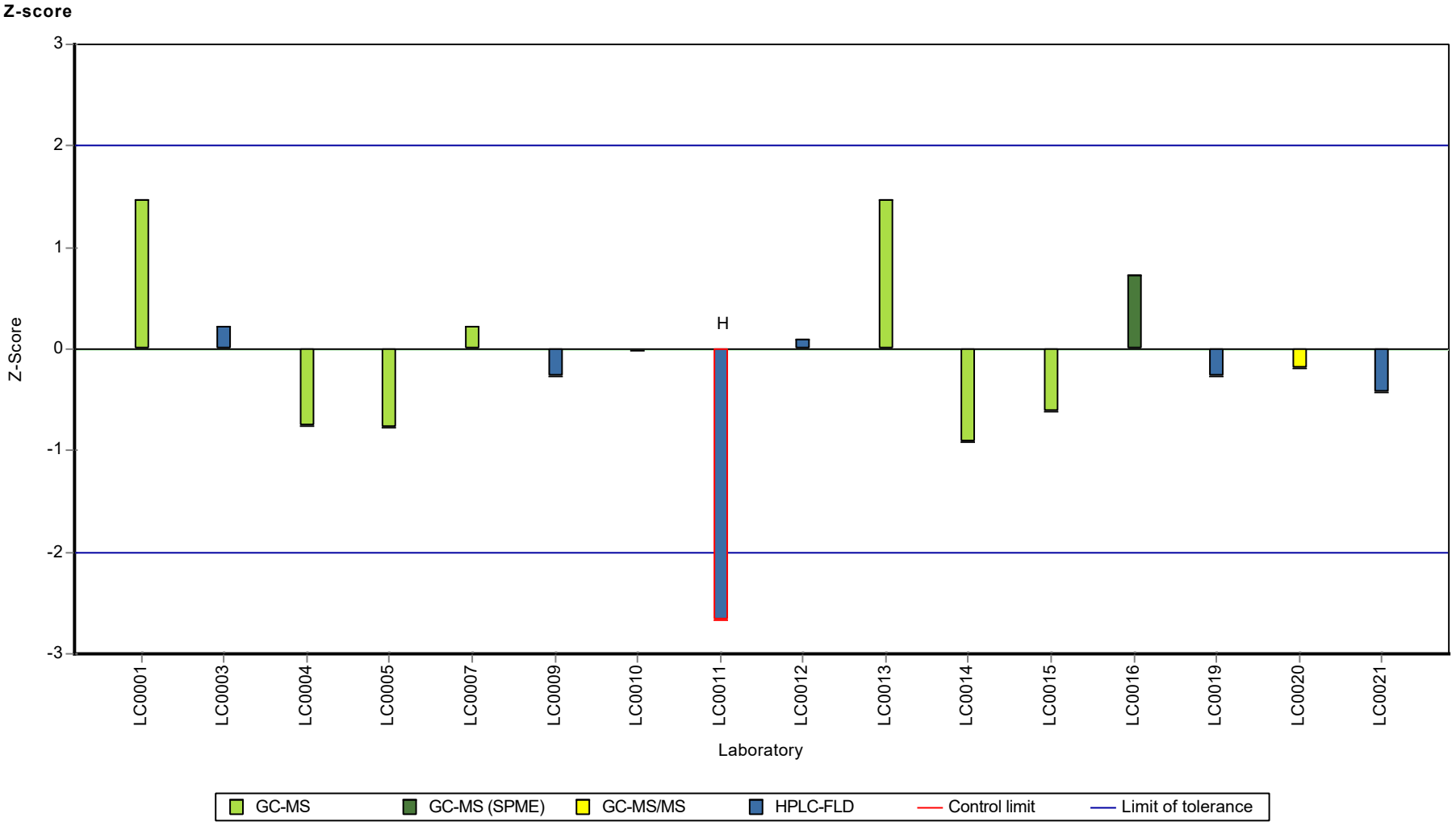
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
H
LC0001
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Benzo[k]fluoranthene

Unit	ng/l
Assigned value ± U (k=2)	121 ± 6.99
Criterion	31.5 (26 %)
Minimum - Maximum	107 - 155
Control test value ± U (k=2)	137.0 ± 41

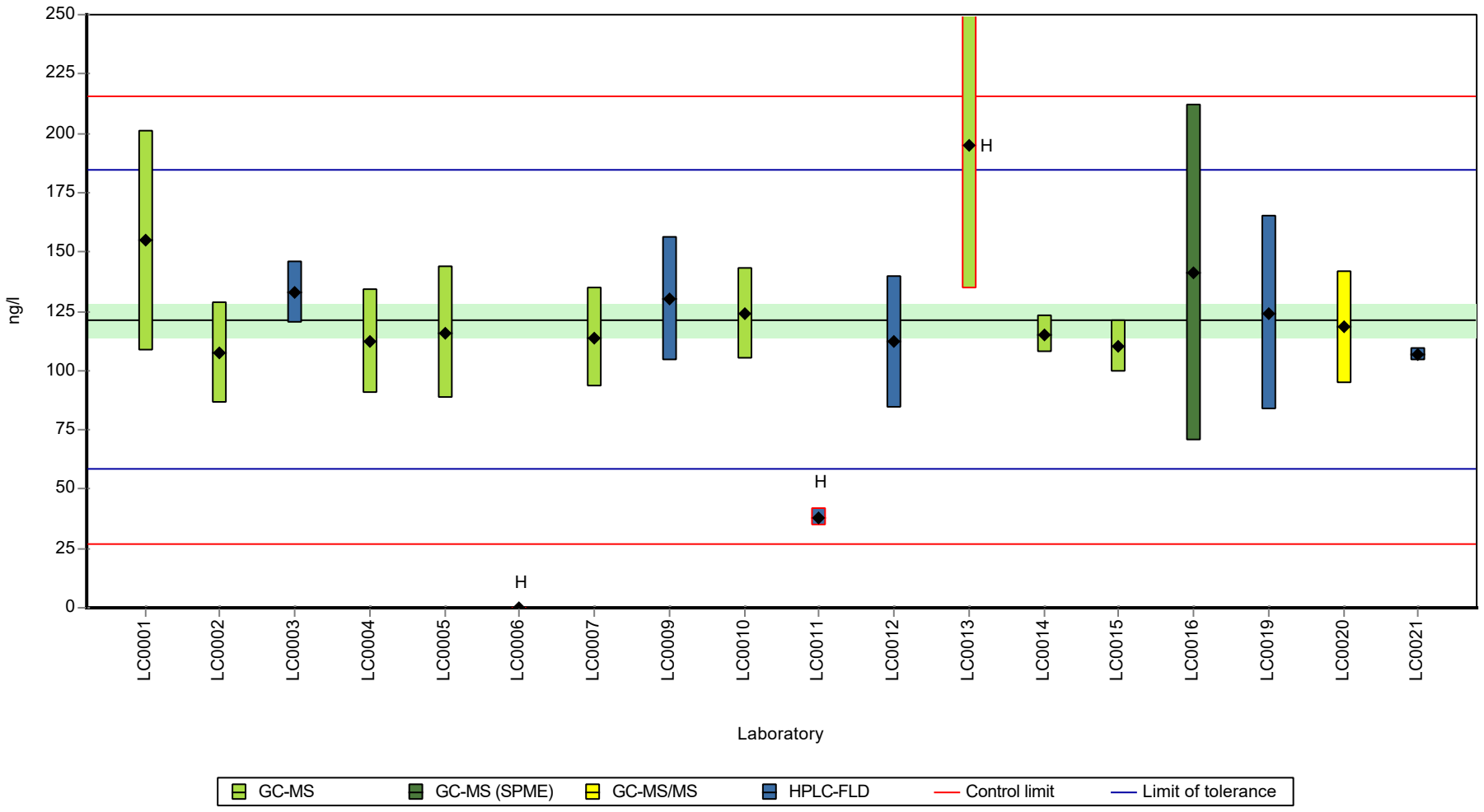
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	154.9	46.5	128	1.07	
LC0002	107.5	21.5	88.7	-0.44	
LC0003	133	13	110	0.37	
LC0004	112	22	92.4	-0.29	
LC0005	116	28	95.7	-0.17	
LC0006	0.11	0.03	0.1	-3.84	H
LC0007	113.67	21	93.7	-0.24	
LC0008	-	-	-	-	
LC0009	130	26	107	0.28	
LC0010	124	19	102	0.09	
LC0011	38	3.8	31.3	-2.64	H
LC0012	112	28	92.4	-0.29	
LC0013	195	60.6	161	2.34	H
LC0014	115.19	7.81	95	-0.19	
LC0015	110.26	11.03	90.9	-0.35	
LC0016	141	71	116	0.63	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	124	41	102	0.09	
LC0020	118.27	23.65	97.5	-0.09	
LC0021	107	2.71	88.2	-0.45	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	114 ± 29	121 ± 10.5	ng/l
Minimum	0.11	107	ng/l
Maximum	195	155	ng/l
Standard deviation	41.1	13.5	ng/l
rel. standard deviation	36	11.2	%
n	18	15	-

Graphical presentation of results

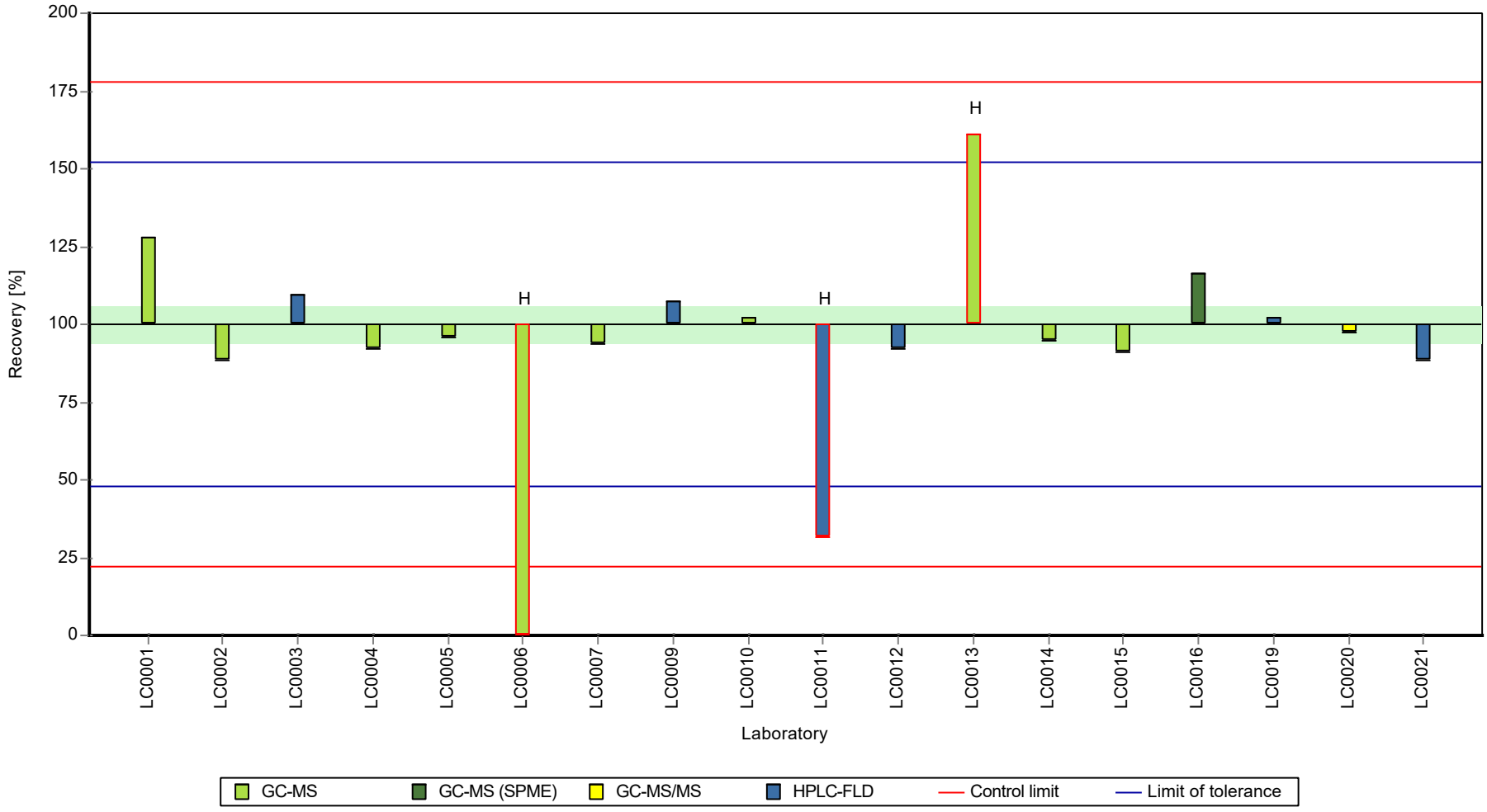
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

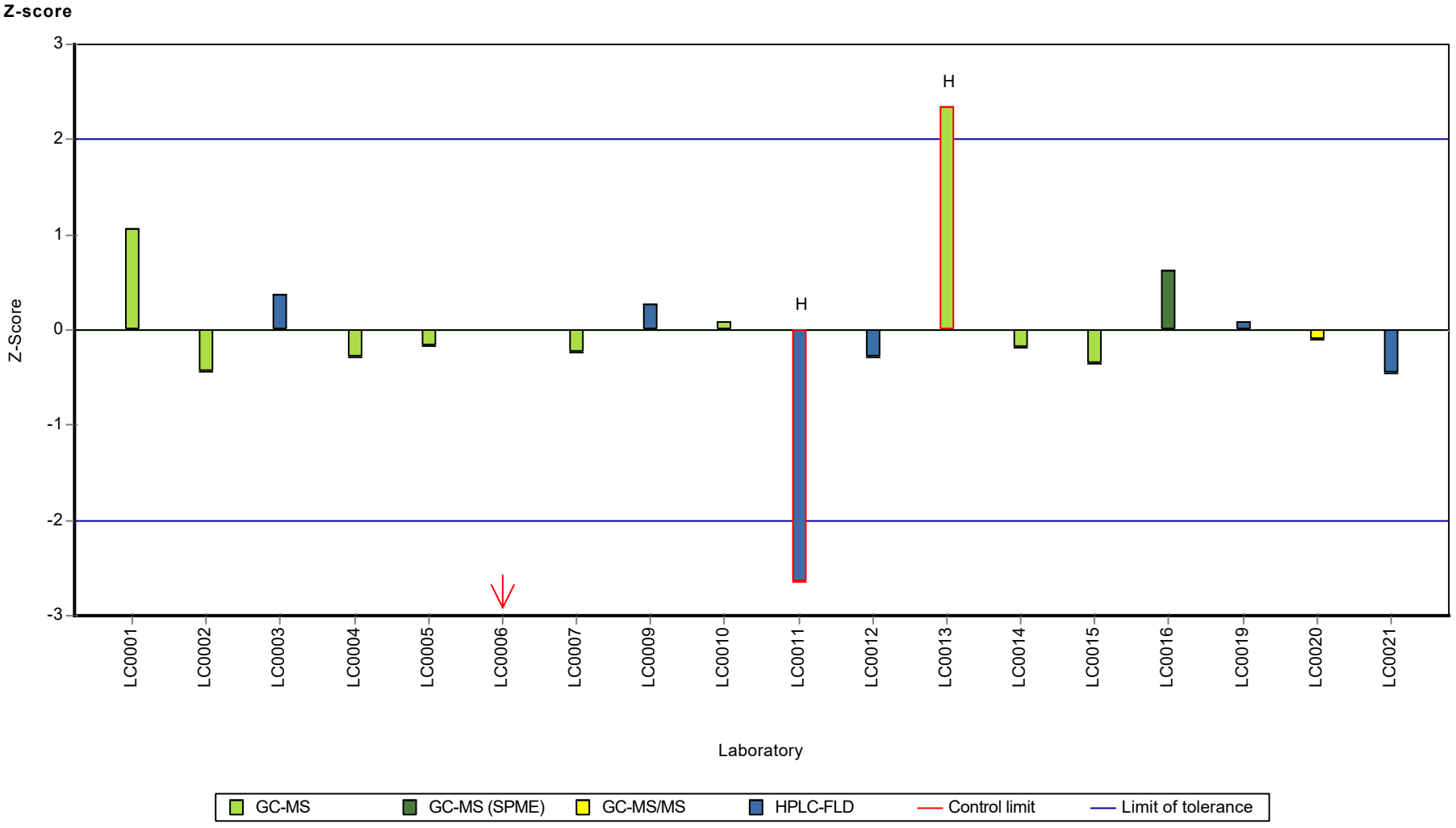
Sample: P23B, Parameter: Benzo[k]fluoranthene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Benzo[k]fluoranthene



Parameter oriented report

P23 A

Chrysene

Unit	ng/l
Assigned value ± U (k=2)	12.9 ± 0.849
Criterion	2.84 (22 %)
Minimum - Maximum	10.6 - 15.8
Control test value ± U (k=2)	11.60 ± 2.89

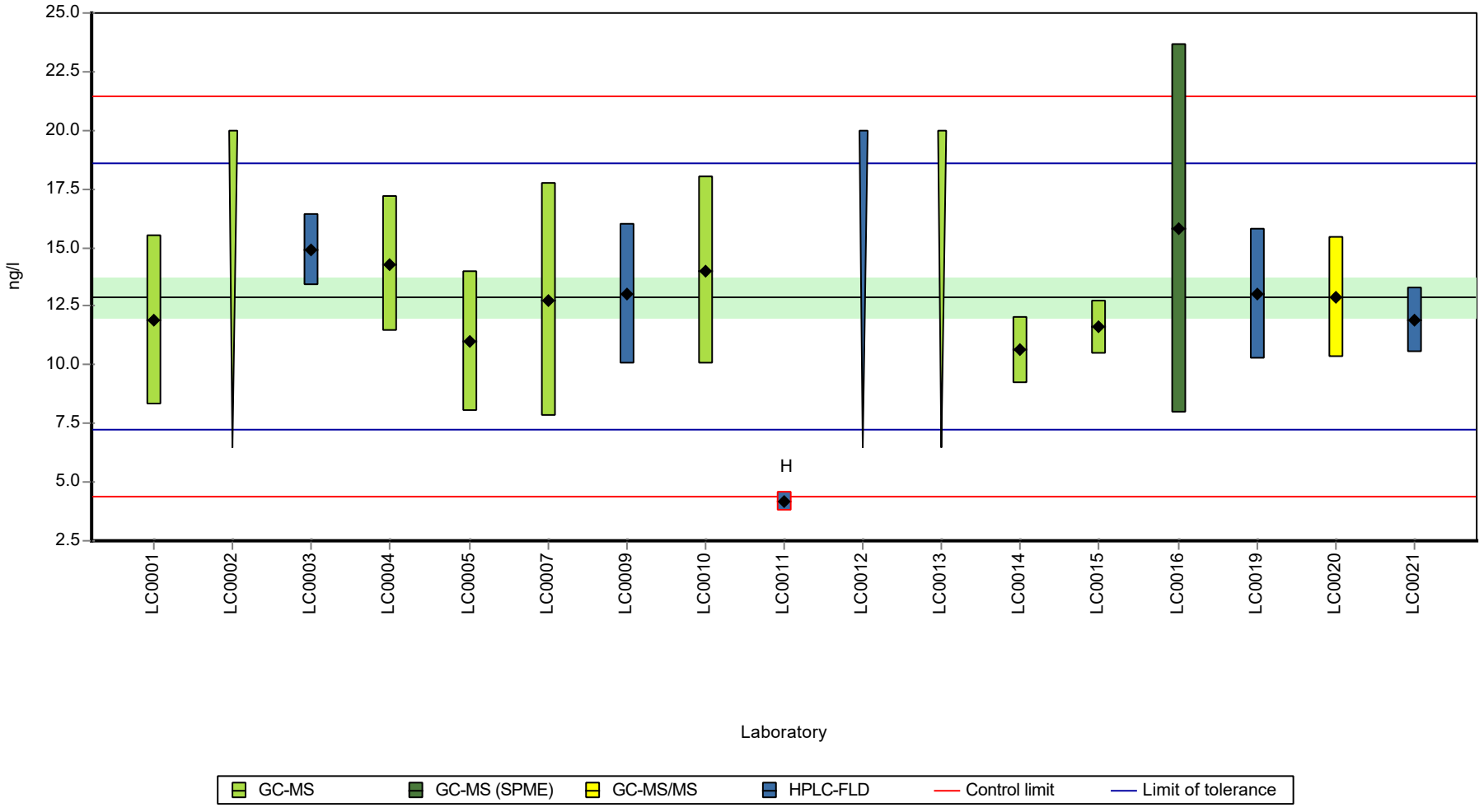
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	11.9	3.6	92.3	-0.35	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	14.9	1.5	116	0.7	
LC0004	14.3	2.9	111	0.49	
LC0005	11	3	85.3	-0.67	
LC0006	-	-	-	-	
LC0007	12.77	5	99	-0.05	
LC0008	-	-	-	-	
LC0009	13	3	101	0.04	
LC0010	14	4	109	0.39	
LC0011	4.18	0.418	32.4	-3.07	H
LC0012	< 20 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	10.62	1.44	82.3	-0.8	
LC0015	11.61	1.16	90	-0.45	
LC0016	15.8	7.9	122	1.02	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	13	2.8	101	0.04	
LC0020	12.89	2.58	99.9	0.00	
LC0021	11.9	1.39	92.3	-0.35	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	12.3 ± 2.21	12.9 ± 1.27	ng/l
Minimum	4.18	10.6	ng/l
Maximum	15.8	15.8	ng/l
Standard deviation	2.76	1.53	ng/l
rel. standard deviation	22.4	11.9	%
n	14	13	-

Graphical presentation of results

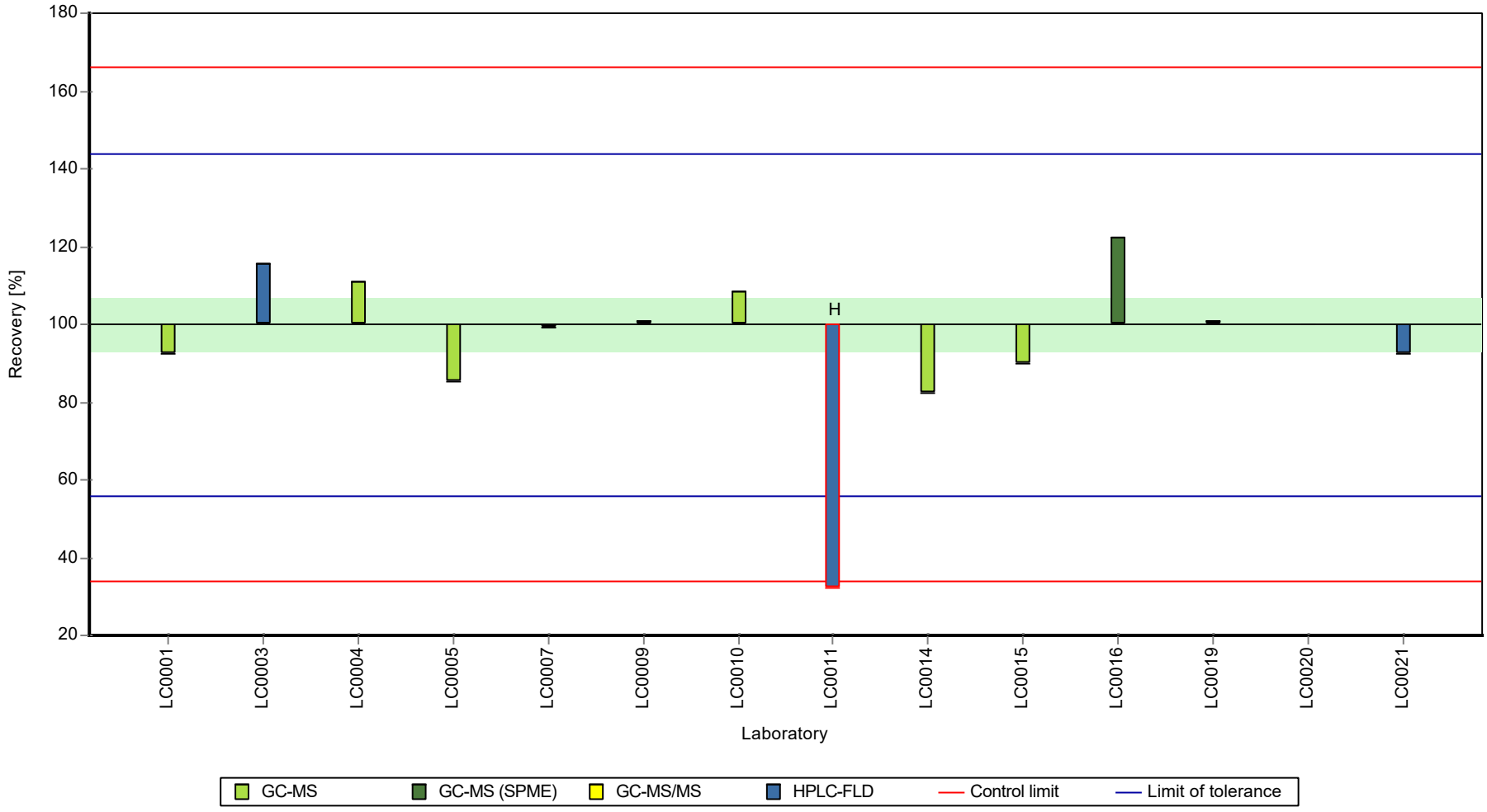
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

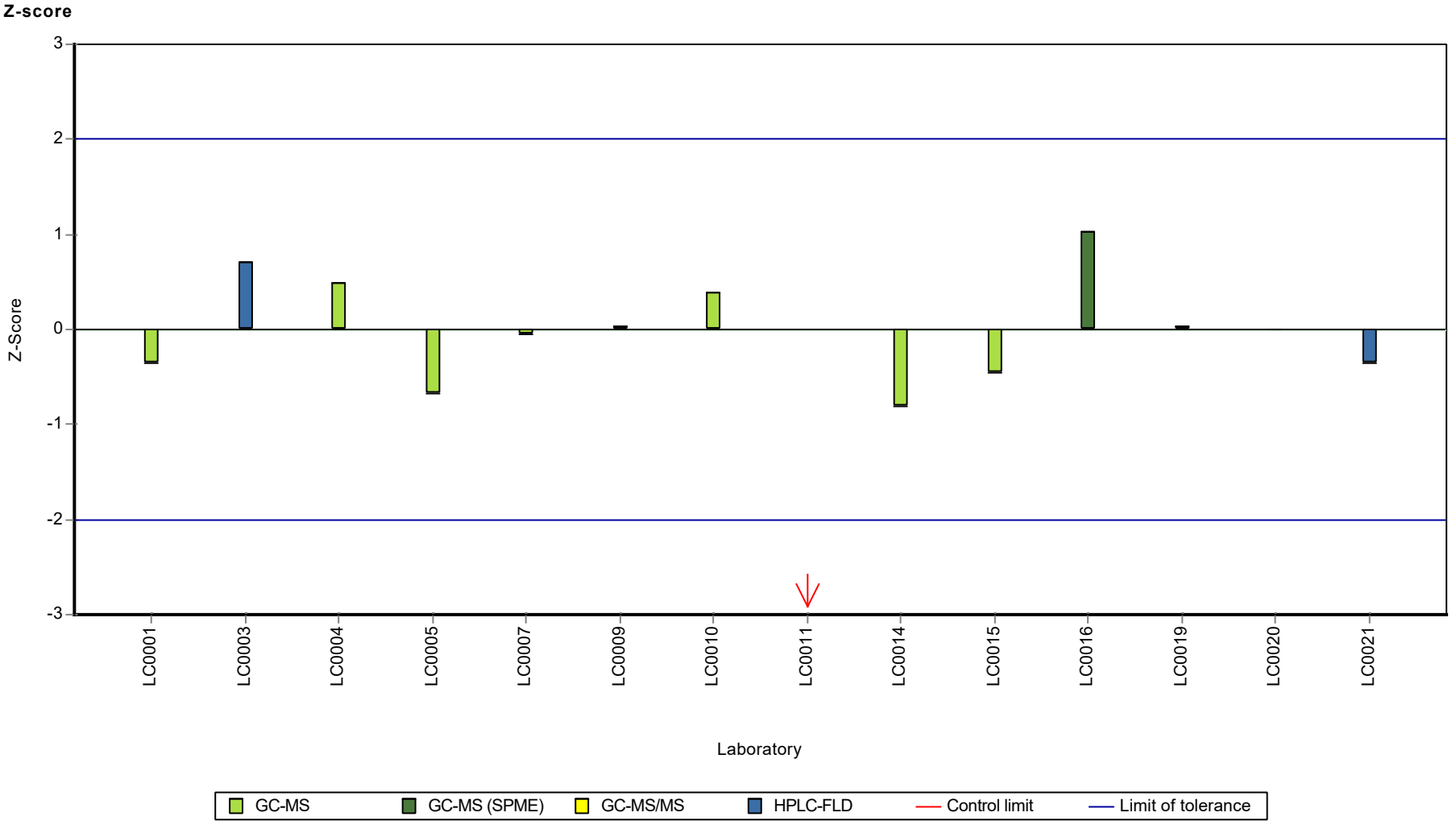
Sample: P23A, Parameter: Chrysene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Chrysene



Parameter oriented report

P23 B

Chrysene

Unit	ng/l
Assigned value ± U (k=2)	141 ± 7.44
Criterion	31 (22 %)
Minimum - Maximum	122 - 170
Control test value ± U (k=2)	142.0 ± 35.4

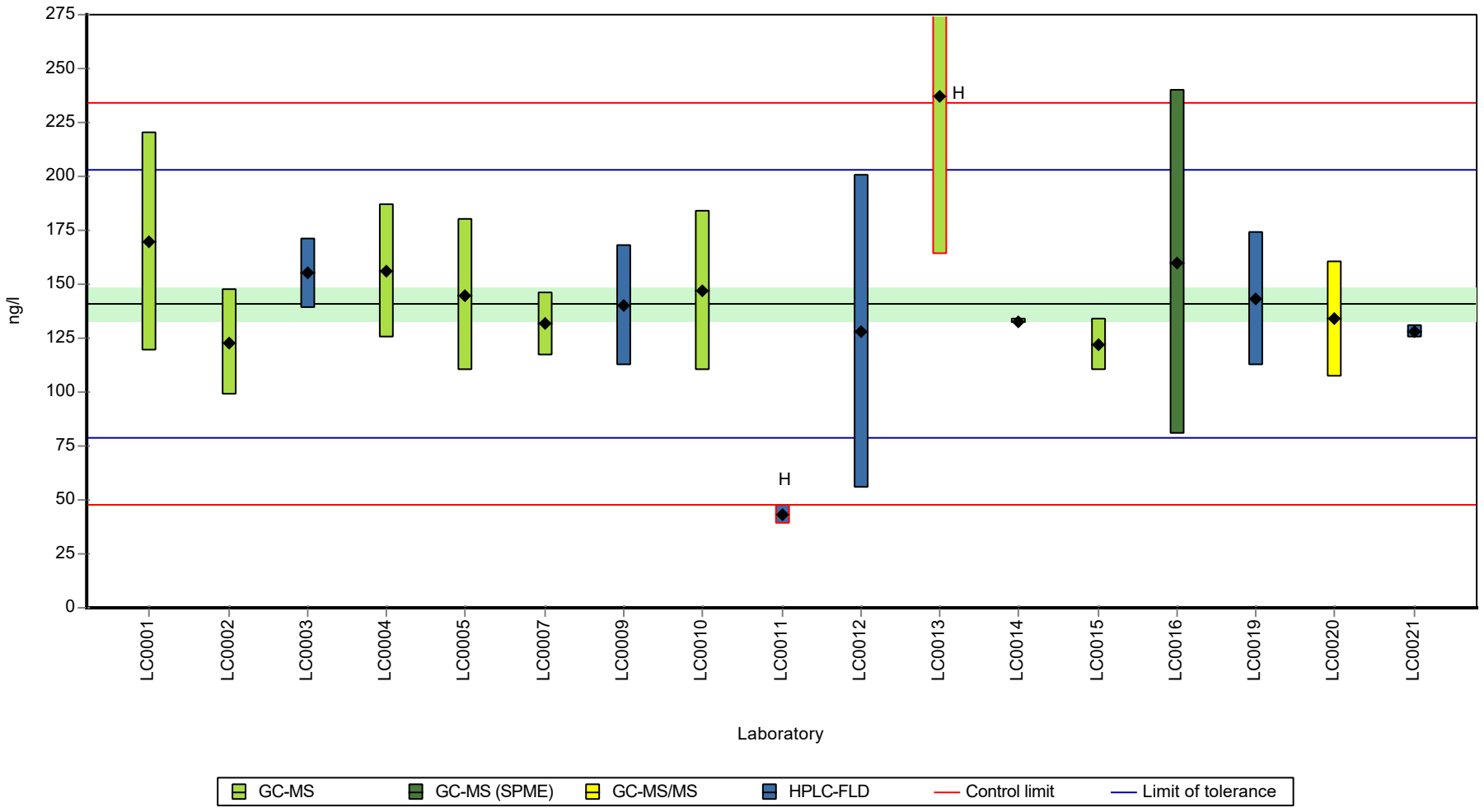
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	169.6	50.9	120	0.92	
LC0002	122.8	24.6	87.1	-0.58	
LC0003	155	16	110	0.45	
LC0004	156	31	111	0.48	
LC0005	145	35	103	0.13	
LC0006	-	-	-	-	
LC0007	131.52	15	93.3	-0.3	
LC0008	-	-	-	-	
LC0009	140	28	99.3	-0.03	
LC0010	147	37	104	0.2	
LC0011	43.3	4.33	30.7	-3.15	H
LC0012	128	73	90.8	-0.42	
LC0013	237	73.4	168	3.1	H
LC0014	132.91	1.46	94.3	-0.26	
LC0015	121.78	12.18	86.4	-0.62	
LC0016	160	80	114	0.61	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	143	31	101	0.07	
LC0020	133.73	26.75	94.9	-0.23	
LC0021	128	2.87	90.8	-0.42	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	141 ± 26.8	141 ± 11.2	ng/l
Minimum	43.3	122	ng/l
Maximum	237	170	ng/l
Standard deviation	36.8	14.4	ng/l
rel. standard deviation	26.1	10.2	%
n	17	15	-

Graphical presentation of results

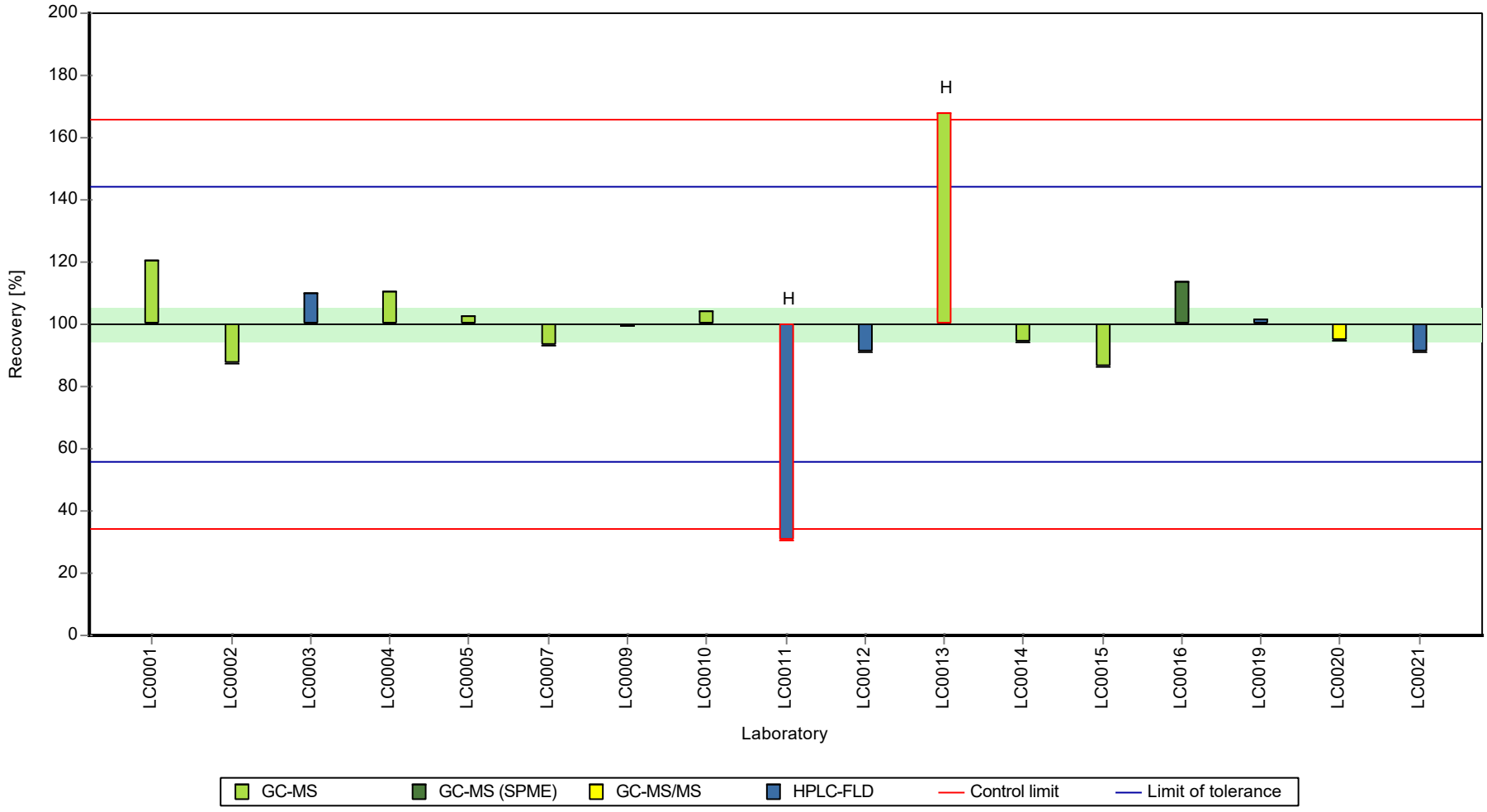
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

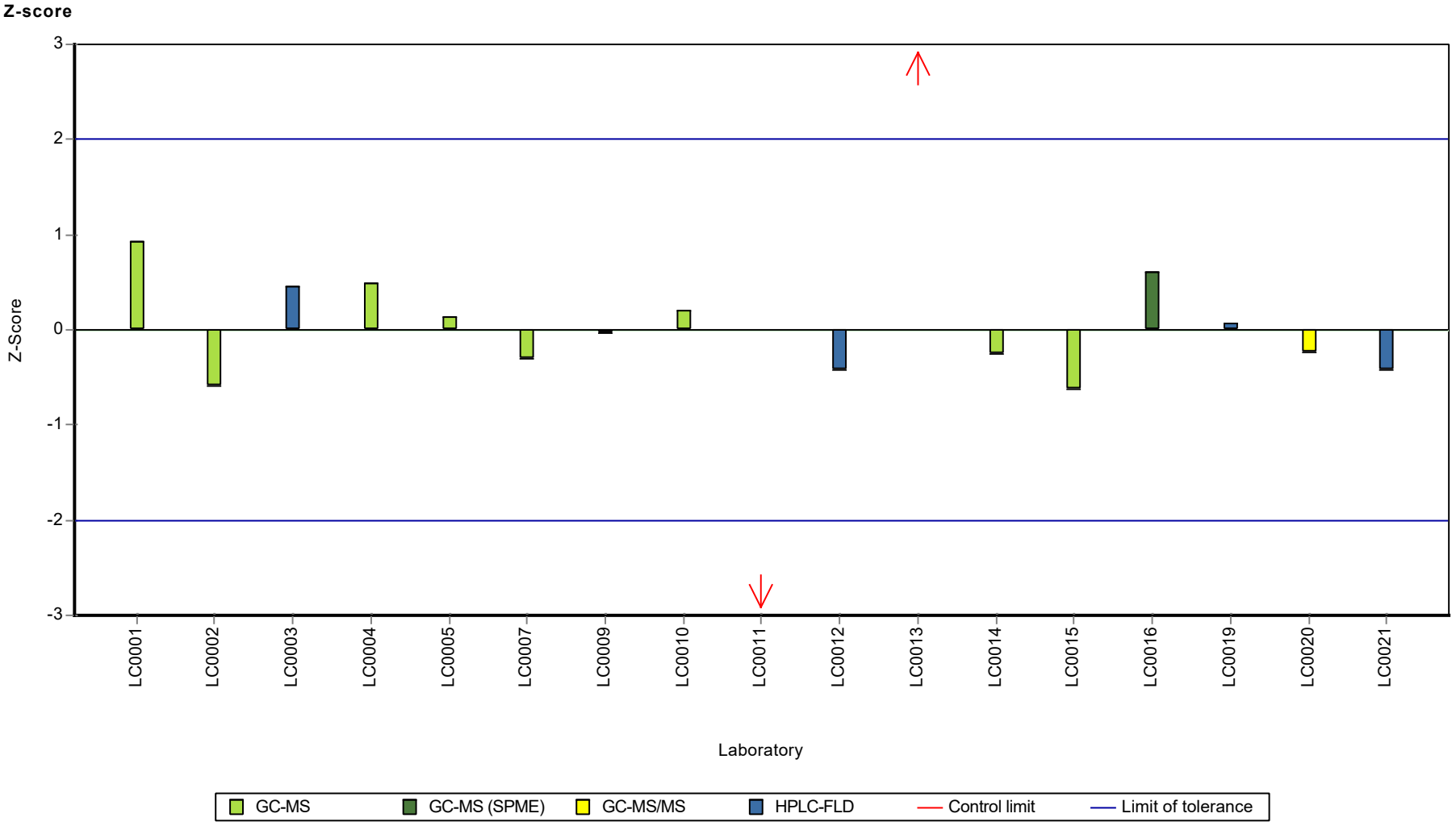
Sample: P23B, Parameter: Chrysene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Chrysene



Parameter oriented report

P23 A

Dibenzo[a,h]anthracene

Unit	ng/l
Assigned value ± U (k=2)	16.3 ± 2.56
Criterion	4.89 (30 %)
Minimum - Maximum	5.14 - 23
Control test value ± U (k=2)	21.70 ± 7.61

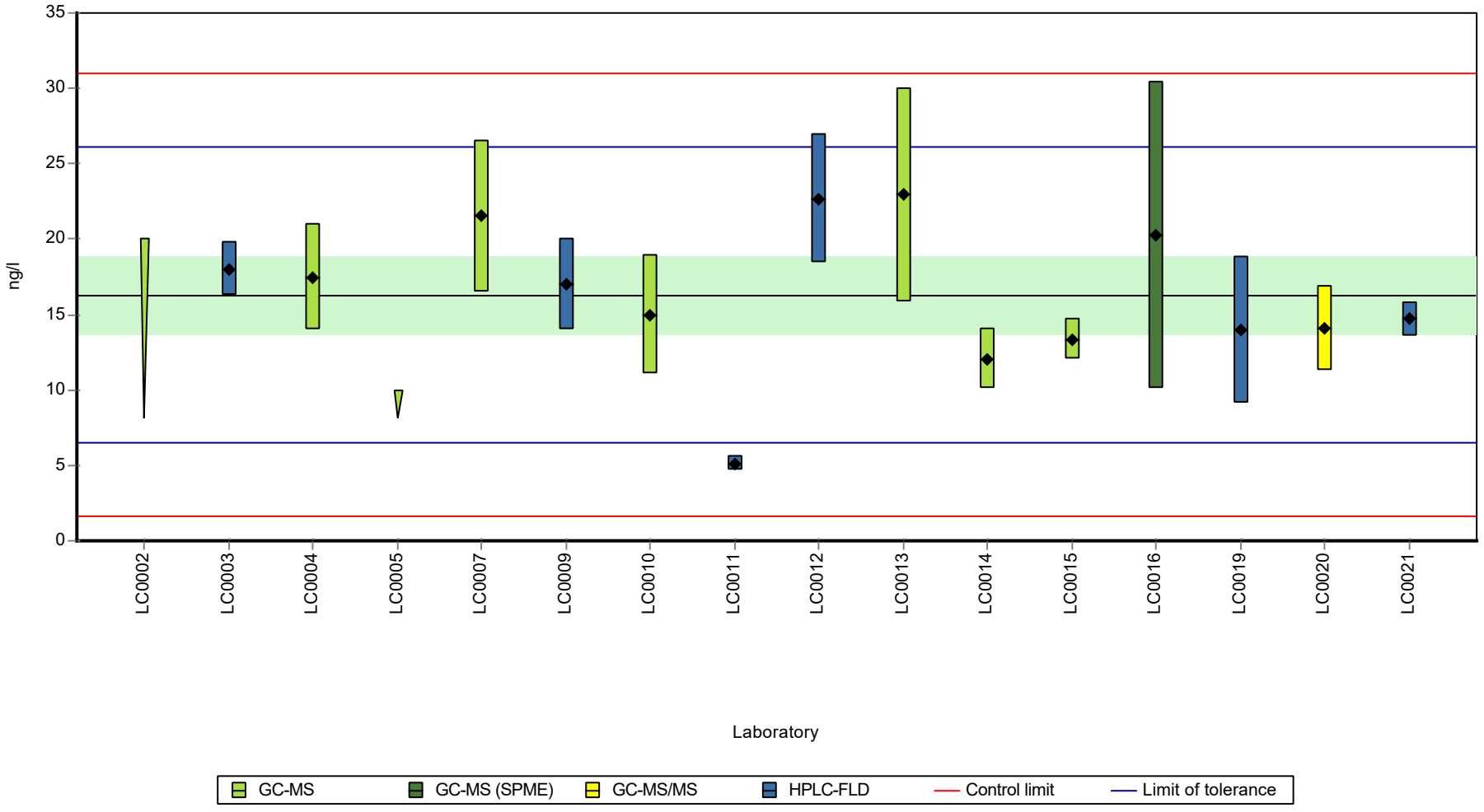
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	18	1.8	110	0.35	
LC0004	17.5	3.5	107	0.24	
LC0005	< 10 (LOQ)	-	-	-	
LC0006	-	-	-	-	
LC0007	21.51	5	132	1.06	
LC0008	-	-	-	-	
LC0009	17	3	104	0.14	
LC0010	15	4	92	-0.27	
LC0011	5.14	0.514	31.5	-2.28	
LC0012	22.7	4.3	139	1.31	
LC0013	22.95	7.11	141	1.36	
LC0014	12.04	2	73.8	-0.87	
LC0015	13.37	1.34	82	-0.6	
LC0016	20.3	10.2	125	0.82	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	14	4.9	85.9	-0.47	
LC0020	14.06	2.81	86.2	-0.46	
LC0021	14.7	1.13	90.2	-0.33	

Characteristics of parameter

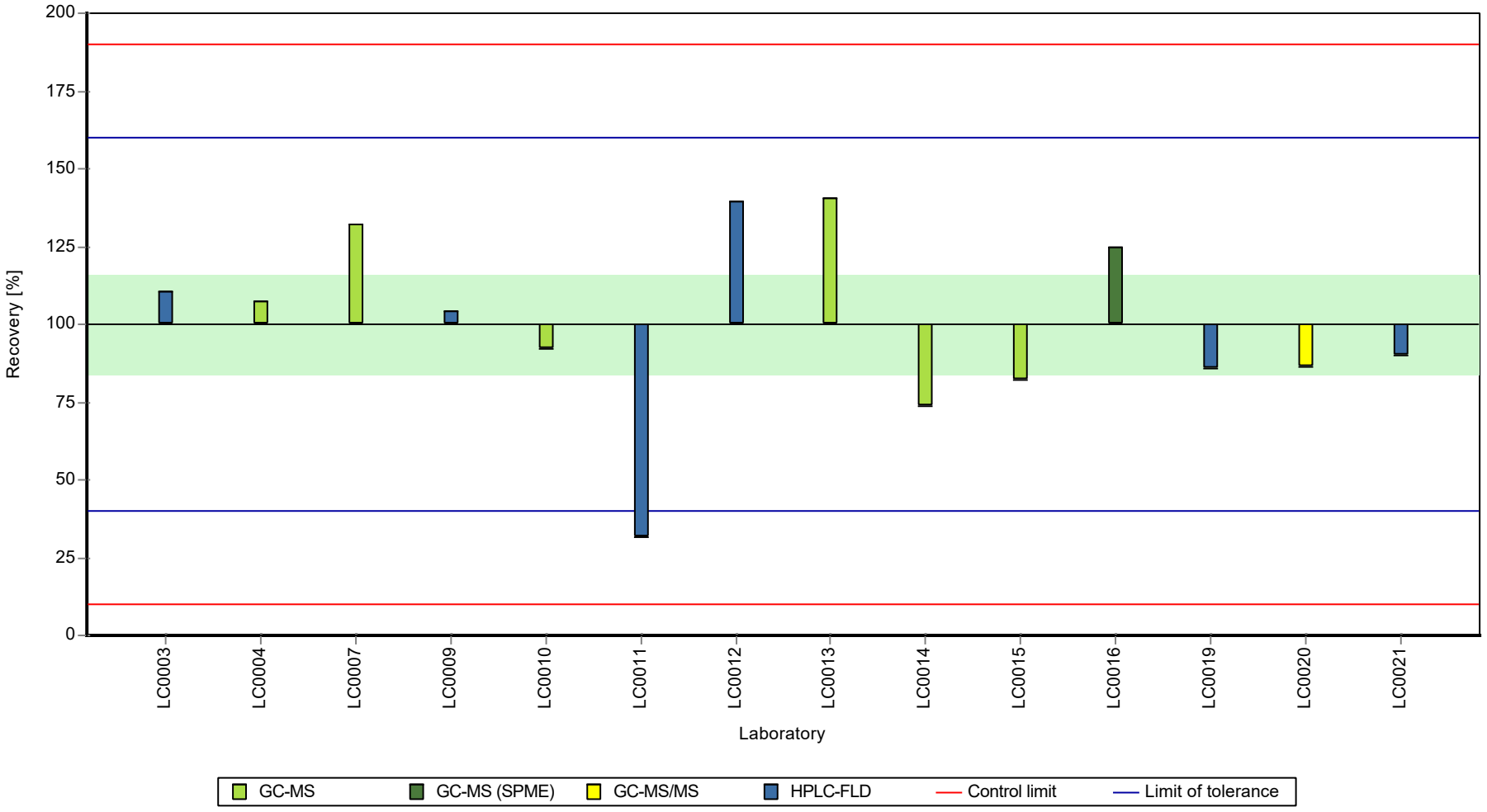
	all results	without outliers	Unit
Mean ± CI (99%)	16.3 ± 3.85	16.3 ± 3.85	ng/l
Minimum	5.14	5.14	ng/l
Maximum	23	23	ng/l
Standard deviation	4.8	4.8	ng/l
rel. standard deviation	29.4	29.4	%
n	14	14	-

Graphical presentation of results

Results

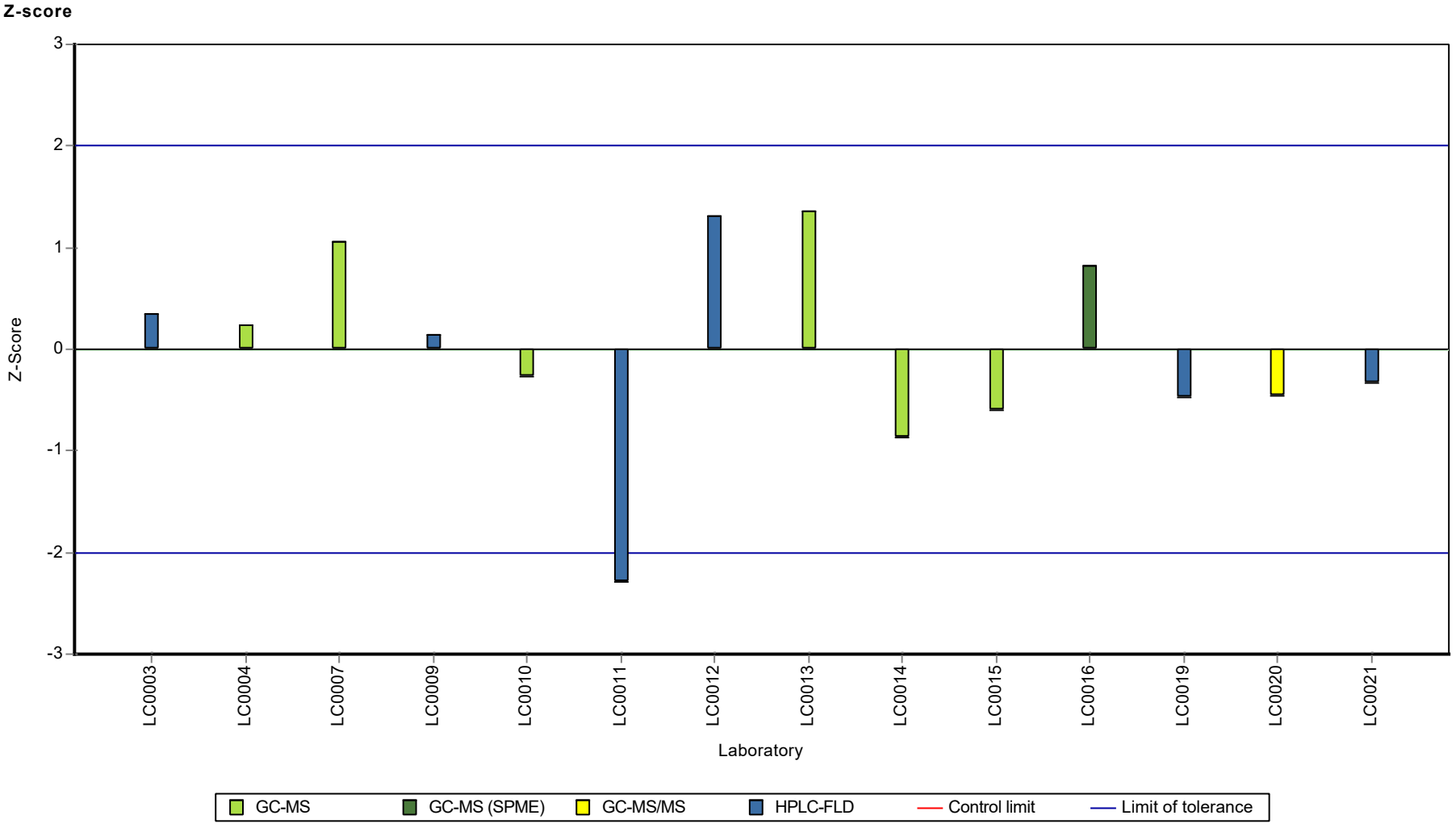


Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Dibenzo[a,h]anthracene



Parameter oriented report

P23 B

Dibenzo[a,h]anthracene

Unit	ng/l
Assigned value ± U (k=2)	117 ± 16.8
Criterion	35.1 (30 %)
Minimum - Maximum	37.5 - 180
Control test value ± U (k=2)	167.0 ± 58.4

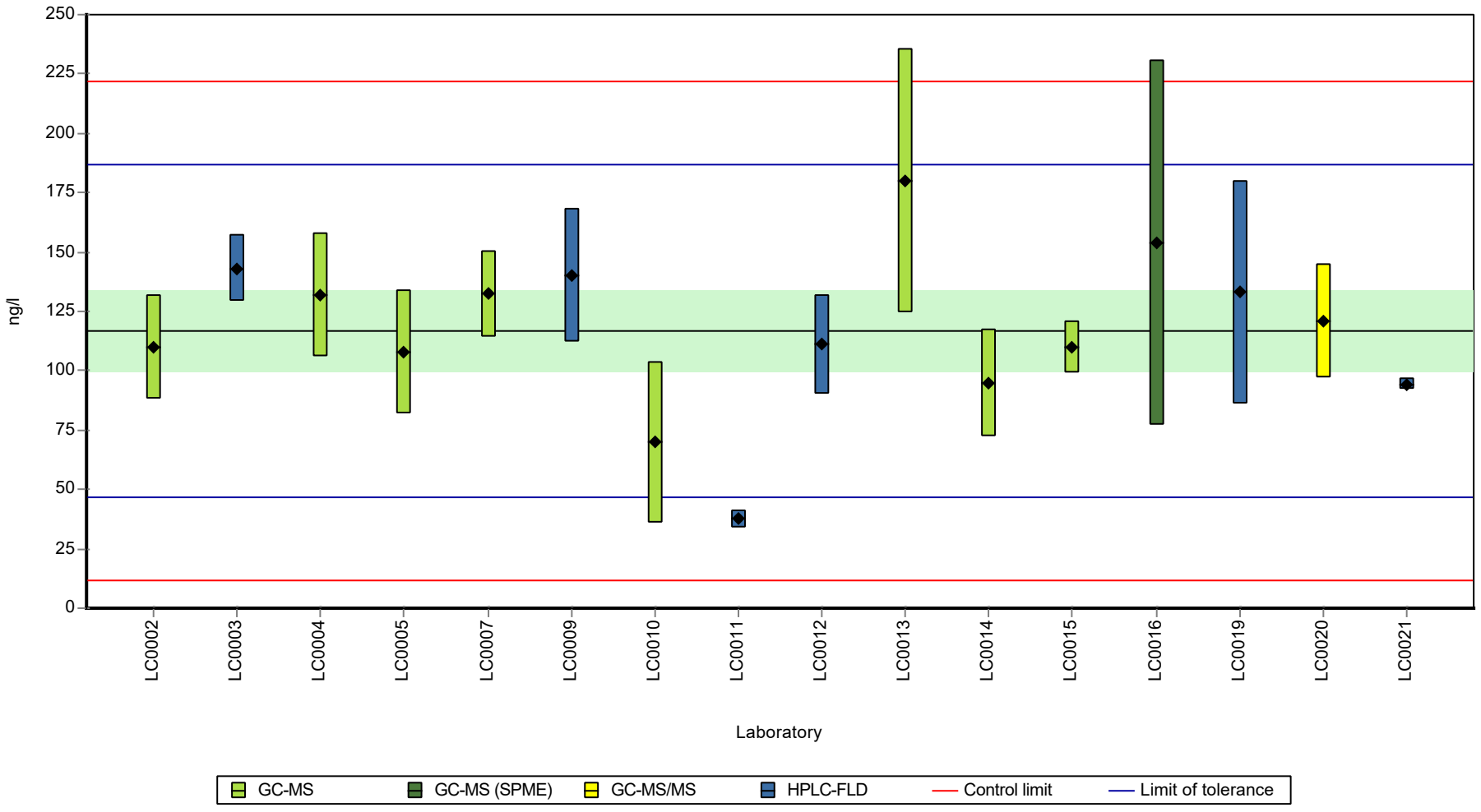
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	110.1	22	94.2	-0.2	
LC0003	143	14	122	0.74	
LC0004	132	26	113	0.43	
LC0005	108	26	92.4	-0.26	
LC0006	-	-	-	-	
LC0007	132.3	18	113	0.44	
LC0008	-	-	-	-	
LC0009	140	28	120	0.66	
LC0010	70	34	59.9	-1.34	
LC0011	37.5	3.75	32.1	-2.26	
LC0012	111	21	94.9	-0.17	
LC0013	180	55.9	154	1.8	
LC0014	94.95	22.54	81.2	-0.63	
LC0015	109.7	10.97	93.8	-0.21	
LC0016	154	77	132	1.06	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	133	47	114	0.46	
LC0020	120.98	24.2	103	0.12	
LC0021	94.4	2.26	80.7	-0.64	

Characteristics of parameter

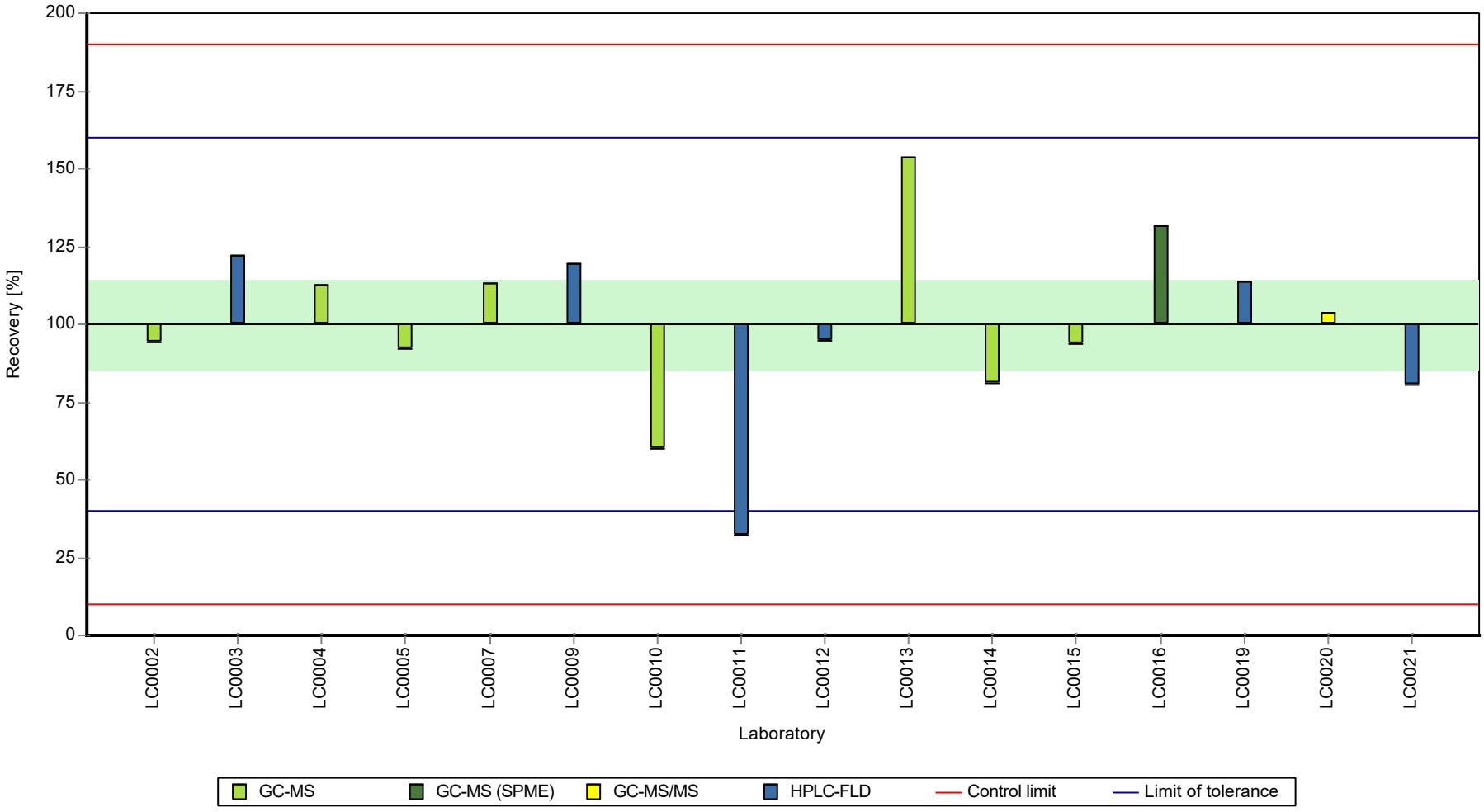
	all results	without outliers	Unit
Mean ± CI (99%)	117 ± 25.3	117 ± 25.3	ng/l
Minimum	37.5	37.5	ng/l
Maximum	180	180	ng/l
Standard deviation	33.7	33.7	ng/l
rel. standard deviation	28.8	28.8	%
n	16	16	-

Graphical presentation of results

Results

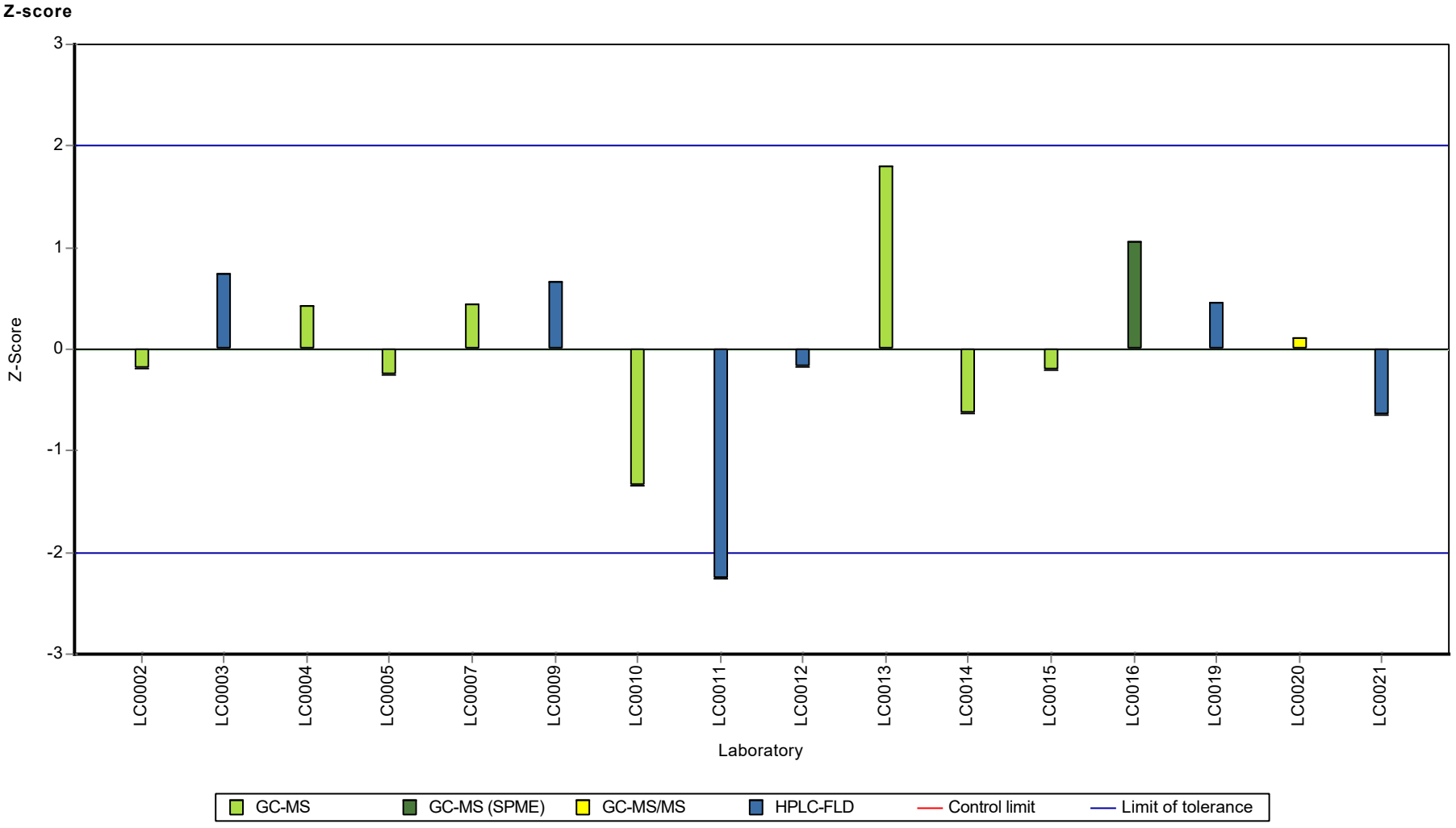


Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Dibenzo[a,h]anthracene



Parameter oriented report

P23 A

Fluoranthene

Unit	ng/l
Assigned value ± U (k=2)	19.3 ± 1.32
Criterion	3.48 (18 %)
Minimum - Maximum	15 - 23.3
Control test value ± U (k=2)	21.70 ± 5.41

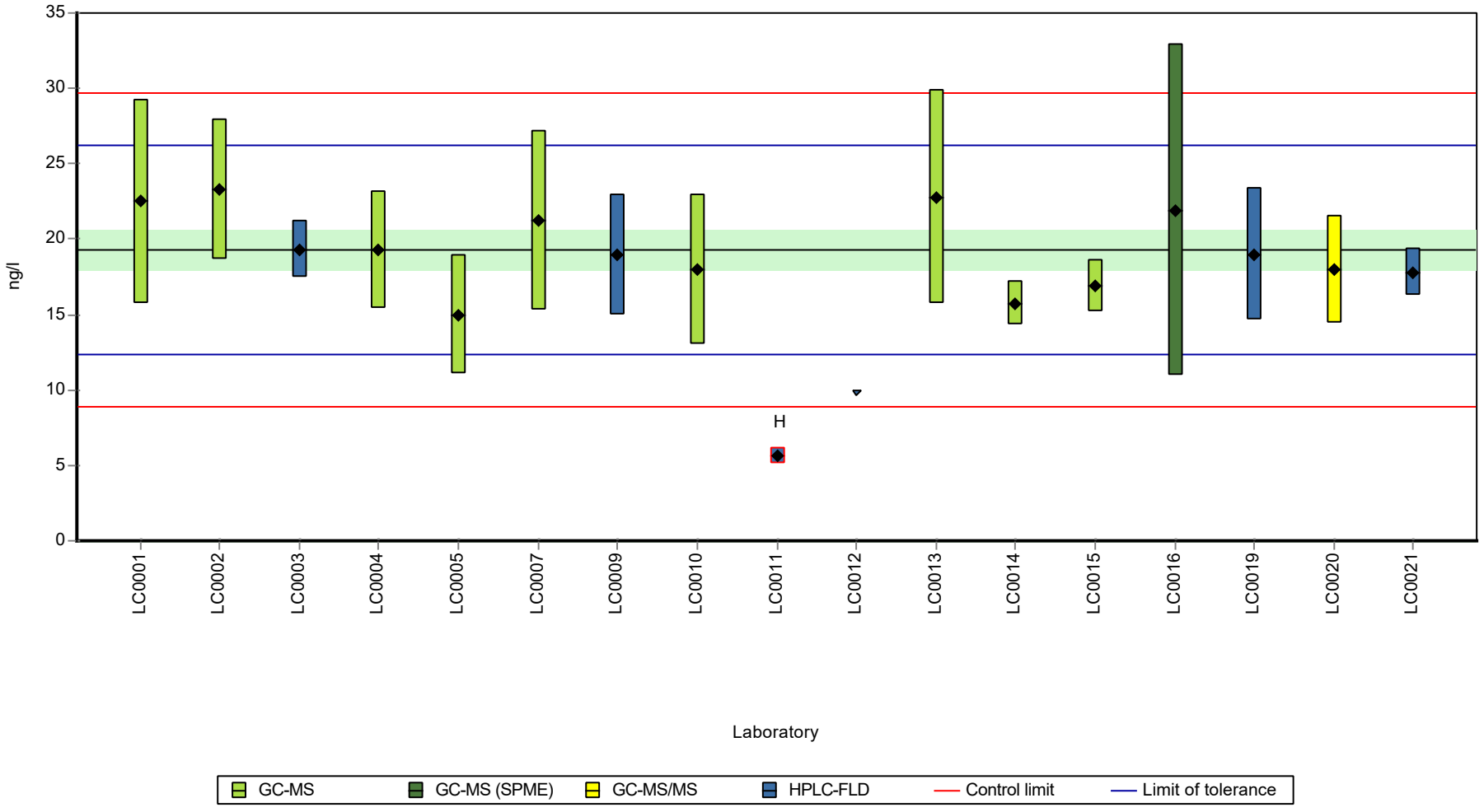
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	22.5	6.8	116	0.92	
LC0002	23.3	4.7	121	1.15	
LC0003	19.3	1.9	99.9	0.00	
LC0004	19.3	3.9	99.9	0.00	
LC0005	15	4	77.7	-1.24	
LC0006	-	-	-	-	
LC0007	21.24	6	110	0.55	
LC0008	-	-	-	-	
LC0009	19	4	98.4	-0.09	
LC0010	18	5	93.2	-0.38	
LC0011	5.61	0.561	29	-3.94	H
LC0012	< 10 (LOQ)	-	-	-	
LC0013	22.8	7.07	118	1	
LC0014	15.72	1.46	81.4	-1.03	
LC0015	16.9	1.69	87.5	-0.69	
LC0016	21.9	11	113	0.74	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	19	4.4	98.4	-0.09	
LC0020	17.95	3.59	92.9	-0.39	
LC0021	17.8	1.58	92.2	-0.43	

Characteristics of parameter

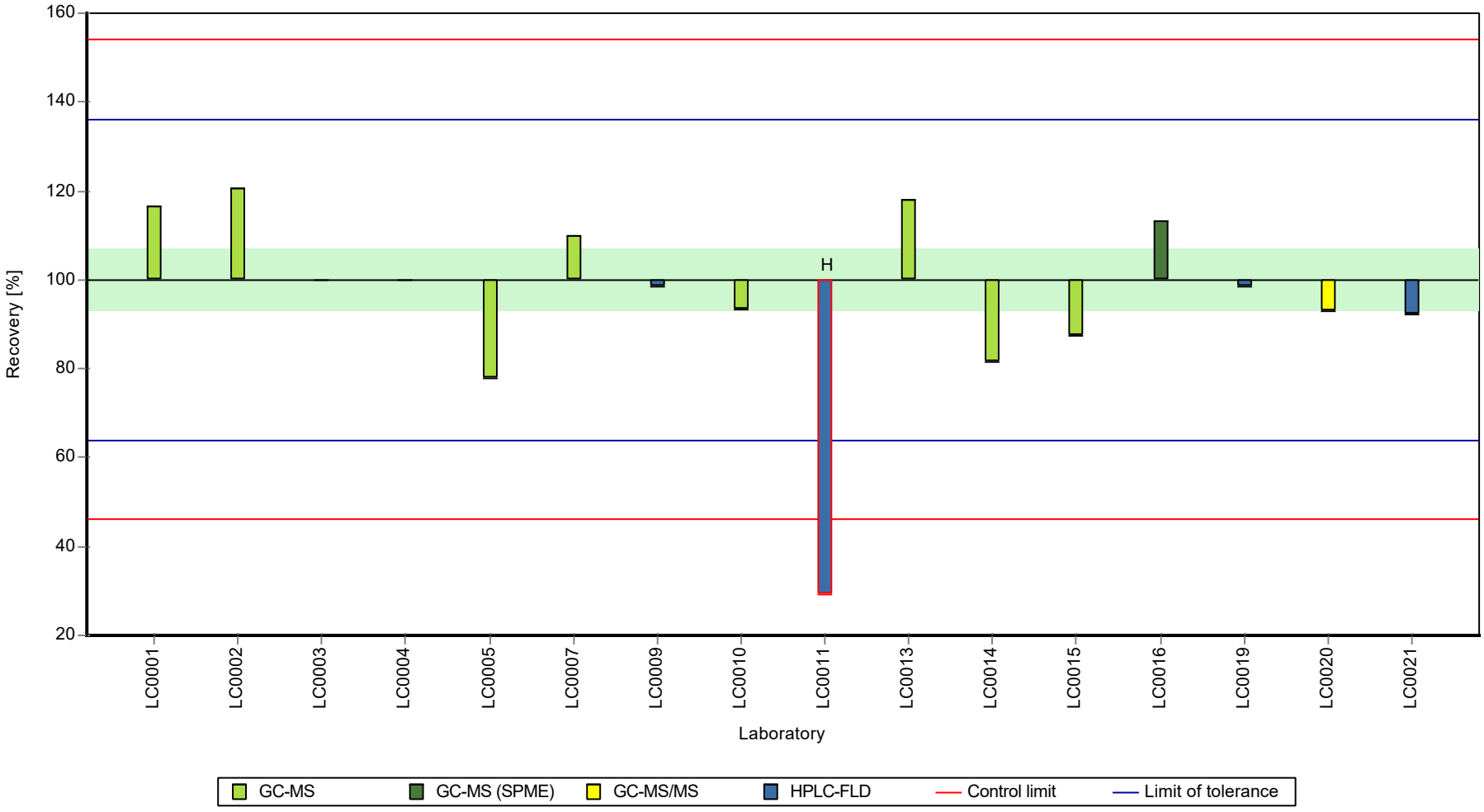
	all results	without outliers	Unit
Mean ± CI (99%)	18.5 ± 3.17	19.3 ± 1.99	ng/l
Minimum	5.61	15	ng/l
Maximum	23.3	23.3	ng/l
Standard deviation	4.23	2.56	ng/l
rel. standard deviation	22.9	13.3	%
n	16	15	-

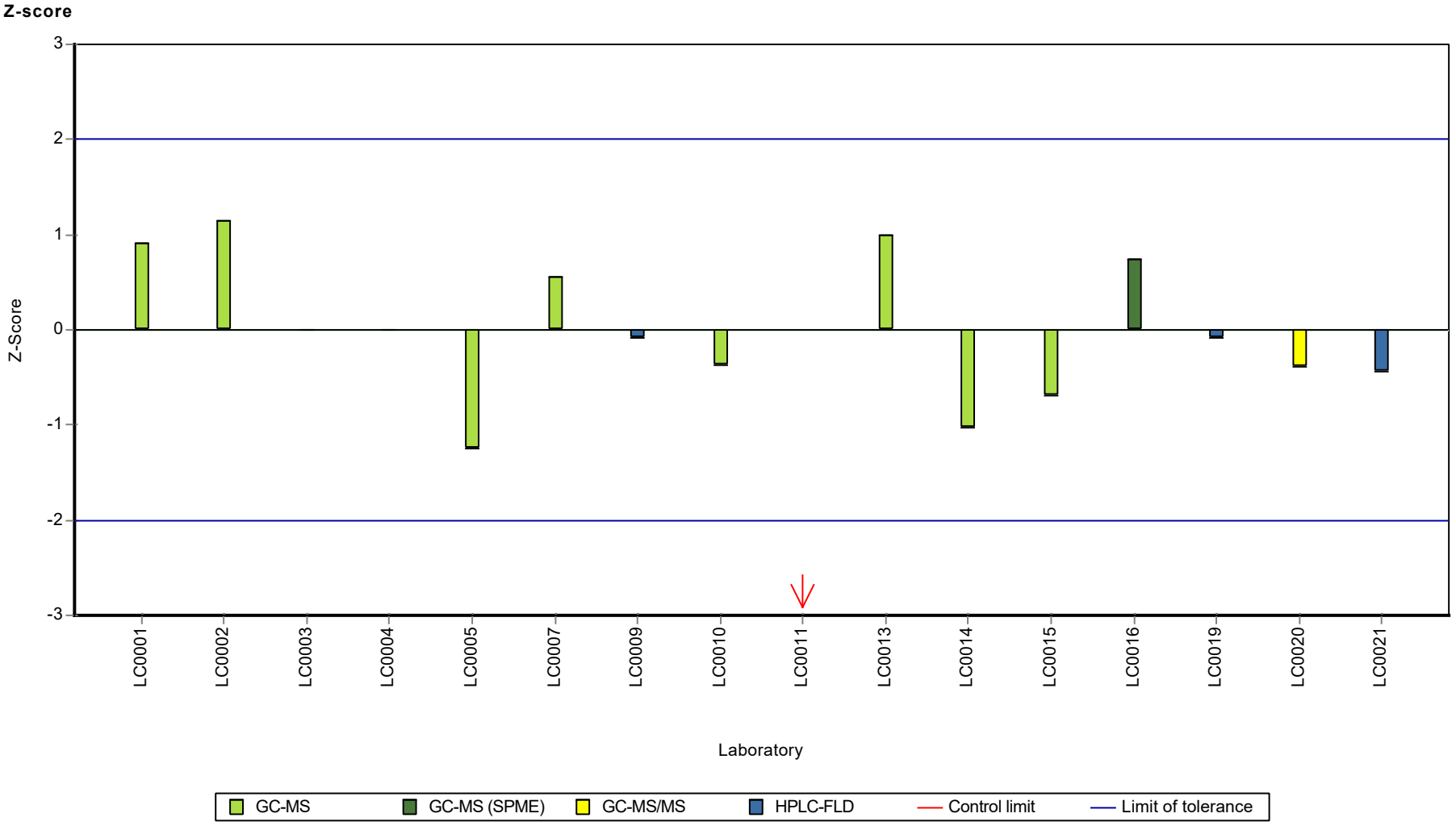
Graphical presentation of results

Results



Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Fluoranthene

Unit	ng/l
Assigned value ± U (k=2)	147 ± 7.76
Criterion	26.4 (18 %)
Minimum - Maximum	126 - 176
Control test value ± U (k=2)	161.0 ± 40.2

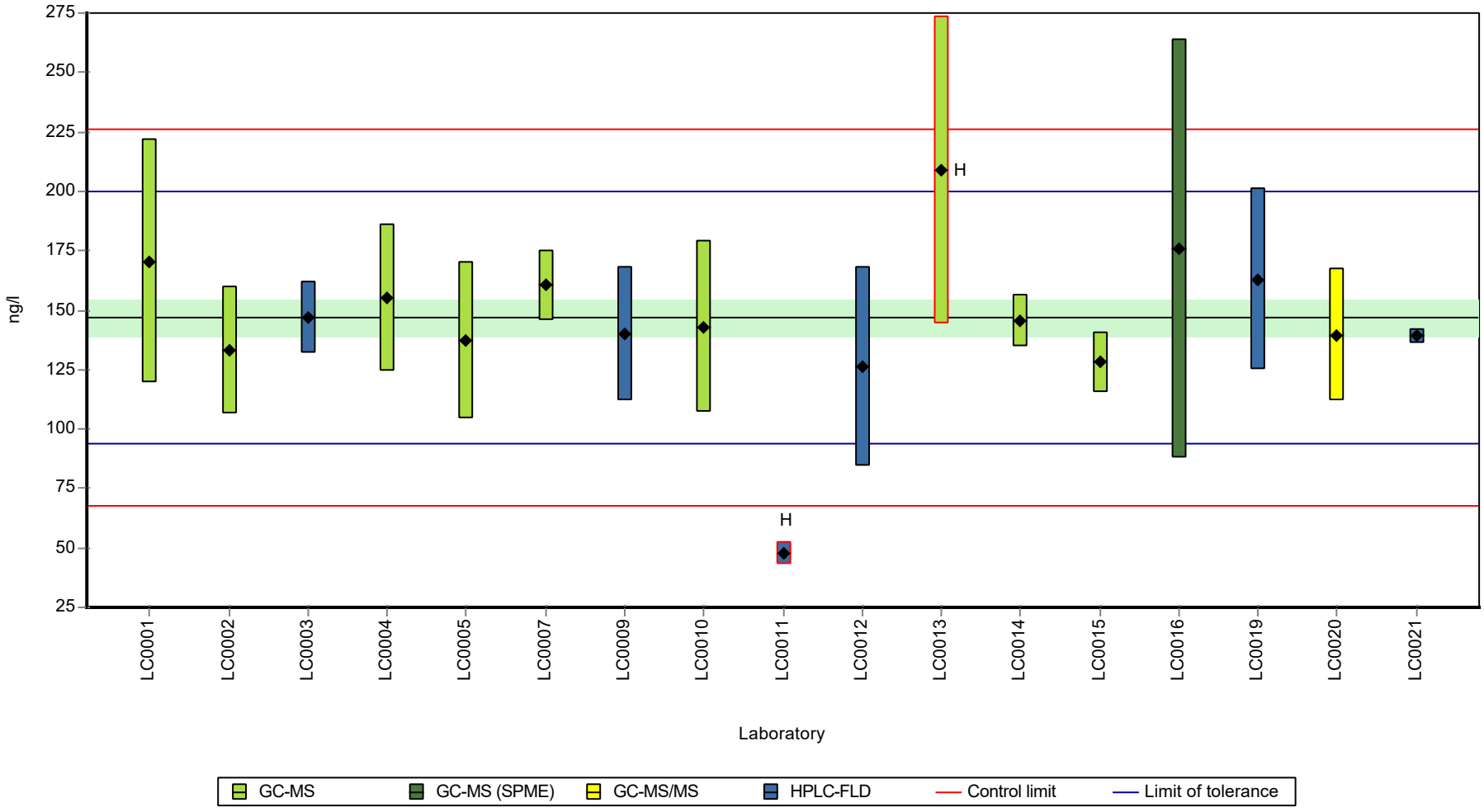
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	170.5	51.2	116	0.89	
LC0002	133.3	26.7	90.7	-0.51	
LC0003	147	15	100	0.00	
LC0004	155	31	106	0.31	
LC0005	137	33	93.3	-0.37	
LC0006	-	-	-	-	
LC0007	160.43	15	109	0.51	
LC0008	-	-	-	-	
LC0009	140	28	95.3	-0.26	
LC0010	143	36	97.3	-0.15	
LC0011	47.5	4.75	32.3	-3.76	H
LC0012	126	42	85.8	-0.79	
LC0013	209	64.8	142	2.35	H
LC0014	145.62	10.9	99.1	-0.05	
LC0015	128.2	12.82	87.3	-0.71	
LC0016	176	88	120	1.1	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	163	38	111	0.61	
LC0020	139.39	27.88	94.9	-0.28	
LC0021	139	3.24	94.6	-0.3	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	145 ± 23.6	147 ± 11.6	ng/l
Minimum	47.5	126	ng/l
Maximum	209	176	ng/l
Standard deviation	32.4	15	ng/l
rel. standard deviation	22.4	10.2	%
n	17	15	-

Graphical presentation of results

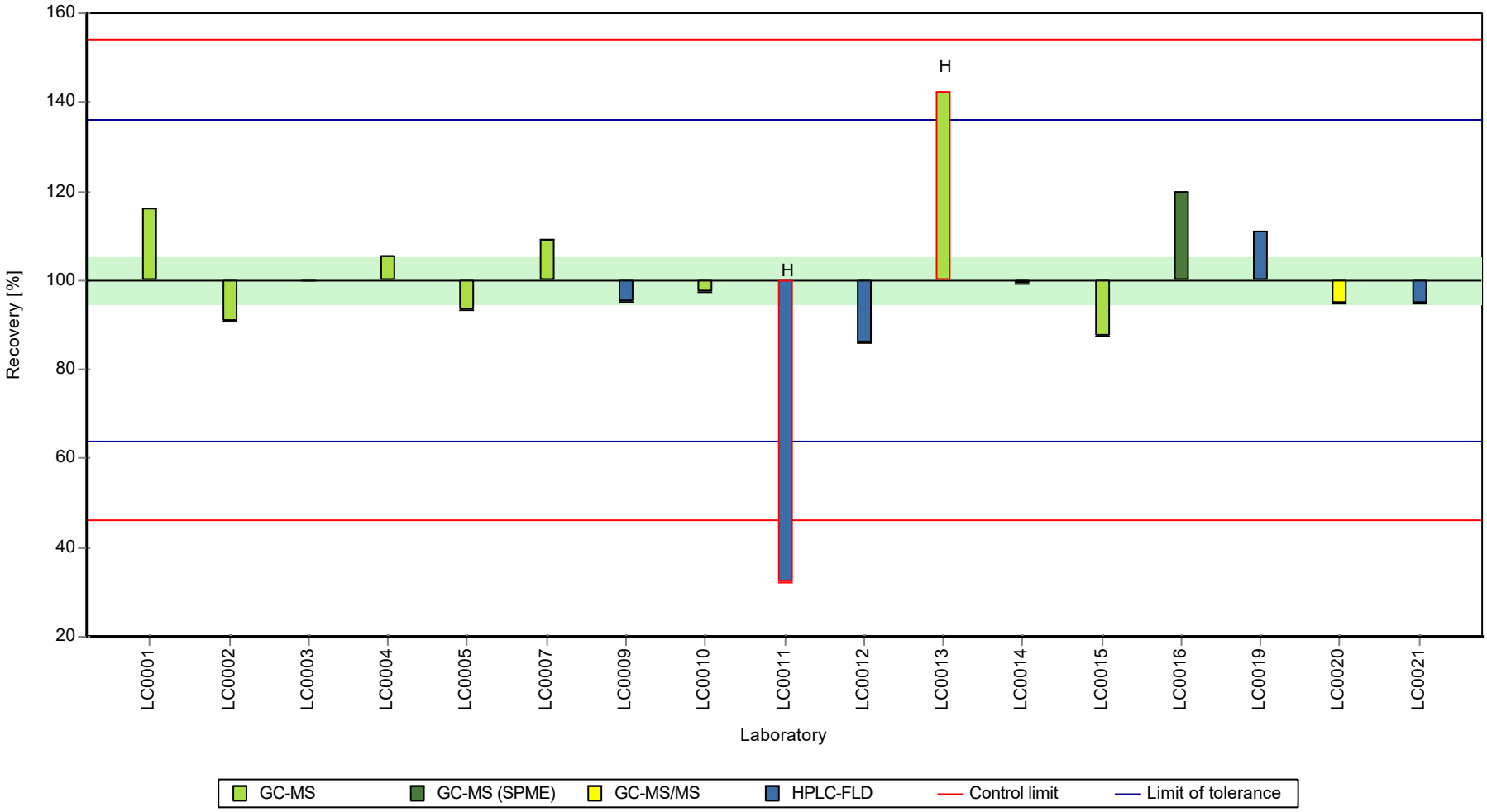
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

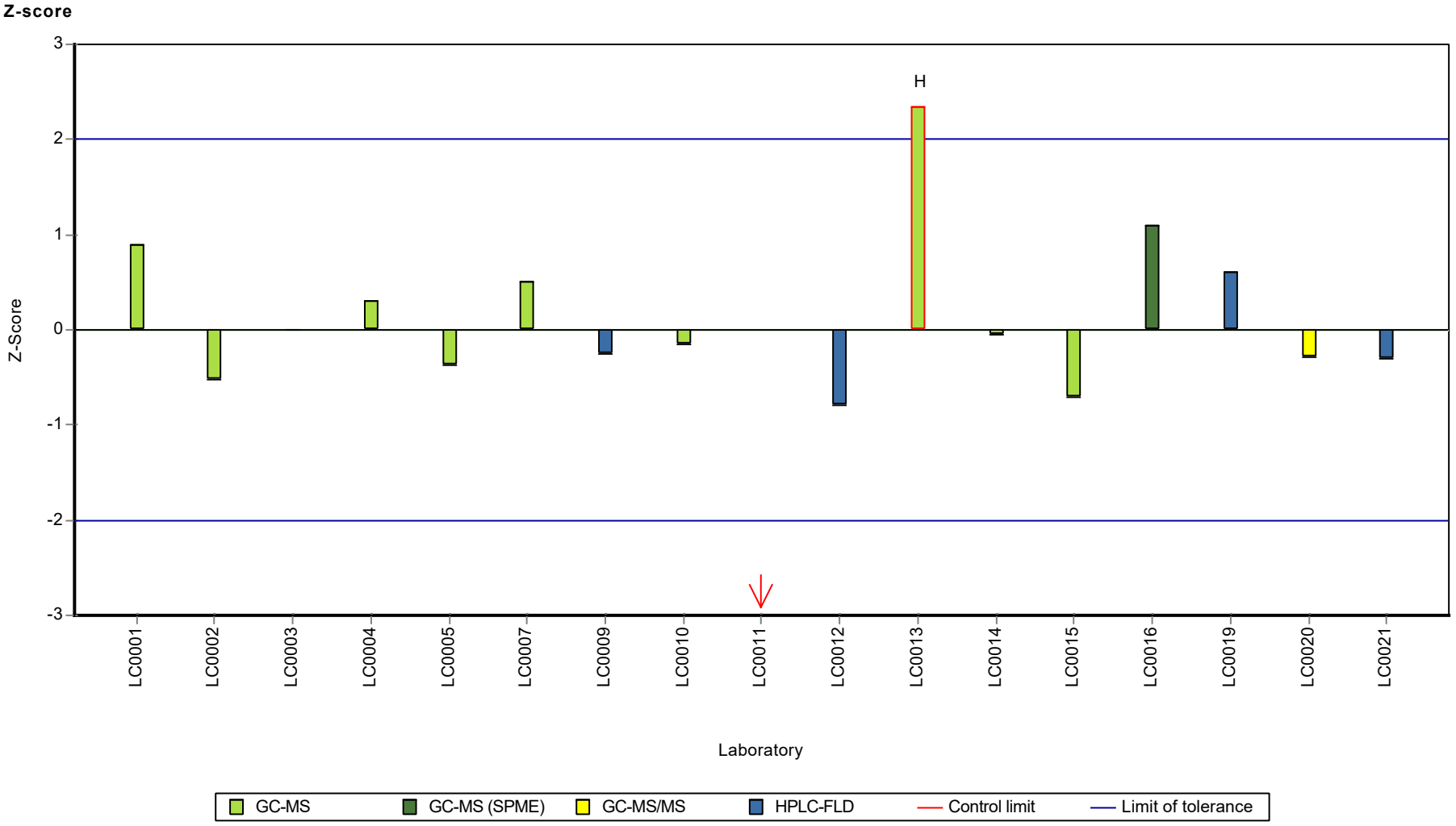
Sample: P23B, Parameter: Fluoranthene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Fluoranthene



Parameter oriented report

P23 A

Fluorene

Unit	ng/l
Assigned value ± U (k=2)	20.9 ± 1.69
Criterion	2.92 (14 %)
Minimum - Maximum	16.3 - 28.5
Control test value ± U (k=2)	23.40 ± 8.19

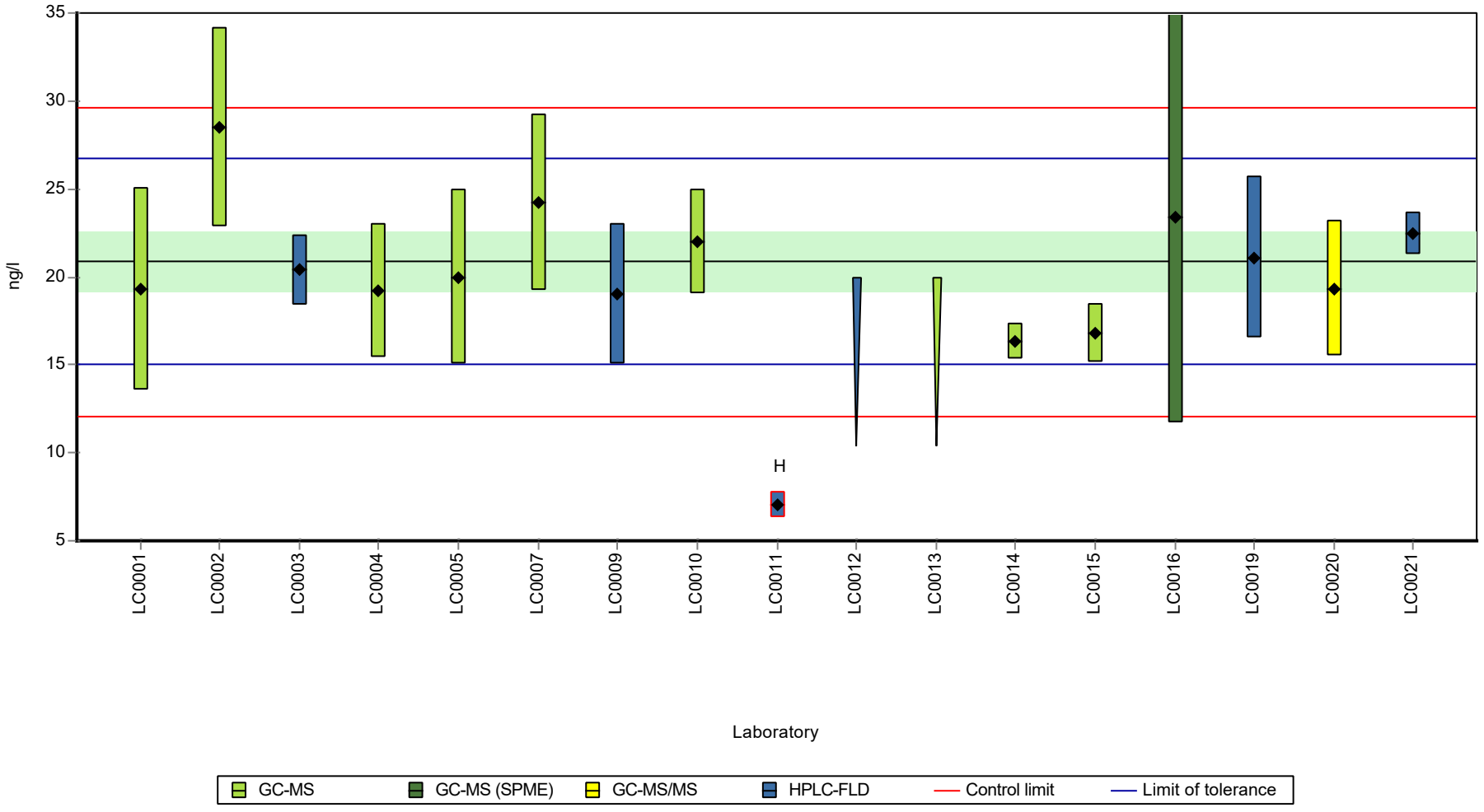
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	19.3	5.8	92.5	-0.53	
LC0002	28.5	5.7	137	2.62	
LC0003	20.4	2	97.8	-0.16	
LC0004	19.2	3.8	92	-0.57	
LC0005	20	5	95.9	-0.29	
LC0006	-	-	-	-	
LC0007	24.22	5	116	1.15	
LC0008	-	-	-	-	
LC0009	19	4	91.1	-0.64	
LC0010	22	3	105	0.39	
LC0011	7.05	0.705	33.8	-4.73	H
LC0012	< 20 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	16.33	1.03	78.3	-1.55	
LC0015	16.76	1.68	80.3	-1.4	
LC0016	23.4	11.7	112	0.87	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	21.1	4.6	101	0.08	
LC0020	19.34	3.87	92.7	-0.52	
LC0021	22.5	1.21	108	0.56	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	19.9 ± 3.63	20.9 ± 2.53	ng/l
Minimum	7.05	16.3	ng/l
Maximum	28.5	28.5	ng/l
Standard deviation	4.69	3.16	ng/l
rel. standard deviation	23.5	15.1	%
n	15	14	-

Graphical presentation of results

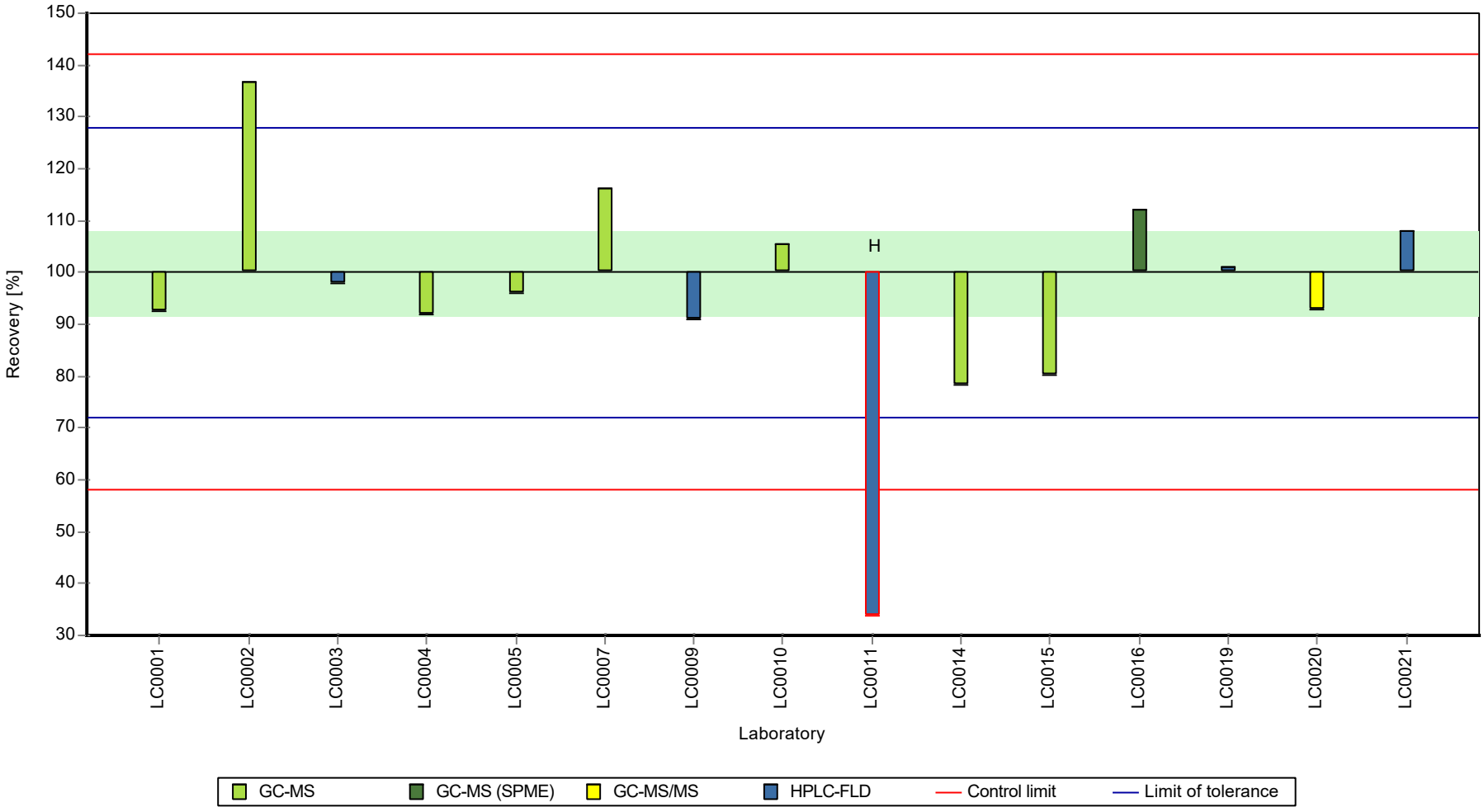
Results

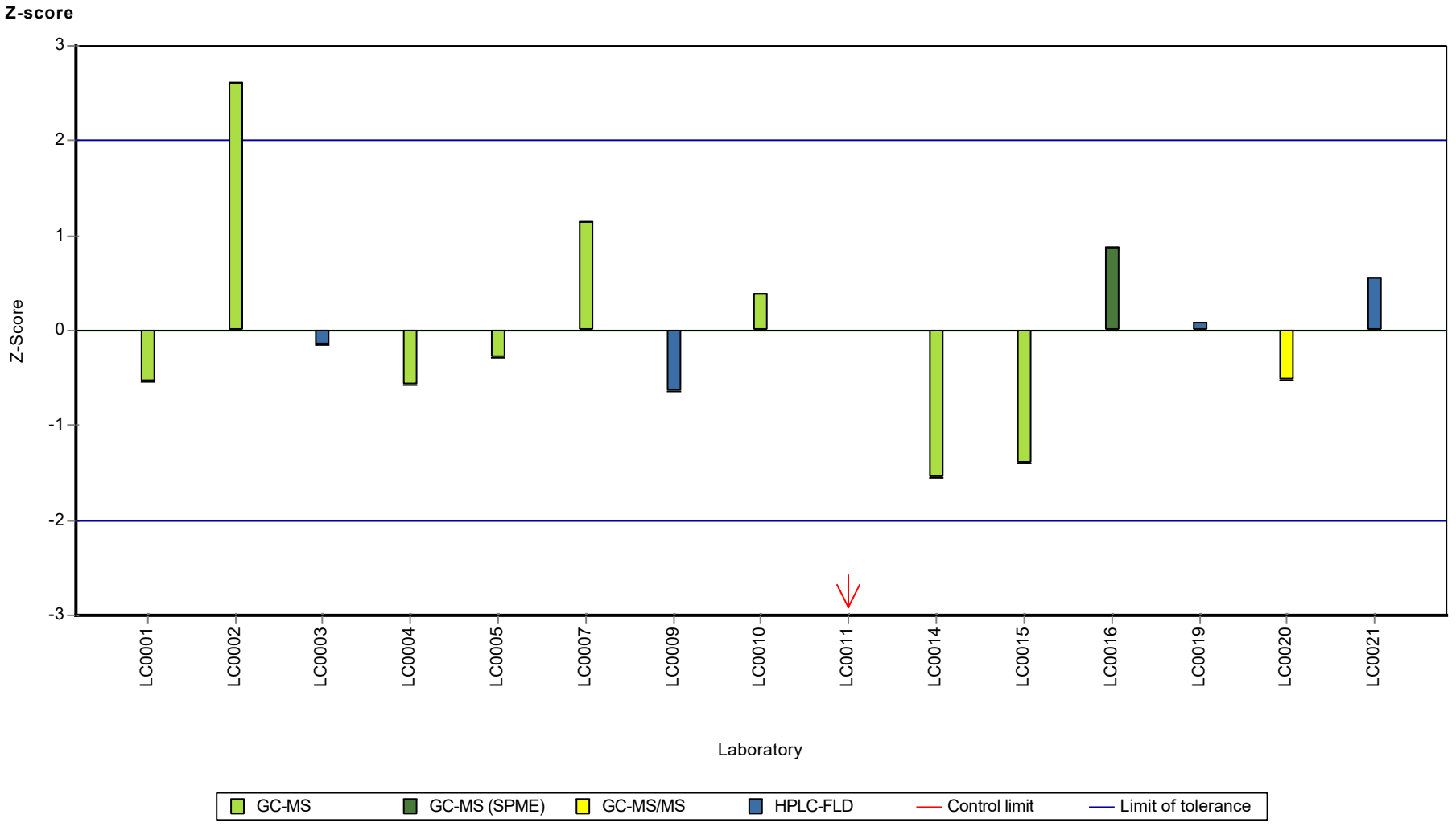


Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Fluorene

Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 B

Fluorene

Unit	ng/l
Assigned value ± U (k=2)	84.9 ± 4.59
Criterion	11.9 (14 %)
Minimum - Maximum	70.1 - 104
Control test value ± U (k=2)	92.7 ± 32.5

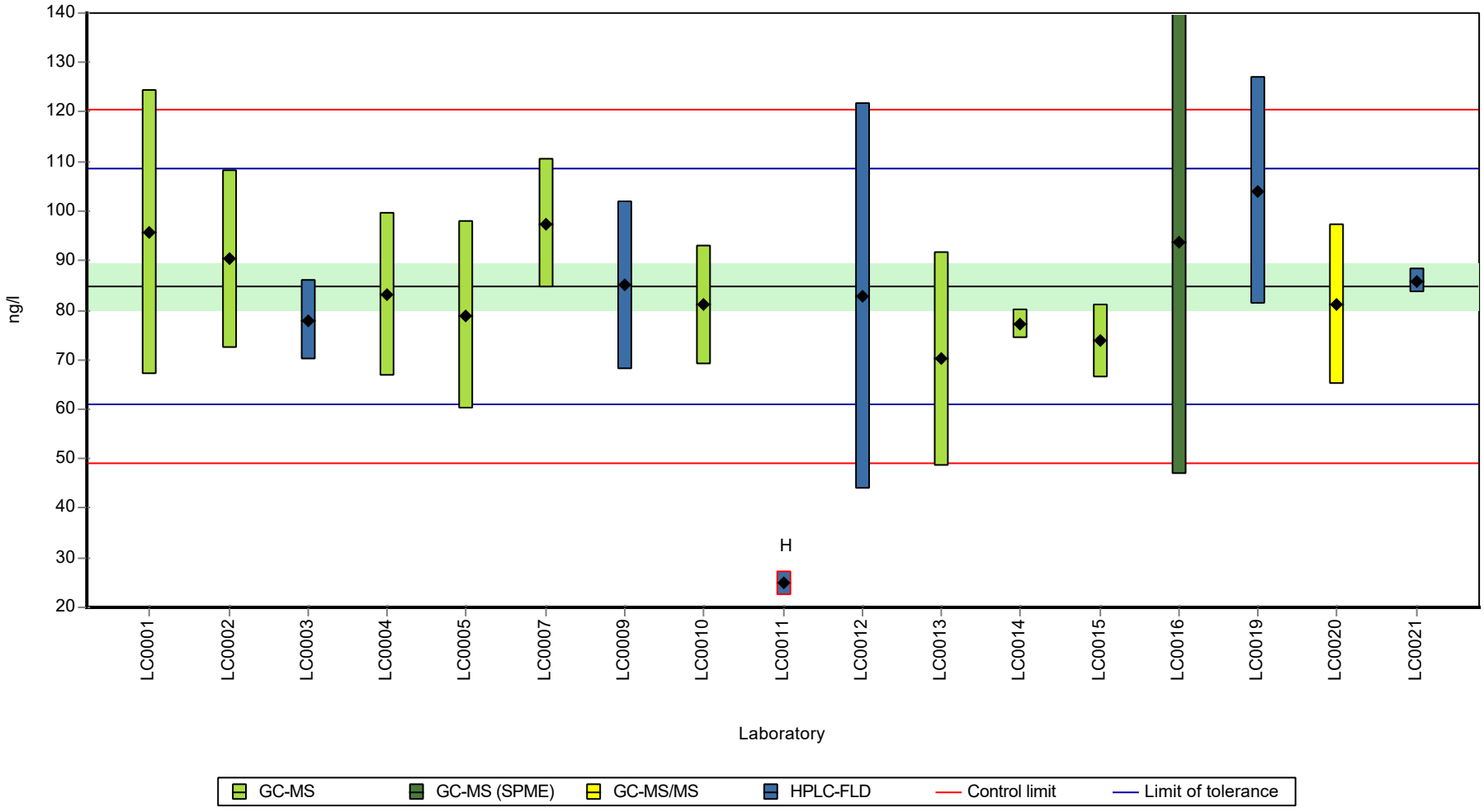
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	95.6	28.7	113	0.9	
LC0002	90.3	18.1	106	0.45	
LC0003	78	8	91.9	-0.58	
LC0004	83.2	16.6	98	-0.14	
LC0005	79	19	93	-0.5	
LC0006	-	-	-	-	
LC0007	97.51	13	115	1.06	
LC0008	-	-	-	-	
LC0009	85	17	100	0.01	
LC0010	81	12	95.4	-0.33	
LC0011	24.9	2.49	29.3	-5.05	H
LC0012	82.8	38.9	97.5	-0.18	
LC0013	70.1	21.7	82.6	-1.25	
LC0014	77.3	2.96	91	-0.64	
LC0015	73.81	7.38	86.9	-0.93	
LC0016	93.7	46.9	110	0.74	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	104	23	122	1.61	
LC0020	81.27	16.25	95.7	-0.31	
LC0021	85.9	2.41	101	0.08	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	81.4 ± 12.4	84.9 ± 6.88	ng/l
Minimum	24.9	70.1	ng/l
Maximum	104	104	ng/l
Standard deviation	17.1	9.18	ng/l
rel. standard deviation	21	10.8	%
n	17	16	-

Graphical presentation of results

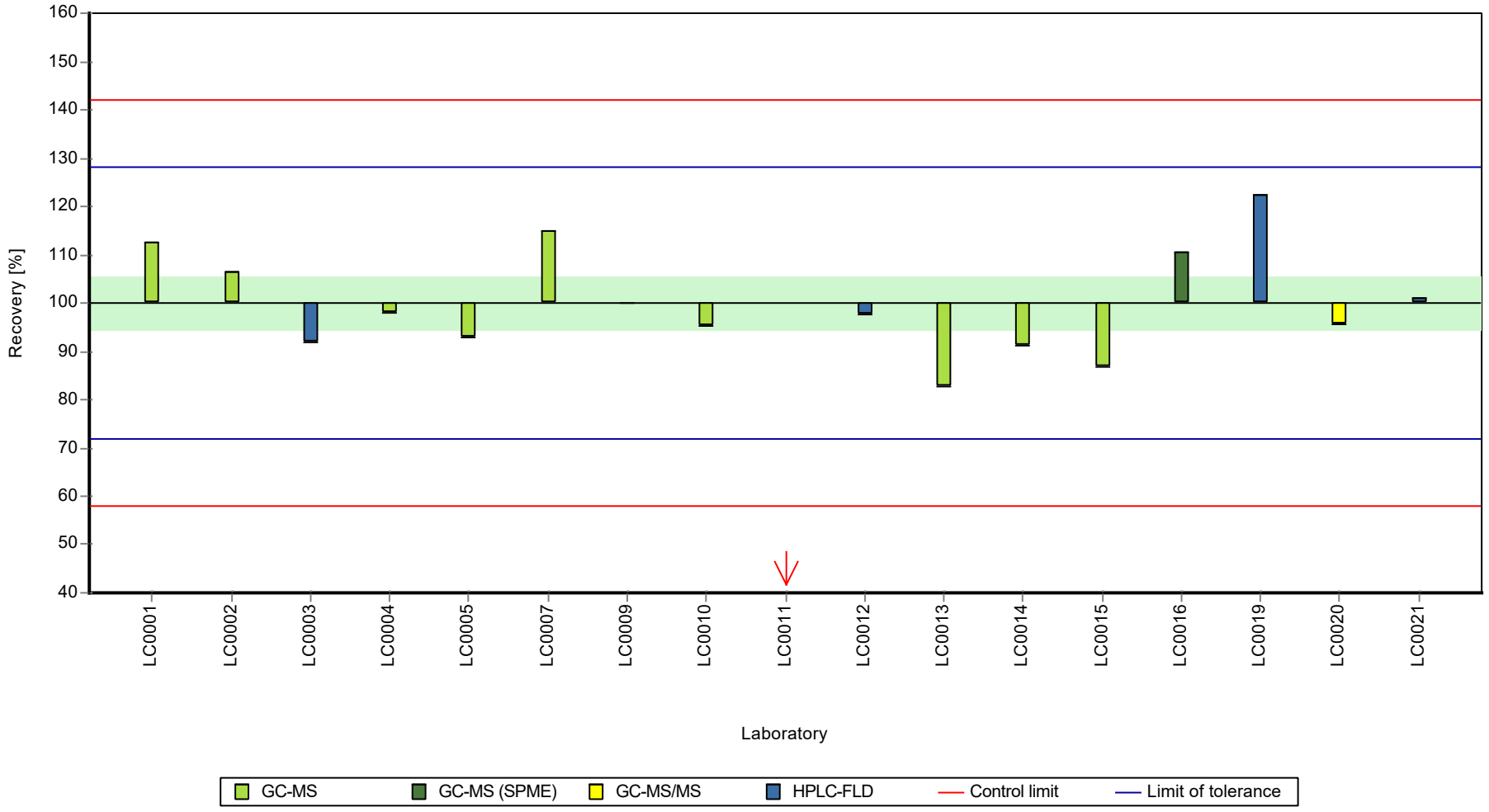
Results

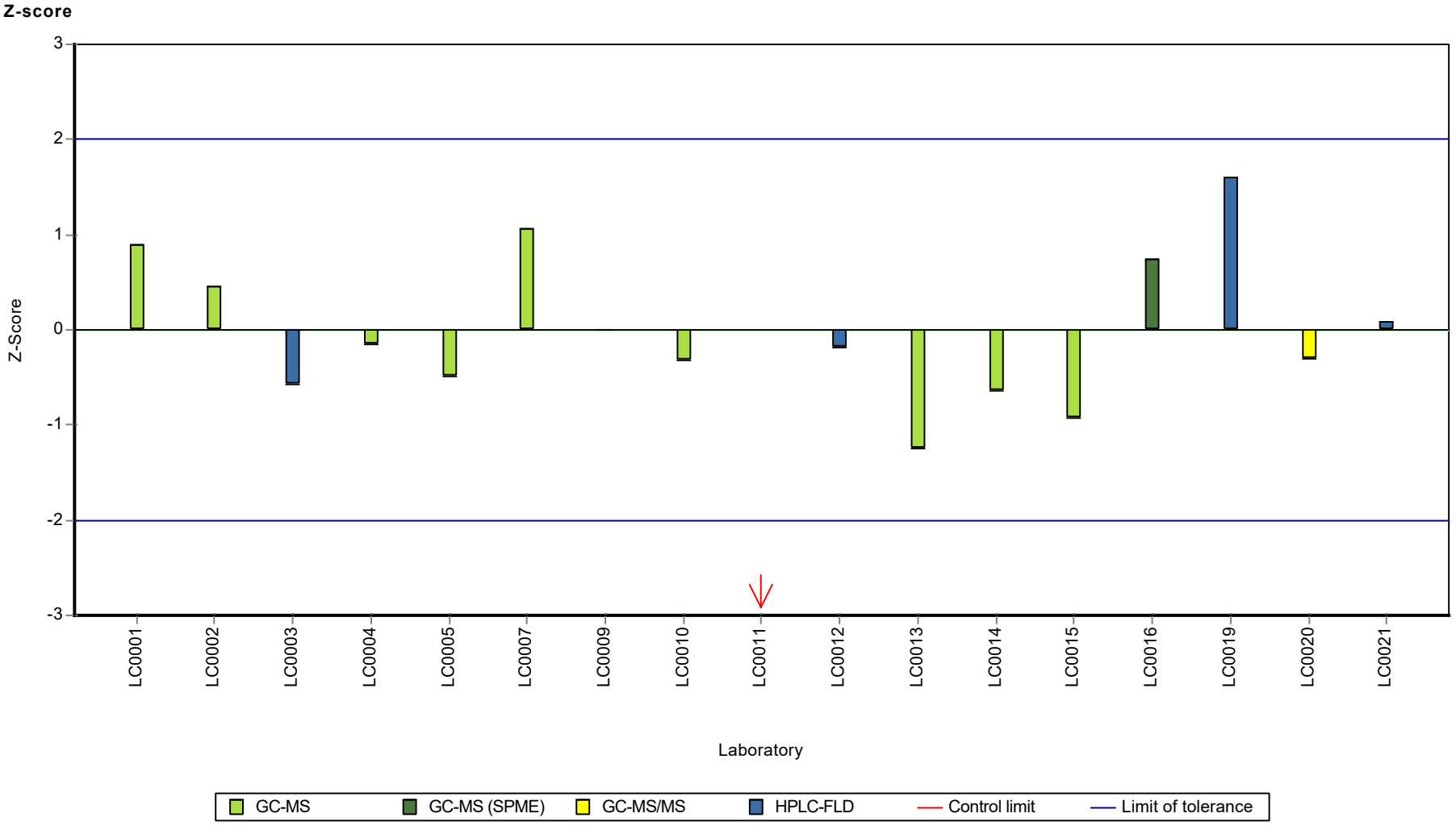


Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Fluorene

Recovery rate




Z-score
3
2
1
0
-1
-2
-3
Z-Score
LC0001
LC0002
LC0003
LC0004
LC0005
LC0007
LC0009
LC0010
LC0011
LC0012
LC0013
LC0014
LC0015
LC0016
LC0019
LC0020
LC0021
Laboratory
GC-MS
GC-MS (SPME)
GC-MS/MS
HPLC-FLD
Control limit
Limit of tolerance

Parameter oriented report

P23 A

Indeno[1,2,3-cd]pyrene

Unit	ng/l
Assigned value ± U (k=2)	15.1 ± 1.86
Criterion	3.17 (21 %)
Minimum - Maximum	10.2 - 22
Control test value ± U (k=2)	17.20 ± 6.01

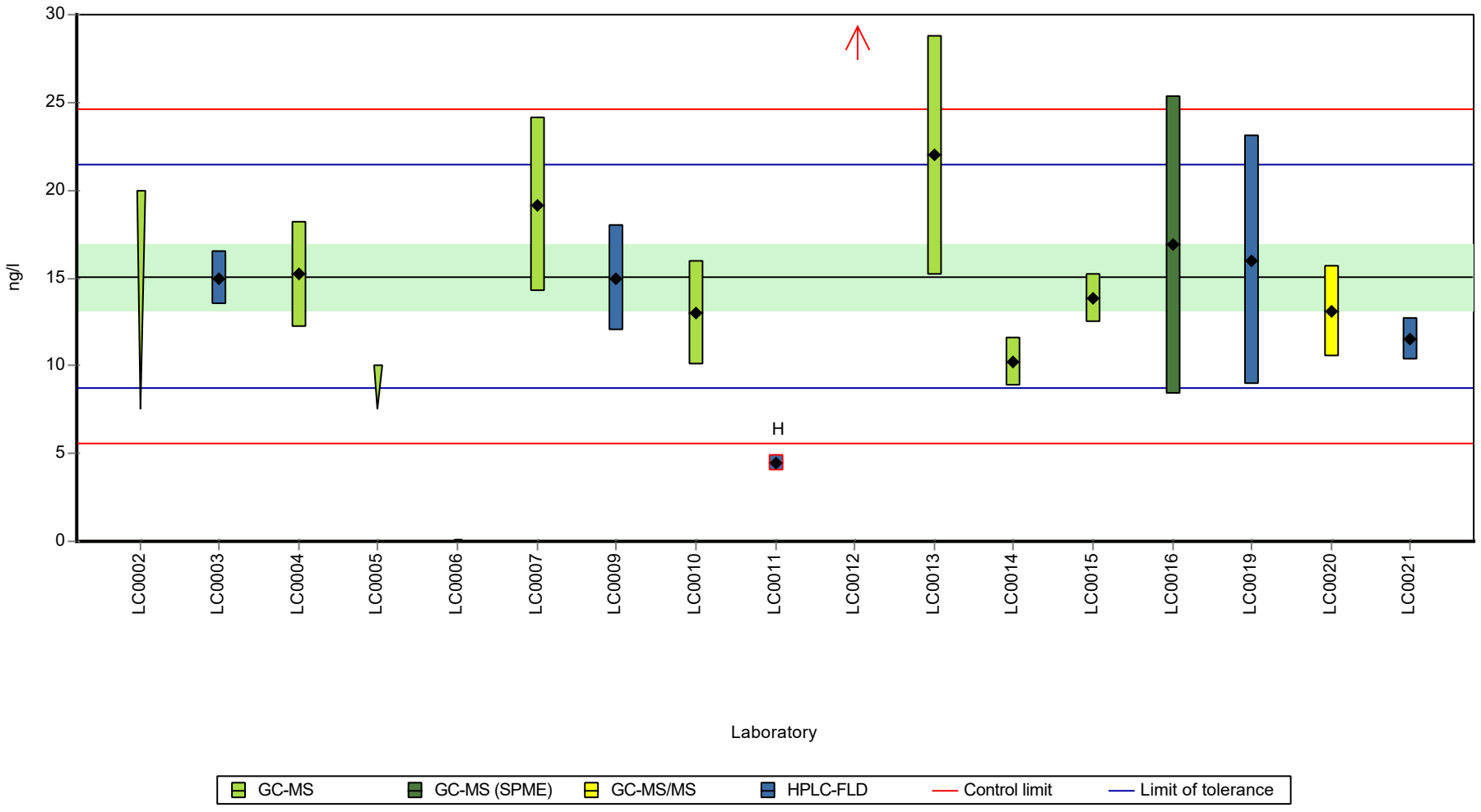
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	15	1.5	99.4	-0.03	
LC0004	15.2	3	101	0.04	
LC0005	< 10 (LOQ)	-	-	-	
LC0006	< 0.05 (LOQ)	-	-	-	FN
LC0007	19.17	5	127	1.29	
LC0008	-	-	-	-	
LC0009	15	3	99.4	-0.03	
LC0010	13	3	86.2	-0.66	
LC0011	4.46	0.446	29.6	-3.35	H
LC0012	59.6	35.2	395	14.1	H
LC0013	22	6.82	146	2.18	
LC0014	10.23	1.39	67.8	-1.53	
LC0015	13.88	1.39	92	-0.38	
LC0016	16.9	8.5	112	0.57	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	16	7.1	106	0.29	
LC0020	13.12	2.62	87	-0.62	
LC0021	11.5	1.23	76.2	-1.13	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	17.5 ± 10.3	15.1 ± 2.8	ng/l
Minimum	4.46	10.2	ng/l
Maximum	59.6	22	ng/l
Standard deviation	12.8	3.23	ng/l
rel. standard deviation	73.1	21.4	%
n	14	12	-

Graphical presentation of results

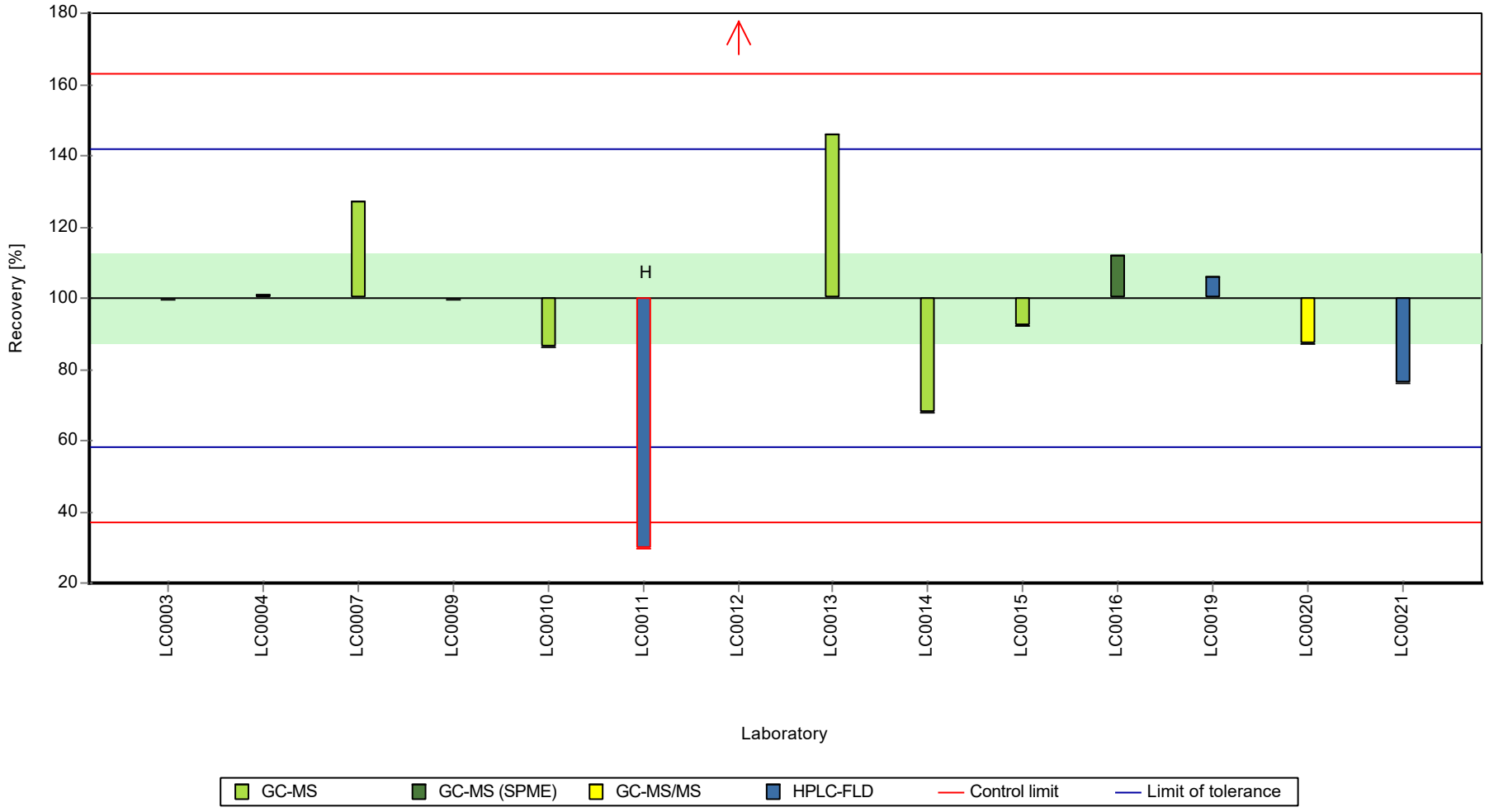
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

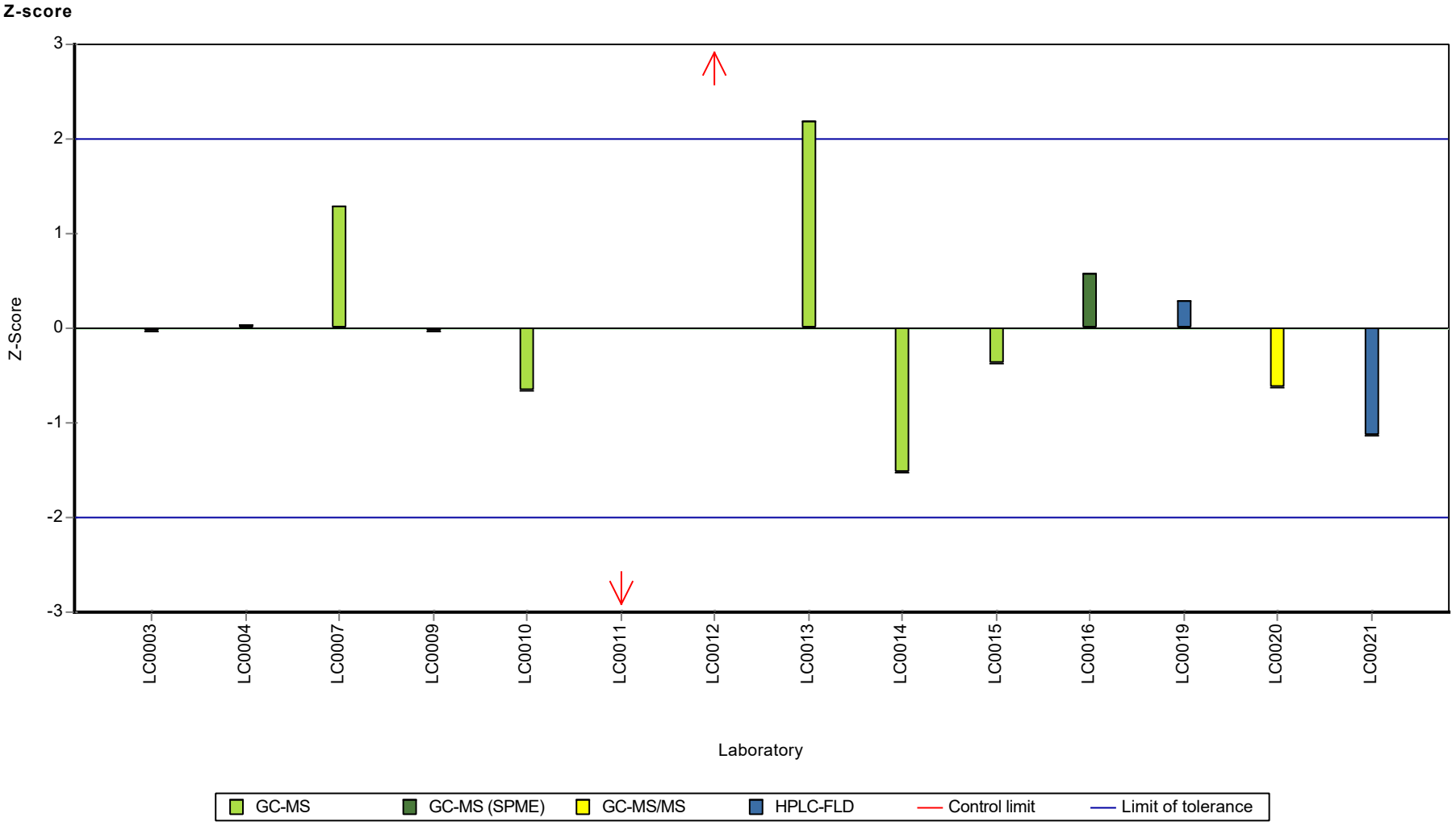
Sample: P23A, Parameter: Indeno[1,2,3-cd]pyrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Indeno[1,2,3-cd]pyrene



Parameter oriented report

P23 B

Indeno[1,2,3-cd]pyrene

Unit	ng/l
Assigned value ± U (k=2)	76.4 ± 5.56
Criterion	10.7 (14 %)
Minimum - Maximum	62 - 95
Control test value ± U (k=2)	102.0 ± 35.6

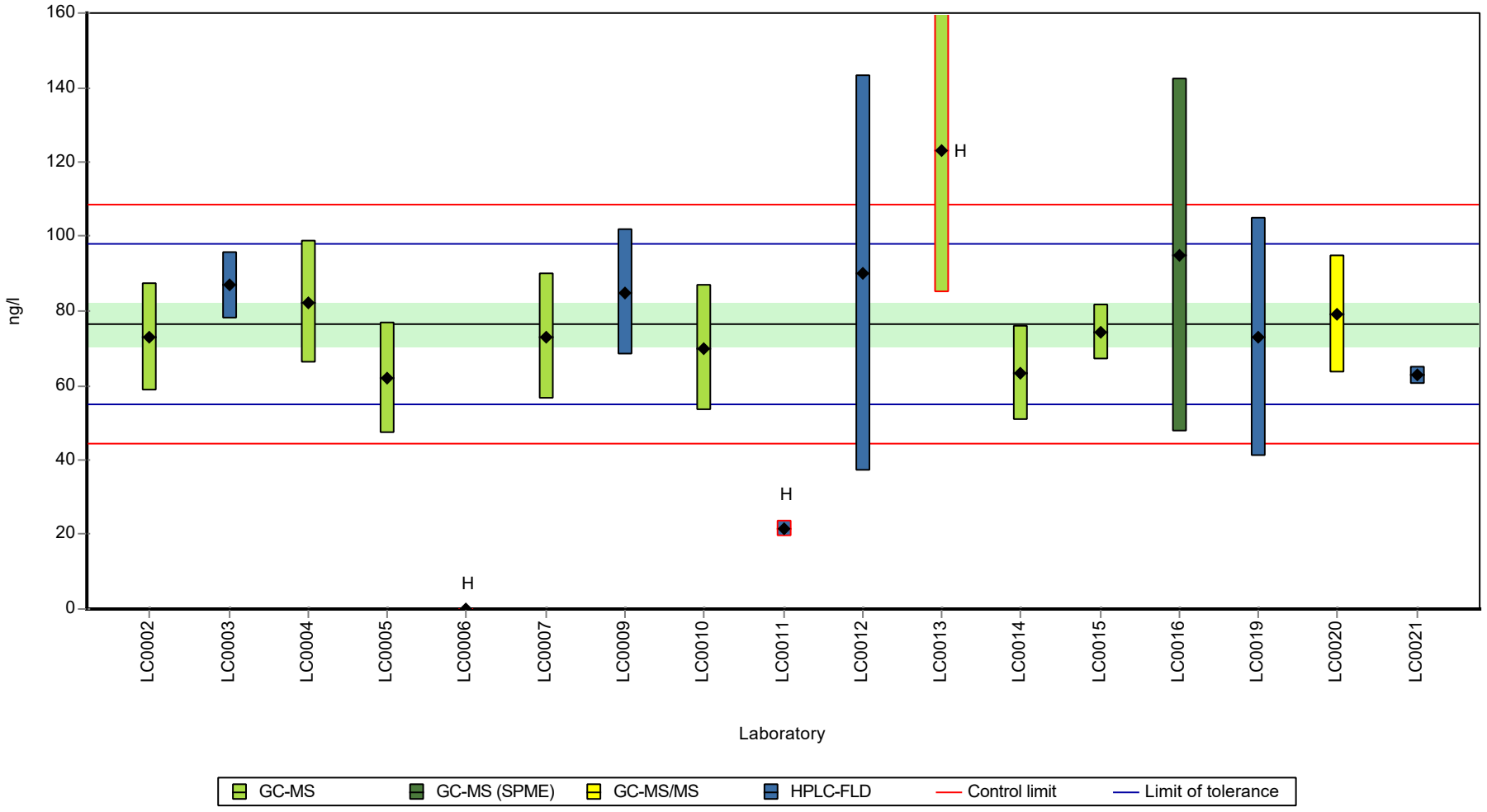
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	73	14.6	95.5	-0.32	
LC0003	87	9	114	0.99	
LC0004	82.4	16.5	108	0.56	
LC0005	62	15	81.1	-1.35	
LC0006	0.066	0.02	0.1	-7.14	H
LC0007	73.1	17	95.6	-0.31	
LC0008	-	-	-	-	
LC0009	85	17	111	0.8	
LC0010	70	17	91.6	-0.6	
LC0011	21.6	2.16	28.3	-5.12	H
LC0012	90.2	53.2	118	1.29	
LC0013	123	38	161	4.35	H
LC0014	63.27	12.64	82.8	-1.23	
LC0015	74.47	7.45	97.4	-0.18	
LC0016	95	47.5	124	1.73	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	73	32	95.5	-0.32	
LC0020	78.97	15.8	103	0.24	
LC0021	62.8	2.4	82.2	-1.27	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	71.5 ± 19.9	76.4 ± 8.35	ng/l
Minimum	0.066	62	ng/l
Maximum	123	95	ng/l
Standard deviation	27.4	10.4	ng/l
rel. standard deviation	38.3	13.6	%
n	17	14	-

Graphical presentation of results

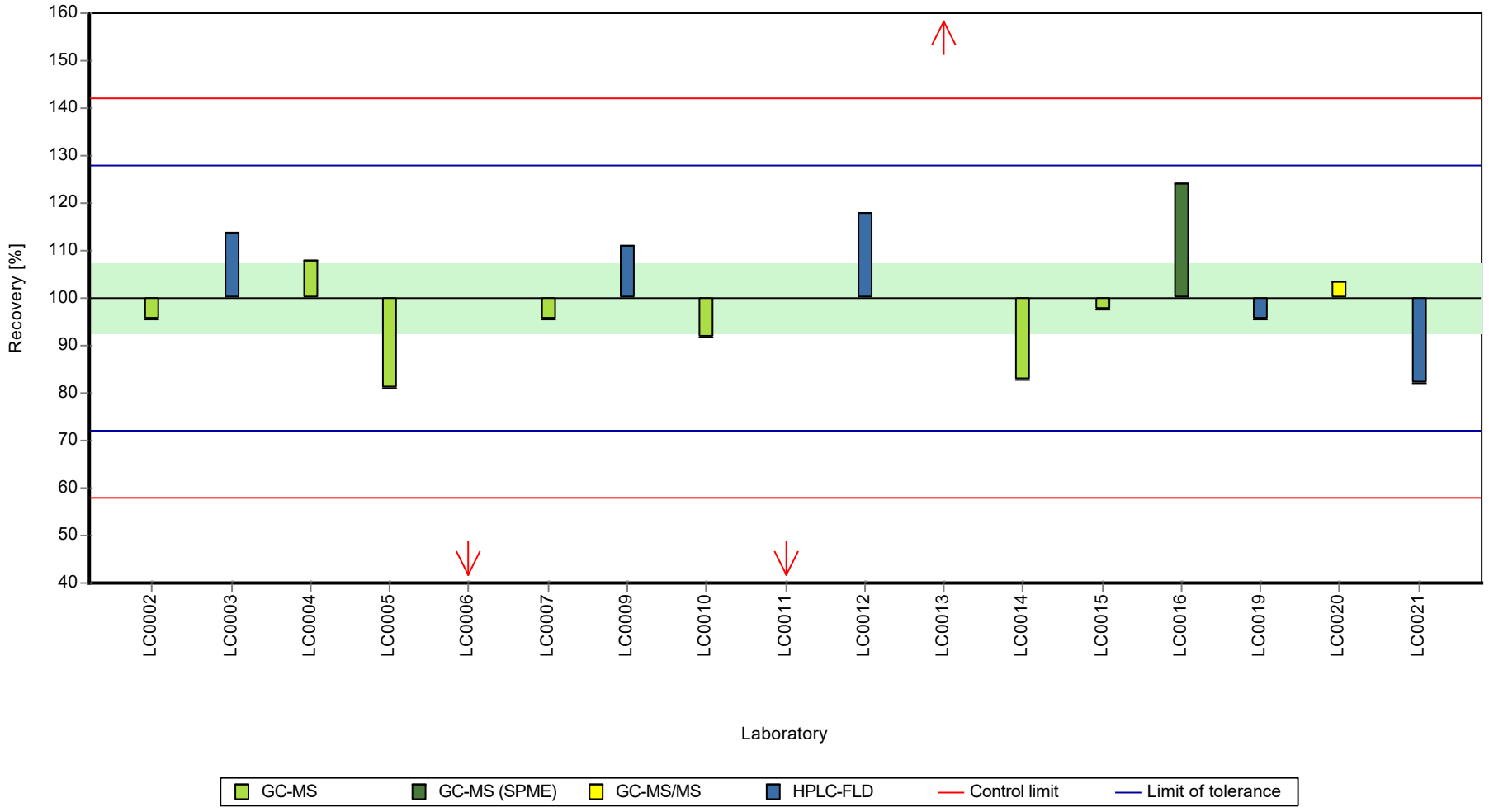
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

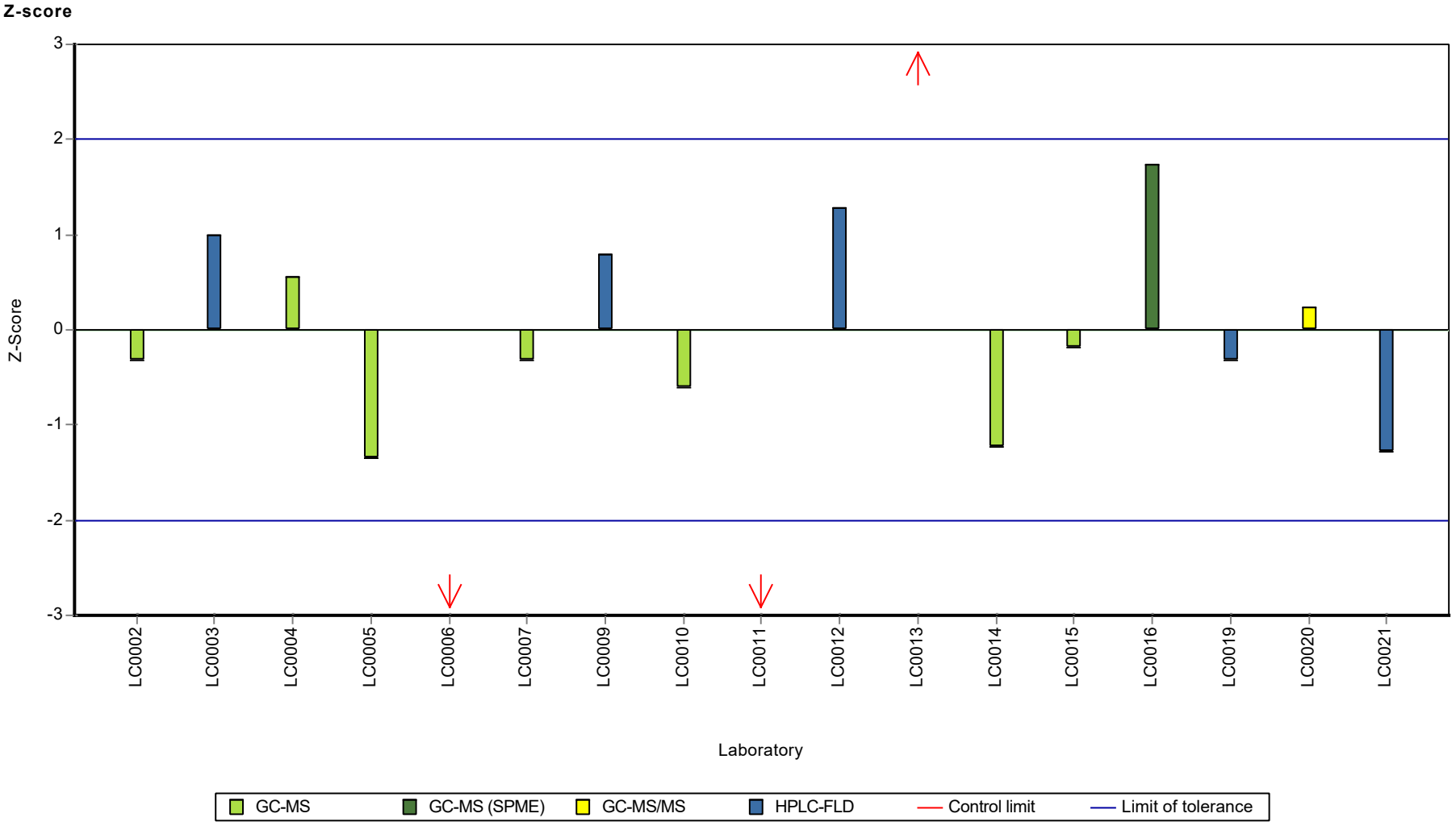
Sample: P23B, Parameter: Indeno[1,2,3-cd]pyrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Indeno[1,2,3-cd]pyrene



Parameter oriented report

P23 A

Naphthalene

Unit	ng/l
Assigned value ± U (k=2)	22.7 ± 3.5
Criterion	4.77 (21 %)
Minimum - Maximum	12.2 - 36.1
Control test value ± U (k=2)	25.90 ± 7.78

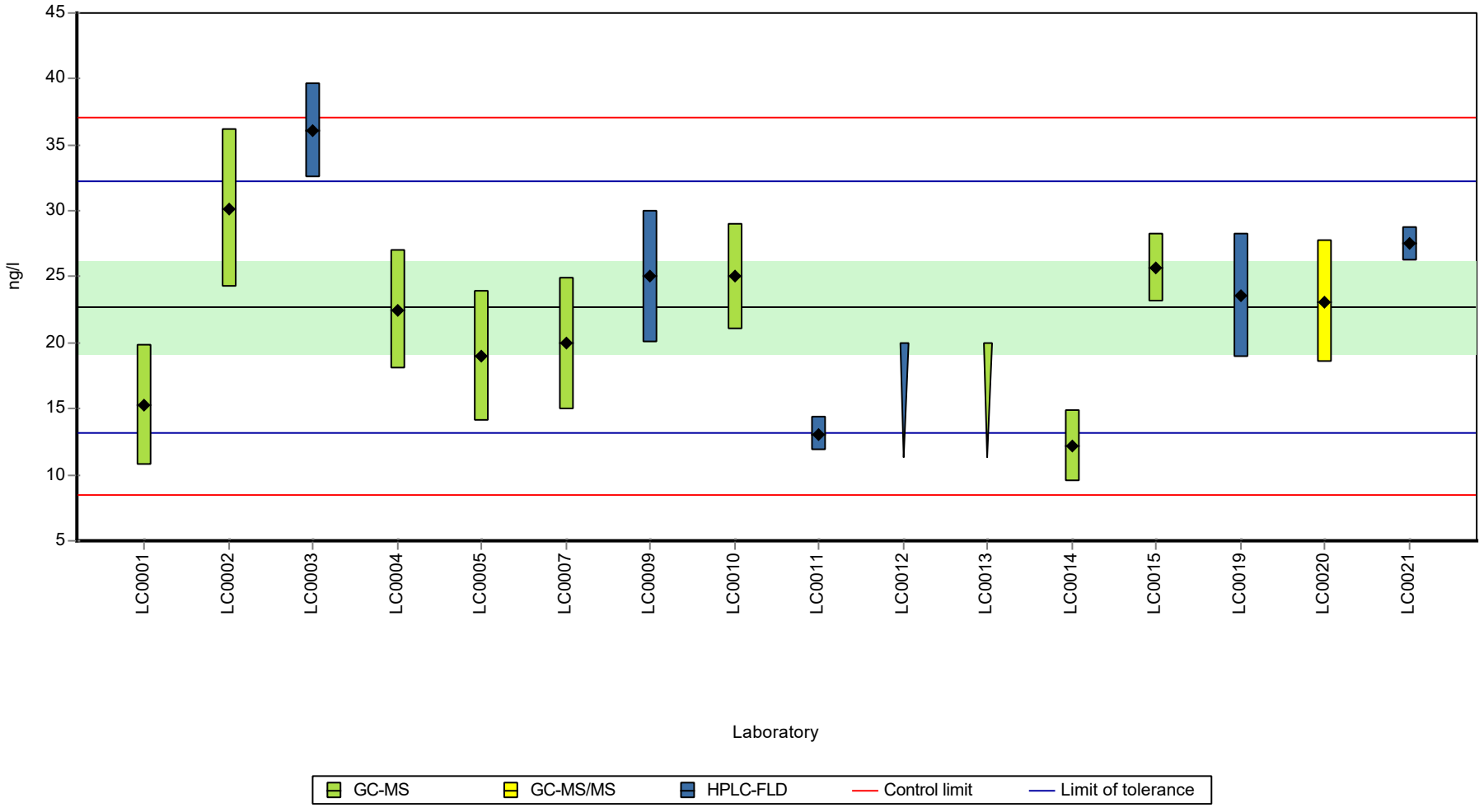
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	15.3	4.6	67.3	-1.56	
LC0002	30.2	6	133	1.56	
LC0003	36.1	3.6	159	2.8	
LC0004	22.5	4.5	99	-0.05	
LC0005	19	5	83.6	-0.78	
LC0006	-	-	-	-	
LC0007	19.94	5	87.7	-0.58	
LC0008	-	-	-	-	
LC0009	25	5	110	0.47	
LC0010	25	4	110	0.47	
LC0011	13.1	1.31	57.6	-2.02	
LC0012	< 20 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	12.2	2.71	53.7	-2.21	
LC0015	25.7	2.57	113	0.62	
LC0016	-	-	-	-	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	23.6	4.7	104	0.18	
LC0020	23.12	4.62	102	0.08	
LC0021	27.5	1.28	121	1	

Characteristics of parameter

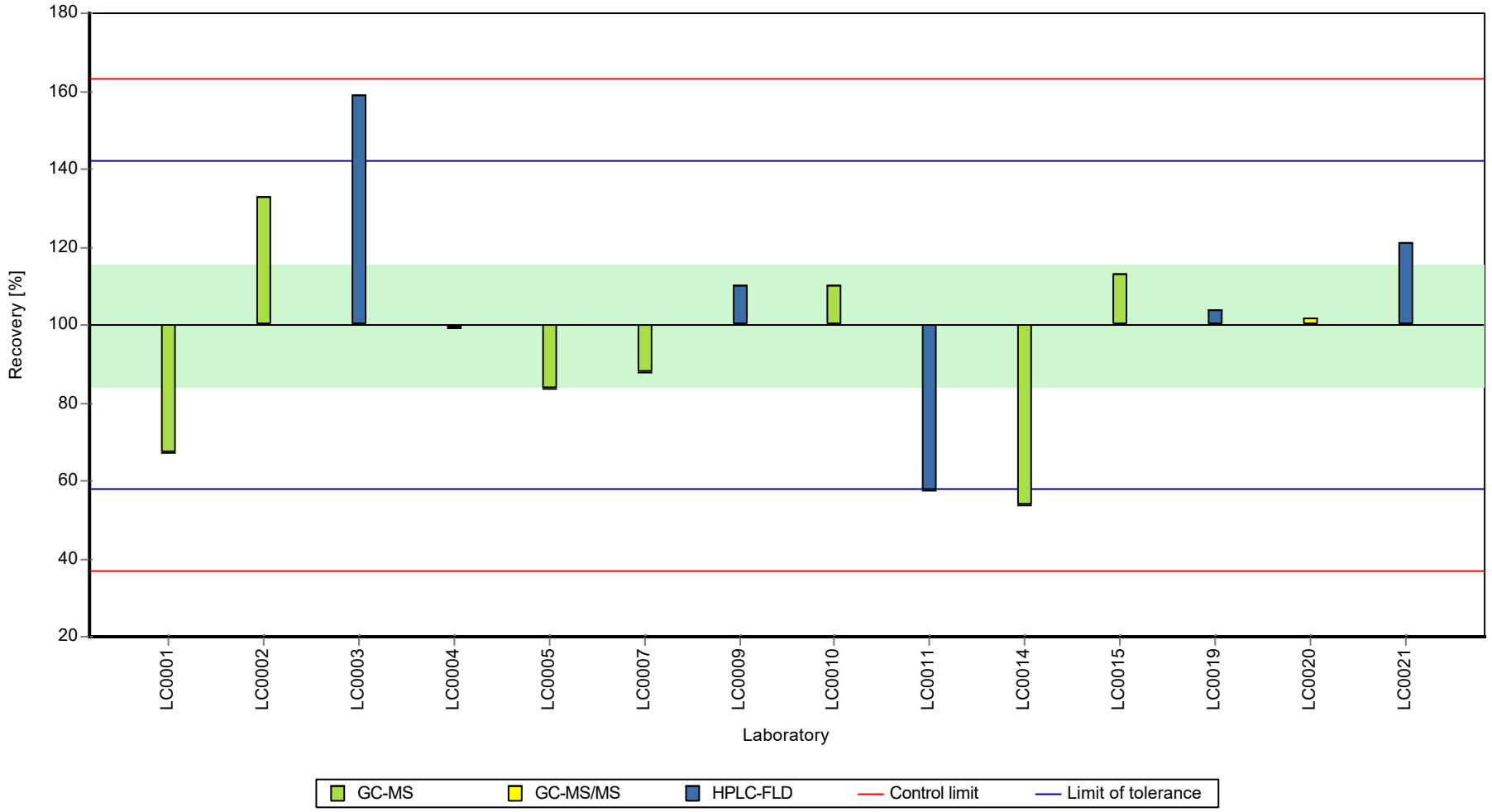
	all results	without outliers	Unit
Mean ± CI (99%)	22.7 ± 5.25	22.7 ± 5.25	ng/l
Minimum	12.2	12.2	ng/l
Maximum	36.1	36.1	ng/l
Standard deviation	6.55	6.55	ng/l
rel. standard deviation	28.8	28.8	%
n	14	14	-

Graphical presentation of results

Results

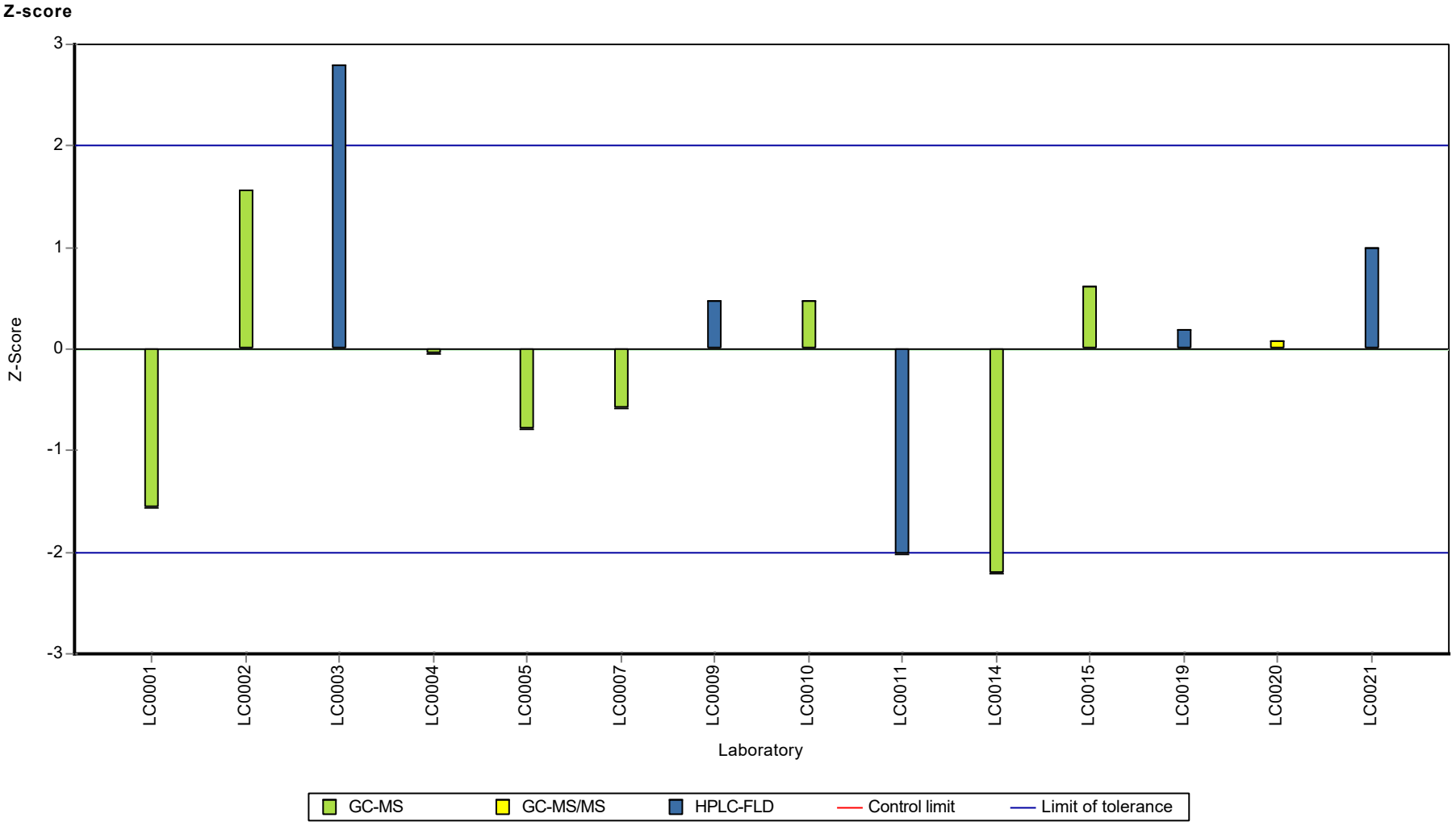


Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Naphthalene



Parameter oriented report

P23 B

Naphthalene

Unit	ng/l
Assigned value ± U (k=2)	137 ± 8.6
Criterion	28.9 (21 %)
Minimum - Maximum	106 - 173
Control test value ± U (k=2)	155.0 ± 46.6

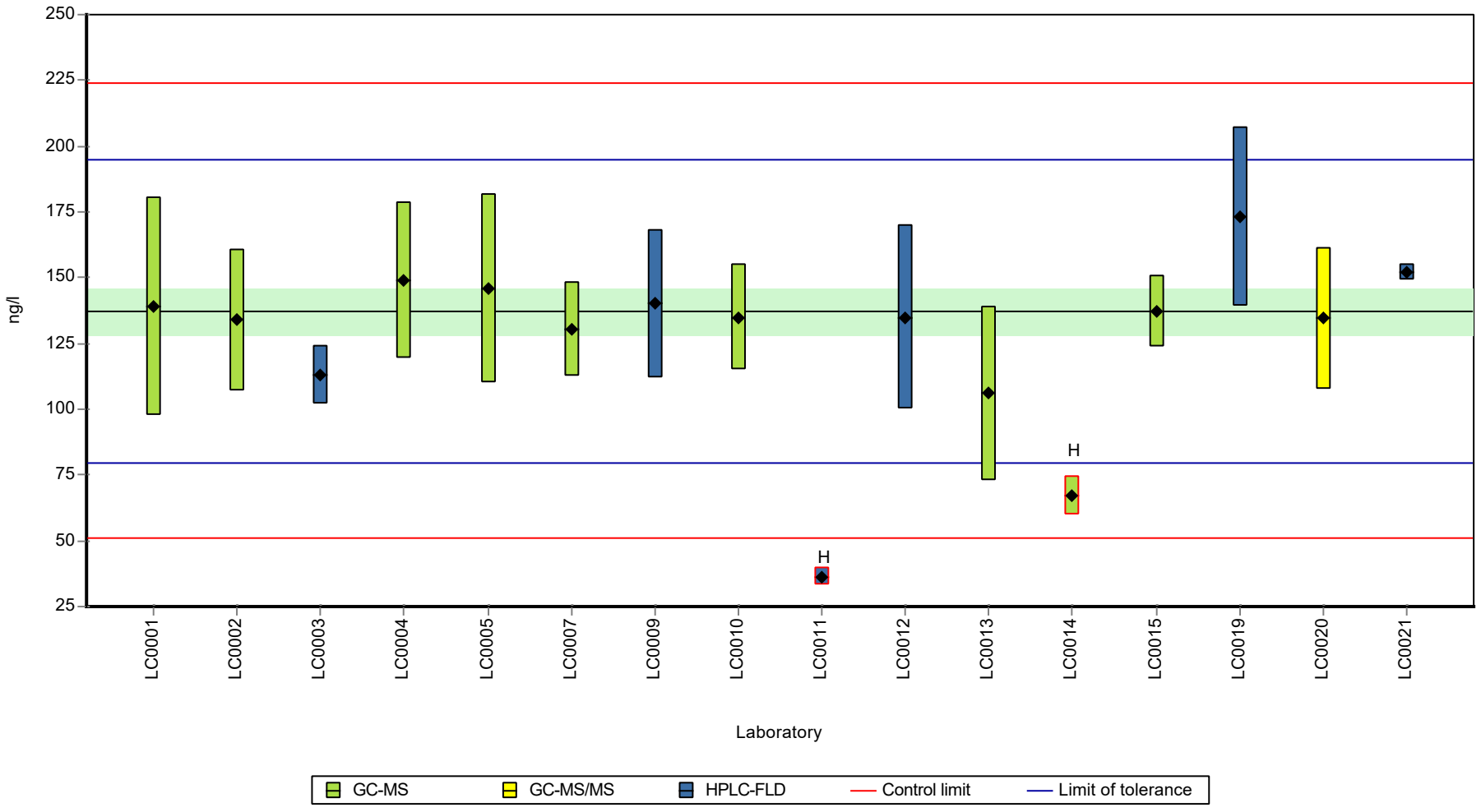
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	139	41.7	101	0.06	
LC0002	133.9	26.8	97.5	-0.12	
LC0003	113	11	82.2	-0.84	
LC0004	149	30	108	0.4	
LC0005	146	36	106	0.3	
LC0006	-	-	-	-	
LC0007	130.16	18	94.7	-0.25	
LC0008	-	-	-	-	
LC0009	140	28	102	0.09	
LC0010	135	20	98.3	-0.08	
LC0011	36.4	3.64	26.5	-3.5	H
LC0012	135	35	98.3	-0.08	
LC0013	106	33	77.2	-1.09	
LC0014	67.1	7.38	48.8	-2.44	H
LC0015	137	13.7	99.7	-0.01	
LC0016	-	-	-	-	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	173	34	126	1.23	
LC0020	134.41	26.88	97.8	-0.1	
LC0021	152	2.9	111	0.51	

Characteristics of parameter

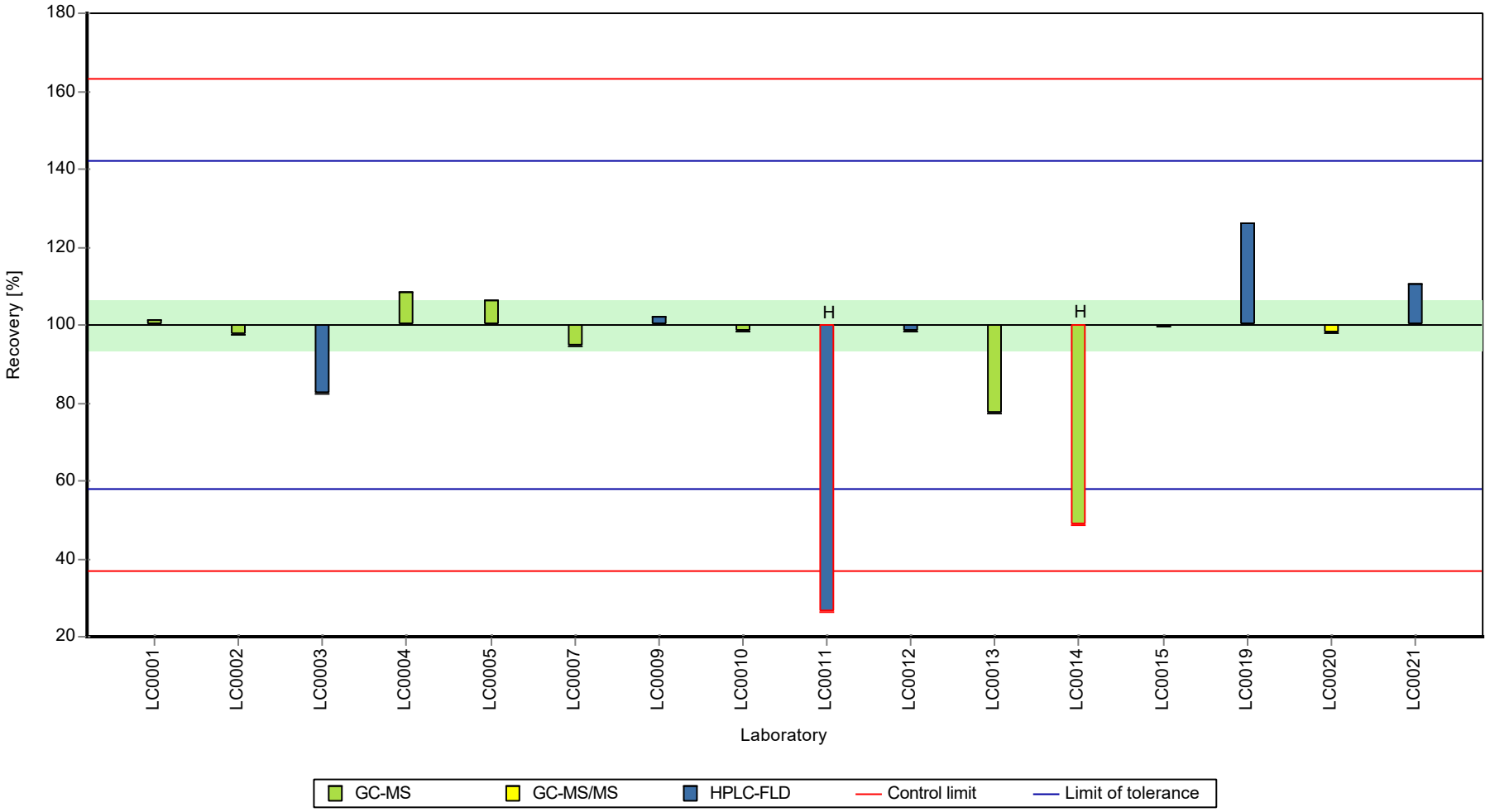
	all results	without outliers	Unit
Mean ± CI (99%)	127 ± 25	137 ± 12.9	ng/l
Minimum	36.4	106	ng/l
Maximum	173	173	ng/l
Standard deviation	33.3	16.1	ng/l
rel. standard deviation	26.3	11.7	%
n	16	14	-

Graphical presentation of results

Results

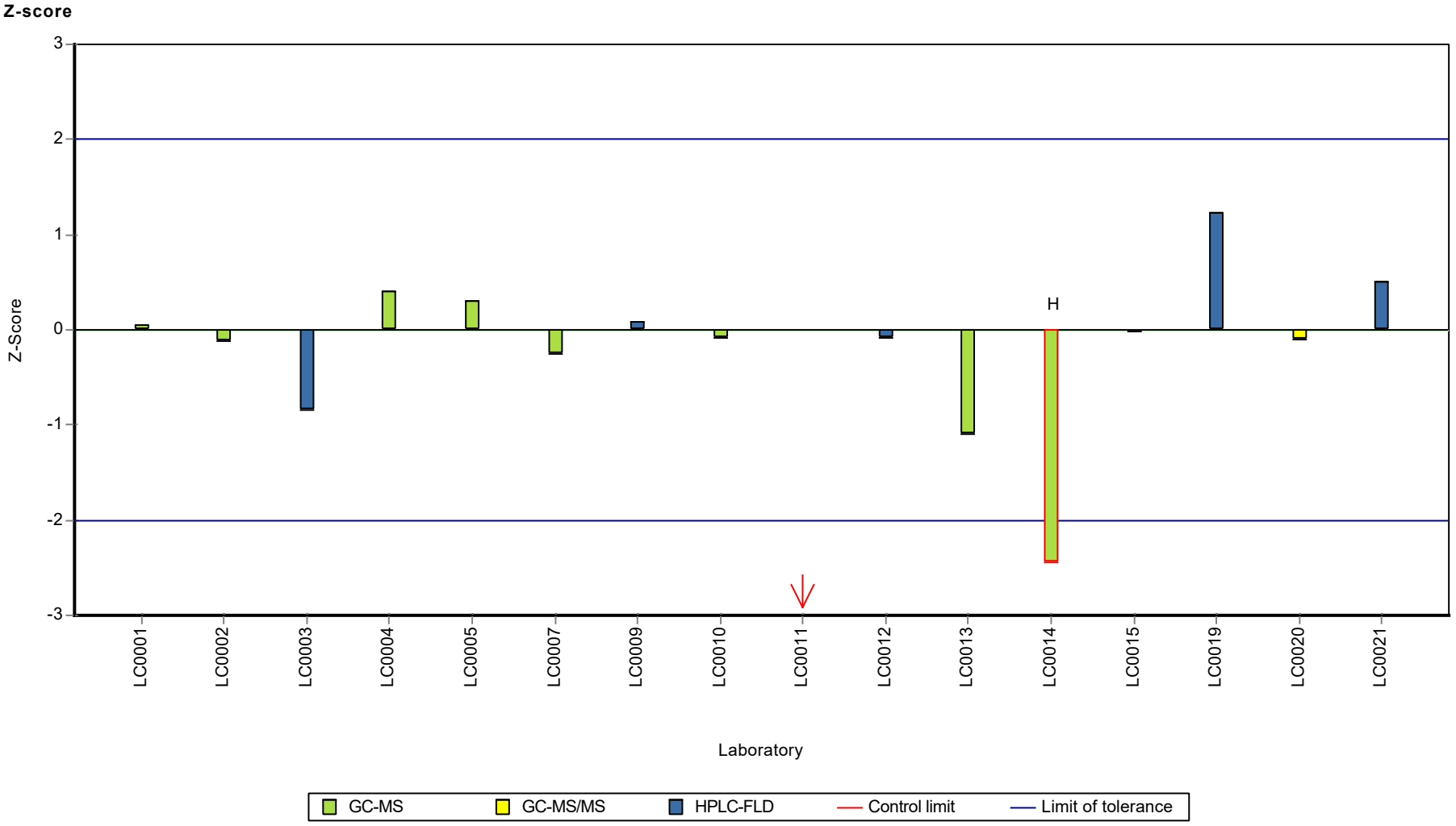


Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Naphthalene



Parameter oriented report

P23 A

Phenanthrene

Unit	ng/l
Assigned value ± U (k=2)	14.8 ± 0.953
Criterion	2.21 (15 %)
Minimum - Maximum	11.5 - 18
Control test value ± U (k=2)	19.00 ± 4.74

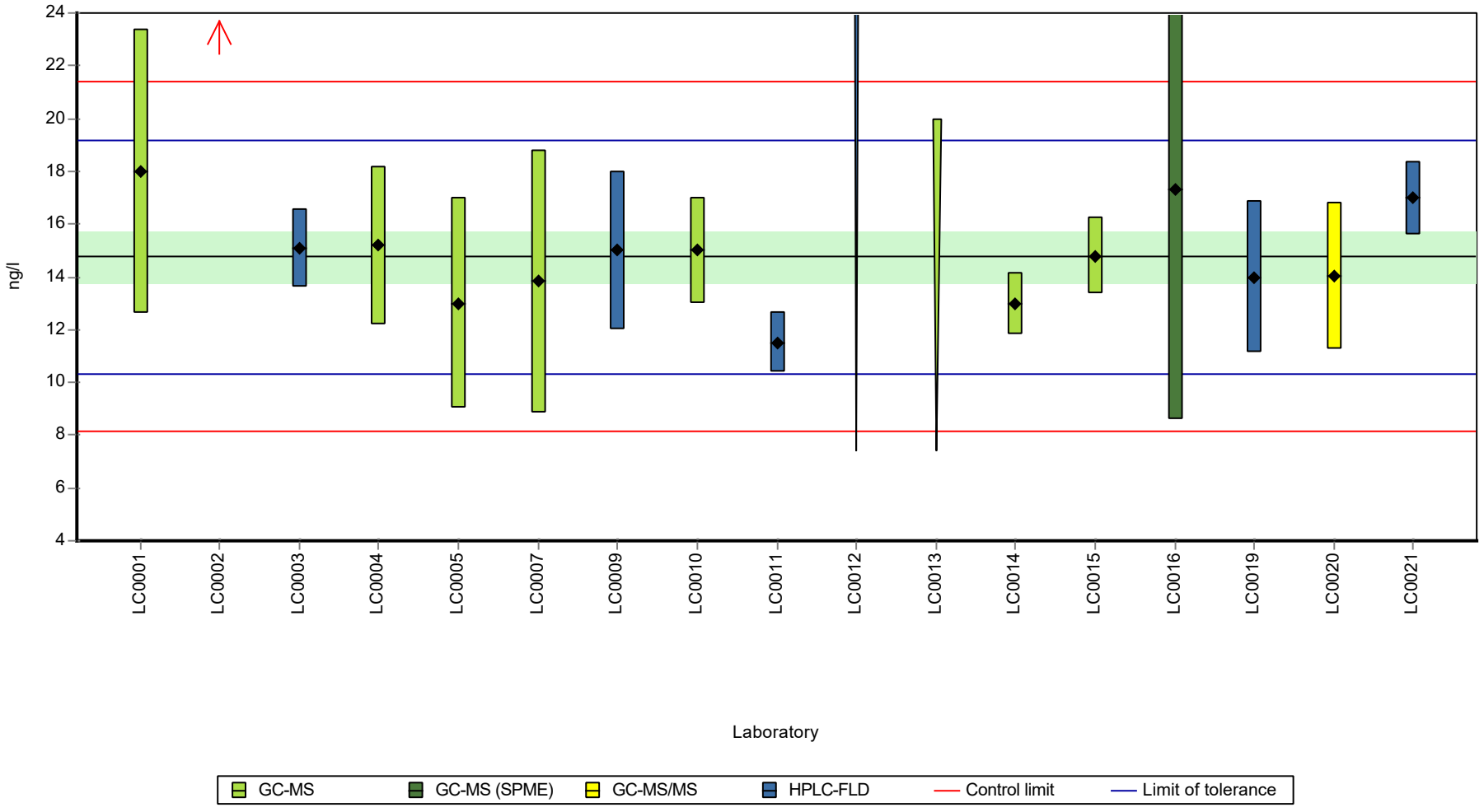
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	18	5.4	122	1.46	
LC0002	30.4	6.1	206	7.06	H
LC0003	15.1	1.5	102	0.15	
LC0004	15.2	3	103	0.2	
LC0005	13	4	88	-0.8	
LC0006	-	-	-	-	
LC0007	13.82	5	93.6	-0.43	
LC0008	-	-	-	-	
LC0009	15	3	102	0.11	
LC0010	15	2	102	0.11	
LC0011	11.5	1.15	77.9	-1.47	
LC0012	< 50 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	12.98	1.2	87.9	-0.81	
LC0015	14.8	1.48	100	0.02	
LC0016	17.3	8.7	117	1.14	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	14	2.9	94.8	-0.35	
LC0020	14.02	2.8	94.9	-0.34	
LC0021	17	1.39	115	1.01	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	15.8 ± 3.4	14.8 ± 1.43	ng/l
Minimum	11.5	11.5	ng/l
Maximum	30.4	18	ng/l
Standard deviation	4.39	1.78	ng/l
rel. standard deviation	27.8	12.1	%
n	15	14	-

Graphical presentation of results

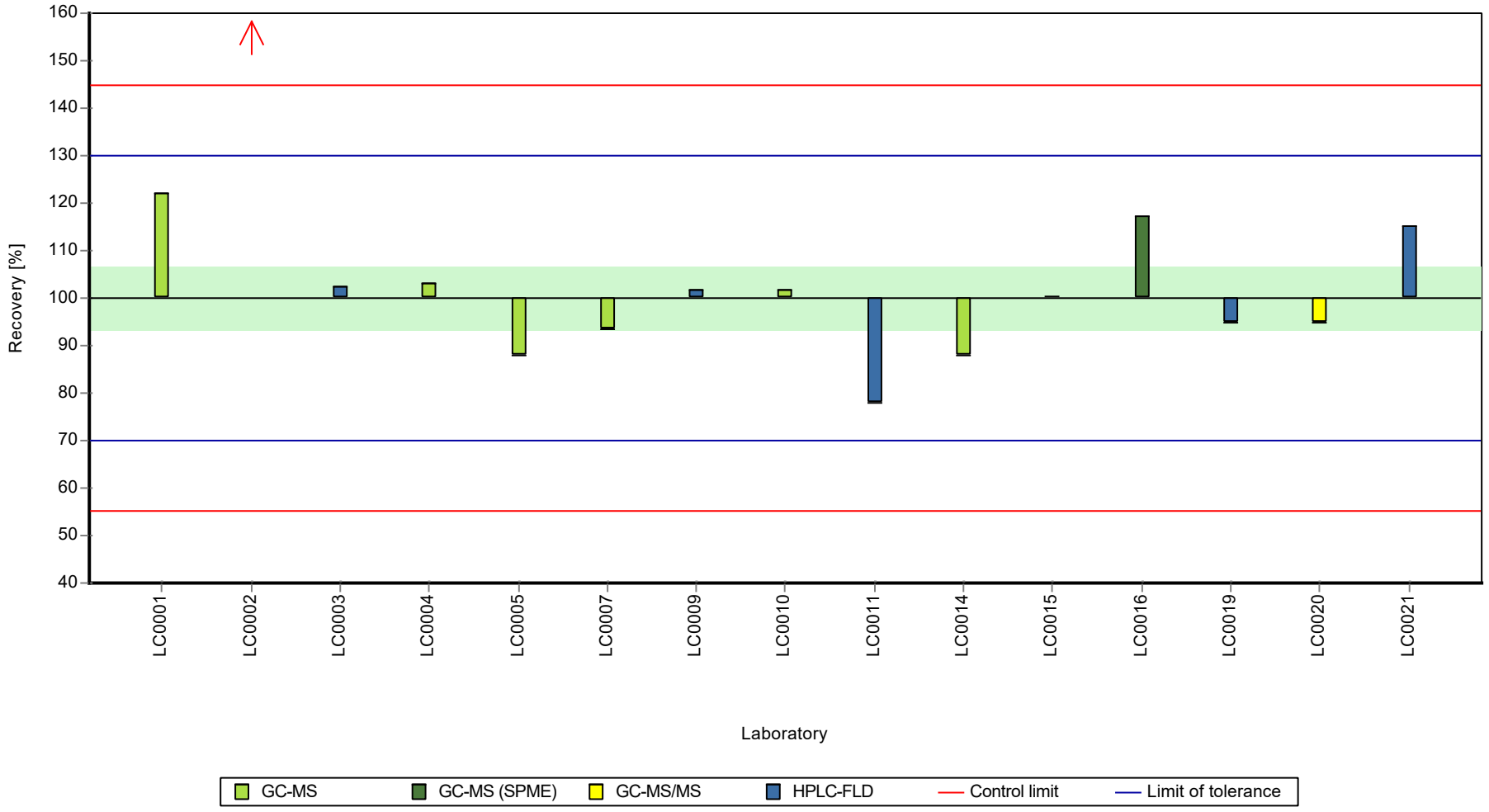
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

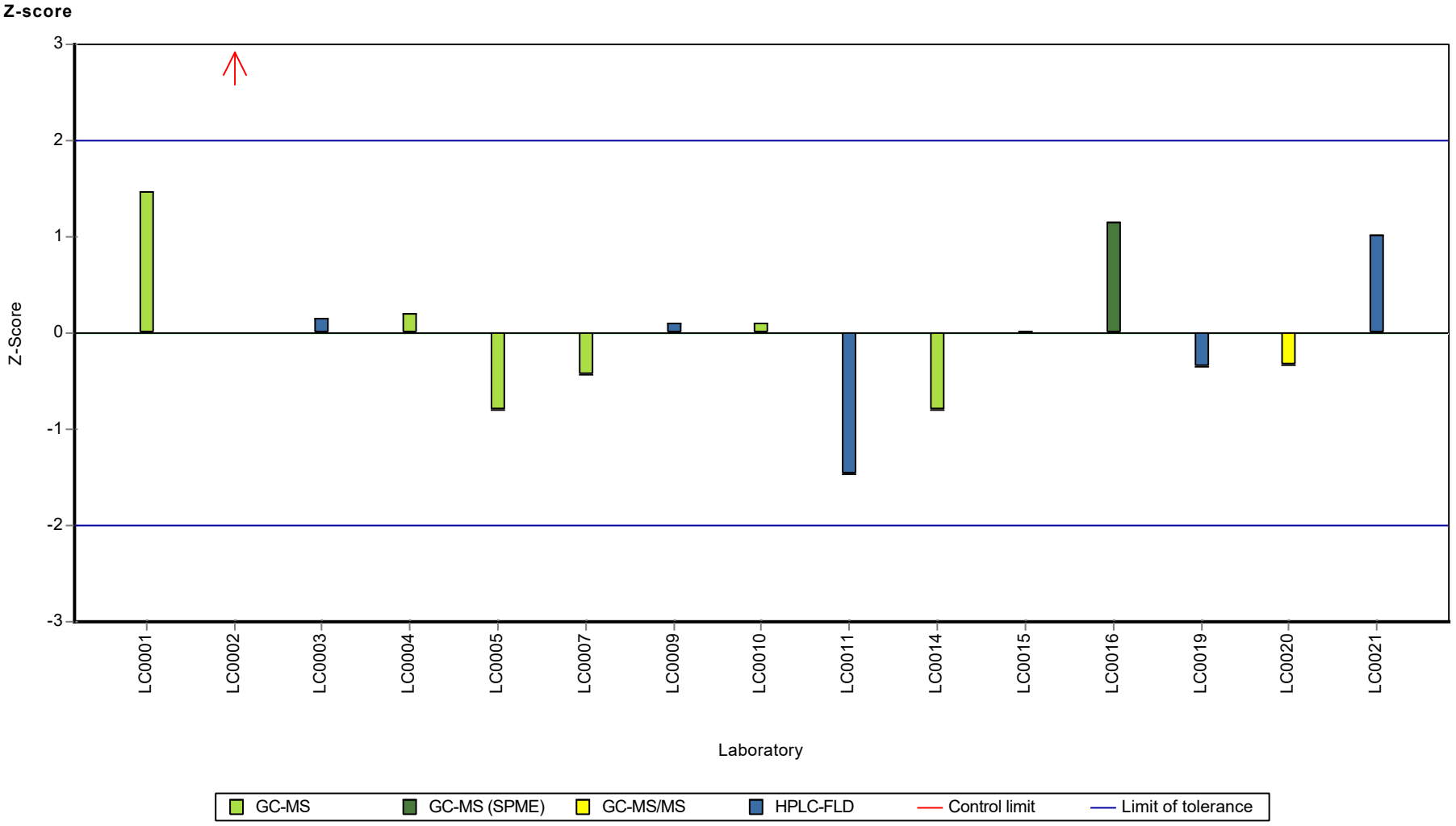
Sample: P23A, Parameter: Phenanthrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Phenanthrene



Parameter oriented report

P23 B

Phenanthrene

Unit	ng/l
Assigned value ± U (k=2)	144 ± 2.72
Criterion	21.6 (15 %)
Minimum - Maximum	138 - 155
Control test value ± U (k=2)	163.0 ± 40.6

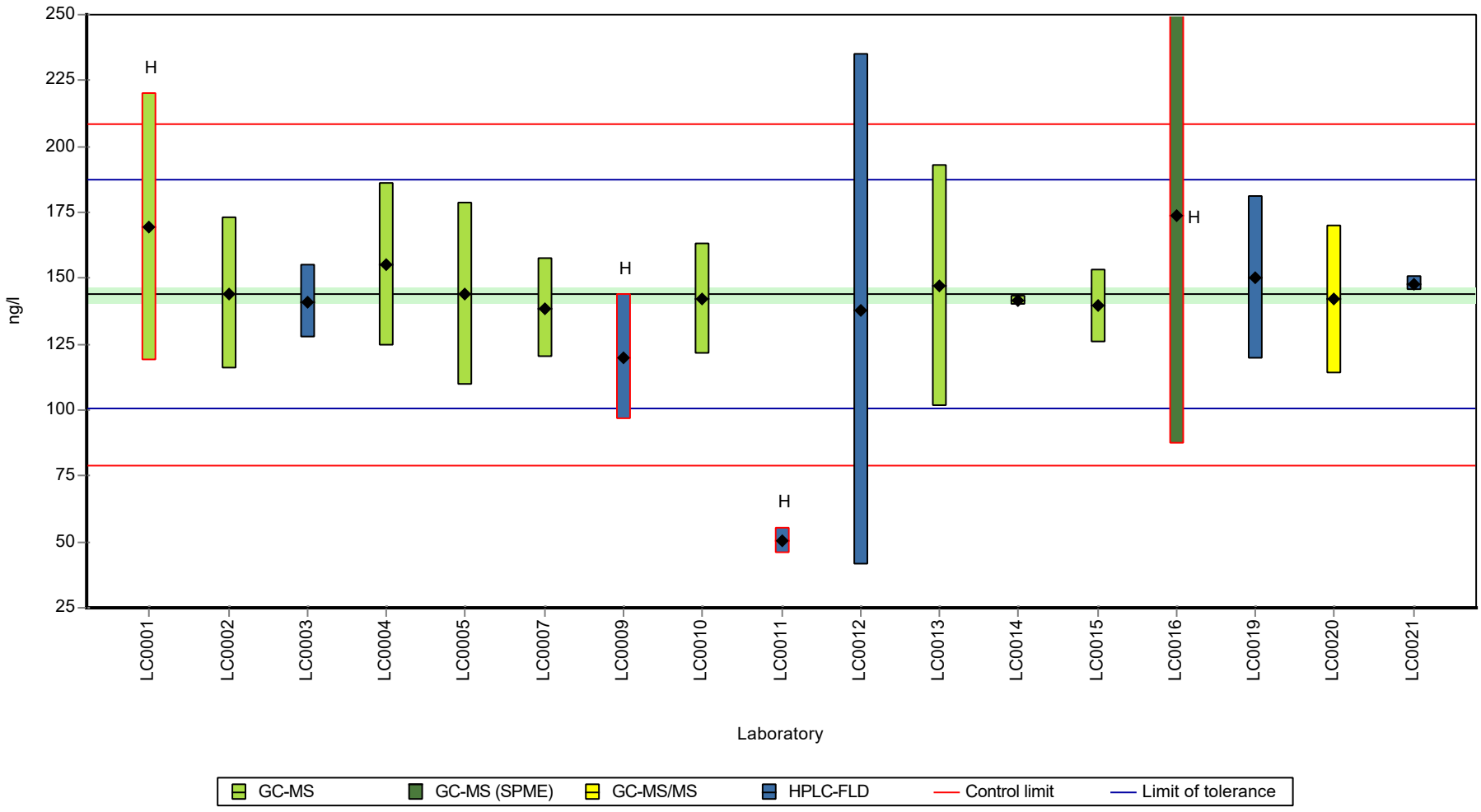
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	169.2	50.8	118	1.17	H
LC0002	144.1	28.8	100	0.01	
LC0003	141	14	98	-0.14	
LC0004	155	31	108	0.51	
LC0005	144	35	100	0.00	
LC0006	-	-	-	-	
LC0007	138.6	19	96.3	-0.25	
LC0008	-	-	-	-	
LC0009	120	24	83.4	-1.11	H
LC0010	142	21	98.7	-0.09	
LC0011	50.3	5.03	35	-4.34	H
LC0012	138	97	95.9	-0.27	
LC0013	147	45.7	102	0.14	
LC0014	141.69	1.95	98.5	-0.1	
LC0015	139.57	13.96	97	-0.2	
LC0016	174	87	121	1.39	H
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	150	31	104	0.28	
LC0020	141.93	28.39	98.6	-0.09	
LC0021	148	3	103	0.19	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	140 ± 19	144 ± 4.09	ng/l
Minimum	50.3	138	ng/l
Maximum	174	155	ng/l
Standard deviation	26.2	4.91	ng/l
rel. standard deviation	18.6	3.41	%
n	17	13	-

Graphical presentation of results

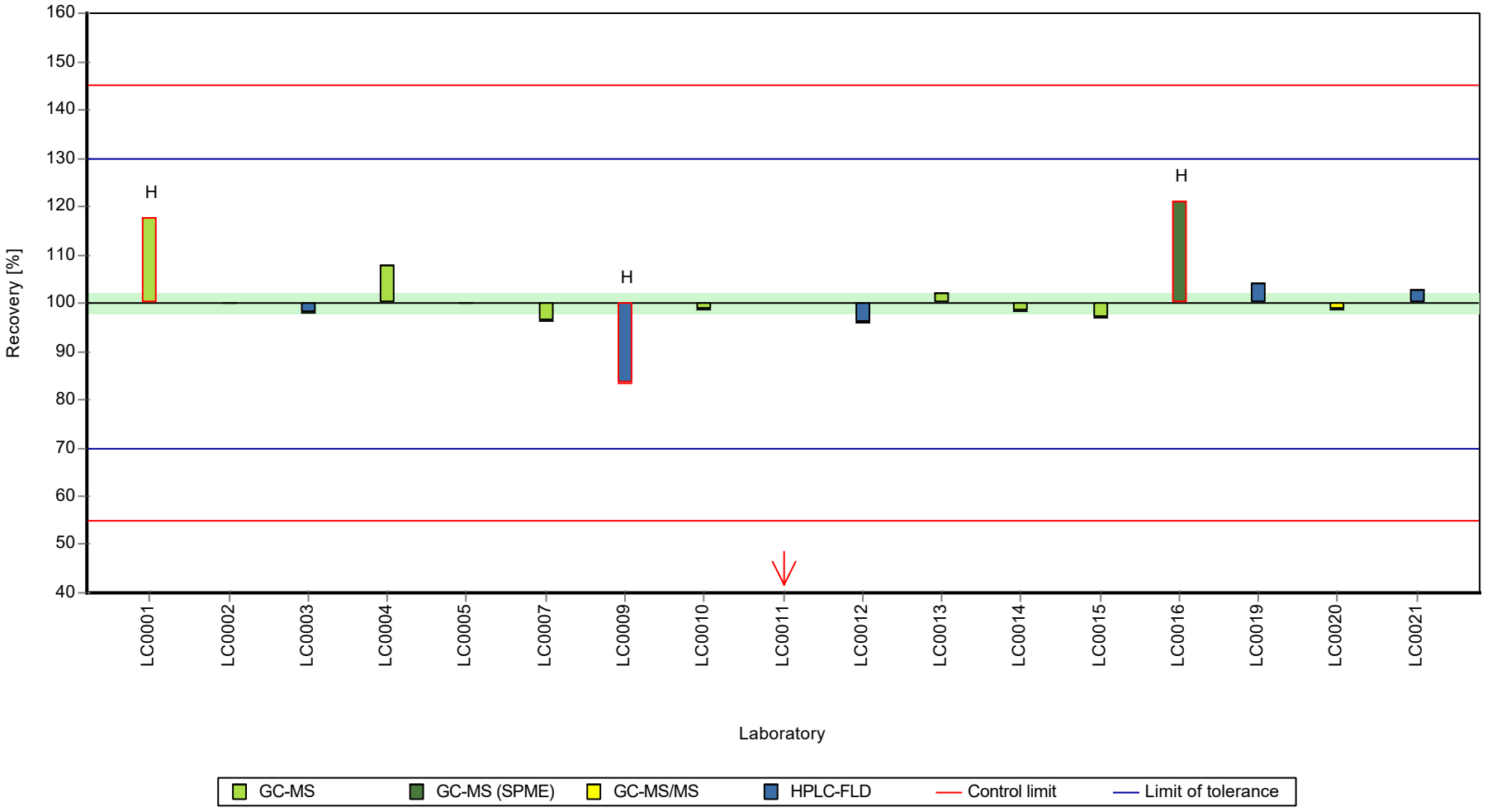
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

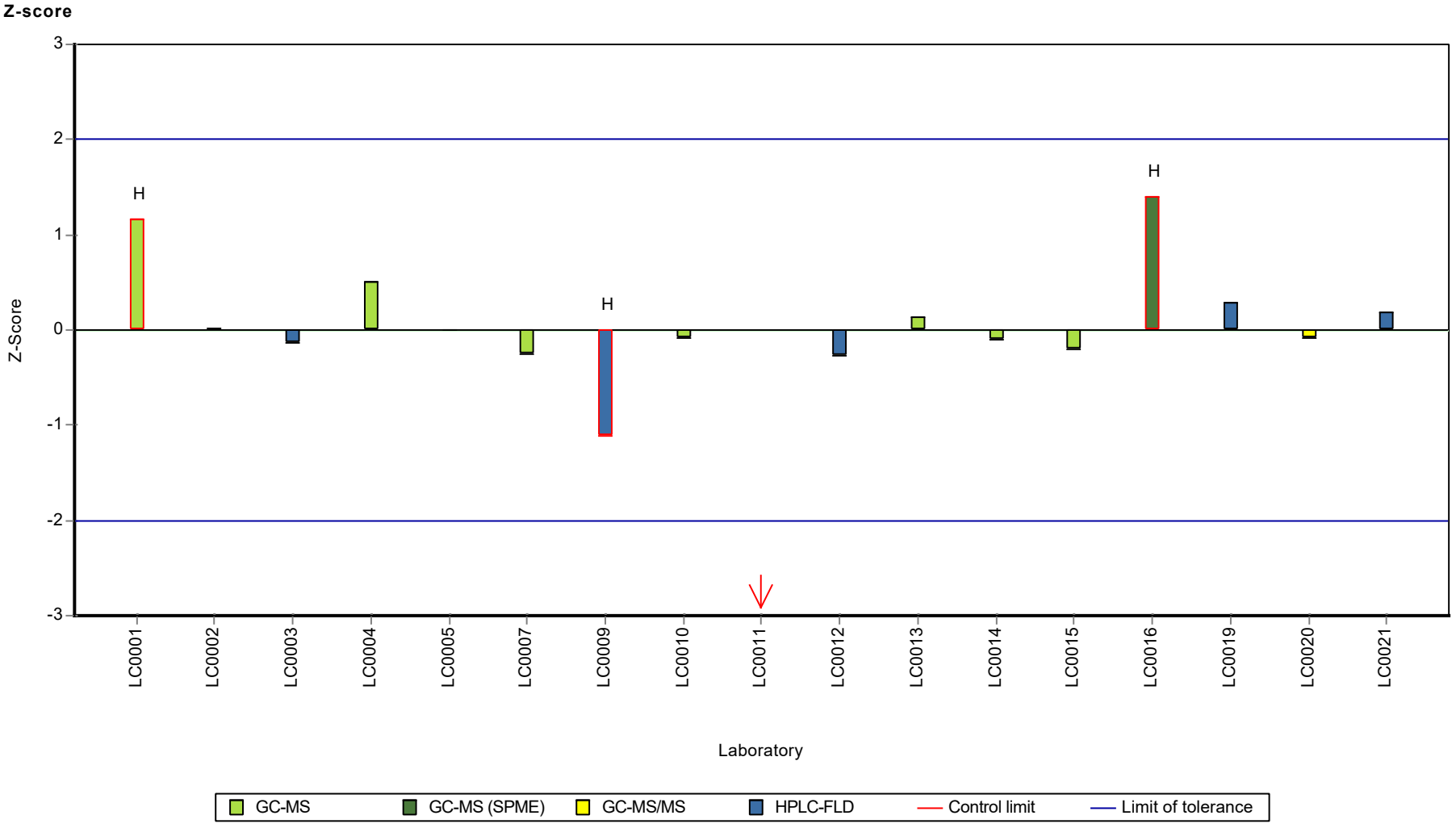
Sample: P23B, Parameter: Phenanthrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Phenanthrene



Parameter oriented report

P23 A

Pyrene

Unit	ng/l
Assigned value ± U (k=2)	12.6 ± 0.683
Criterion	2.02 (16 %)
Minimum - Maximum	10.8 - 14.7
Control test value ± U (k=2)	15.10 ± 3.78

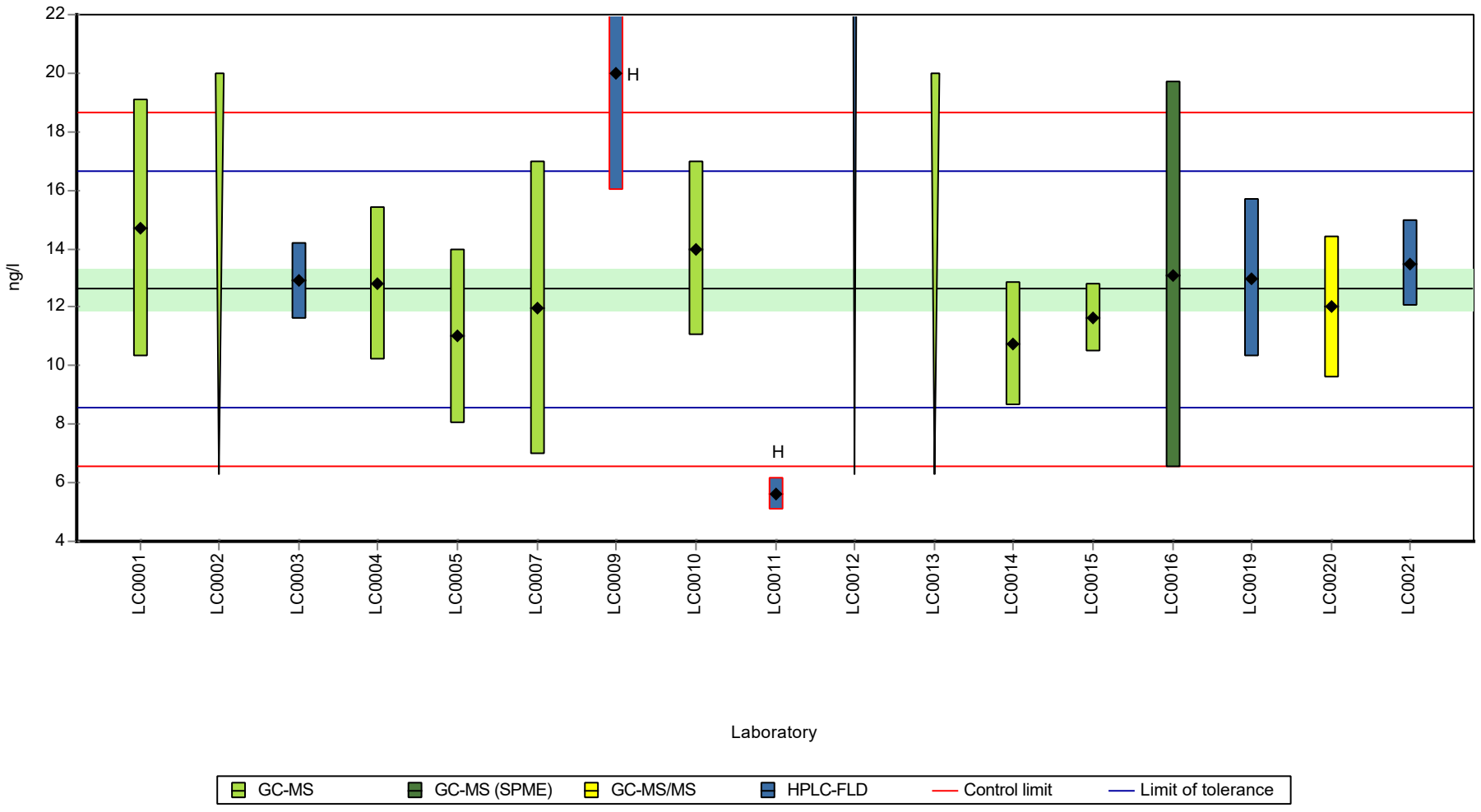
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	14.7	4.4	117	1.03	
LC0002	< 20 (LOQ)	-	-	-	
LC0003	12.9	1.3	102	0.14	
LC0004	12.8	2.6	101	0.09	
LC0005	11	3	87.2	-0.8	
LC0006	-	-	-	-	
LC0007	11.96	5	94.8	-0.32	
LC0008	-	-	-	-	
LC0009	20	4	159	3.66	H
LC0010	14	3	111	0.69	
LC0011	5.63	0.563	44.6	-3.46	H
LC0012	< 50 (LOQ)	-	-	-	
LC0013	< 20 (LOQ)	-	-	-	
LC0014	10.75	2.11	85.2	-0.92	
LC0015	11.64	1.16	92.3	-0.48	
LC0016	13.1	6.6	104	0.24	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	13	2.7	103	0.19	
LC0020	12	2.4	95.1	-0.3	
LC0021	13.5	1.46	107	0.44	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	12.6 ± 2.42	12.6 ± 1.02	ng/l
Minimum	5.63	10.8	ng/l
Maximum	20	14.7	ng/l
Standard deviation	3.02	1.18	ng/l
rel. standard deviation	23.9	9.38	%
n	14	12	-

Graphical presentation of results

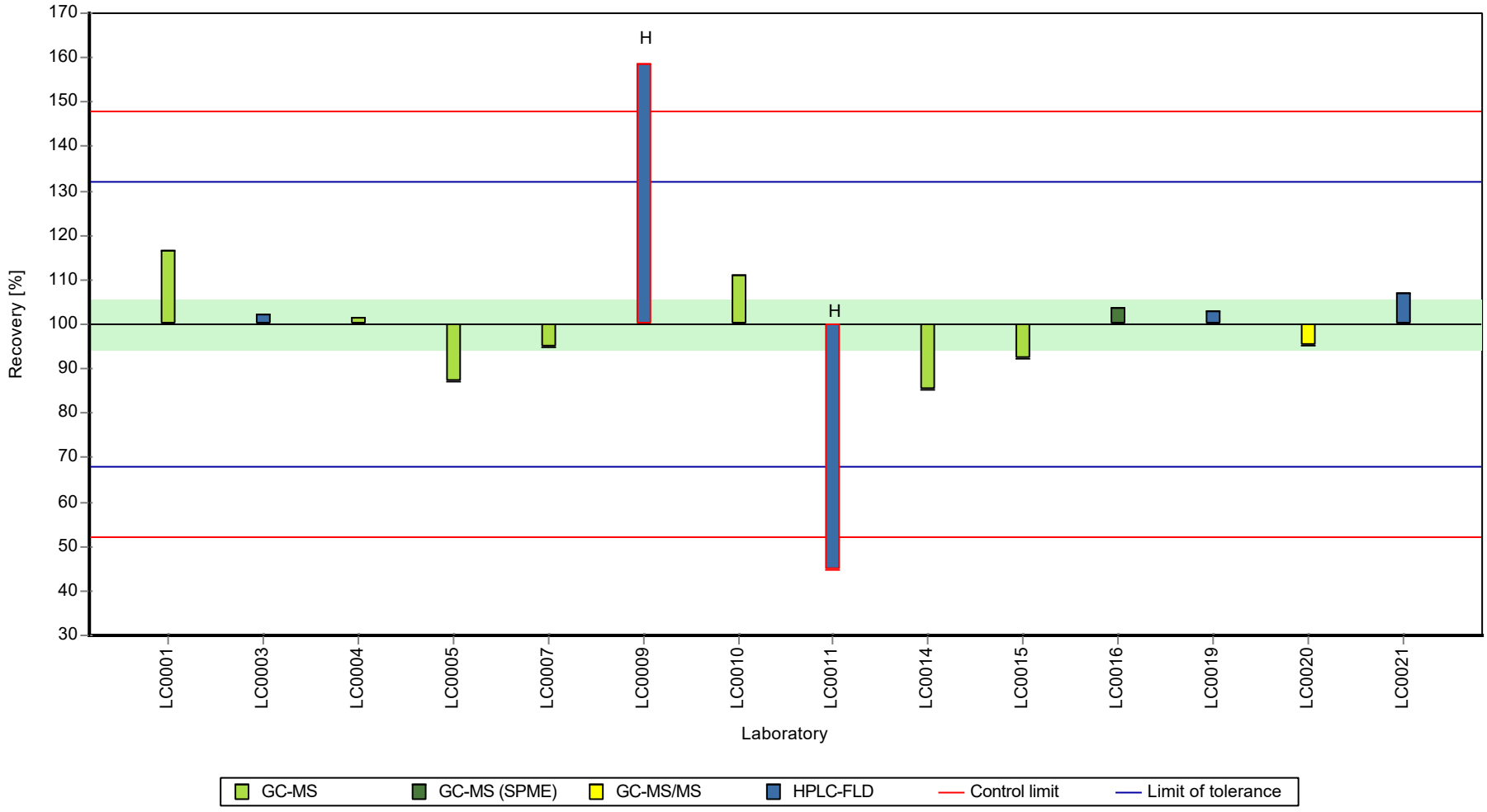
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

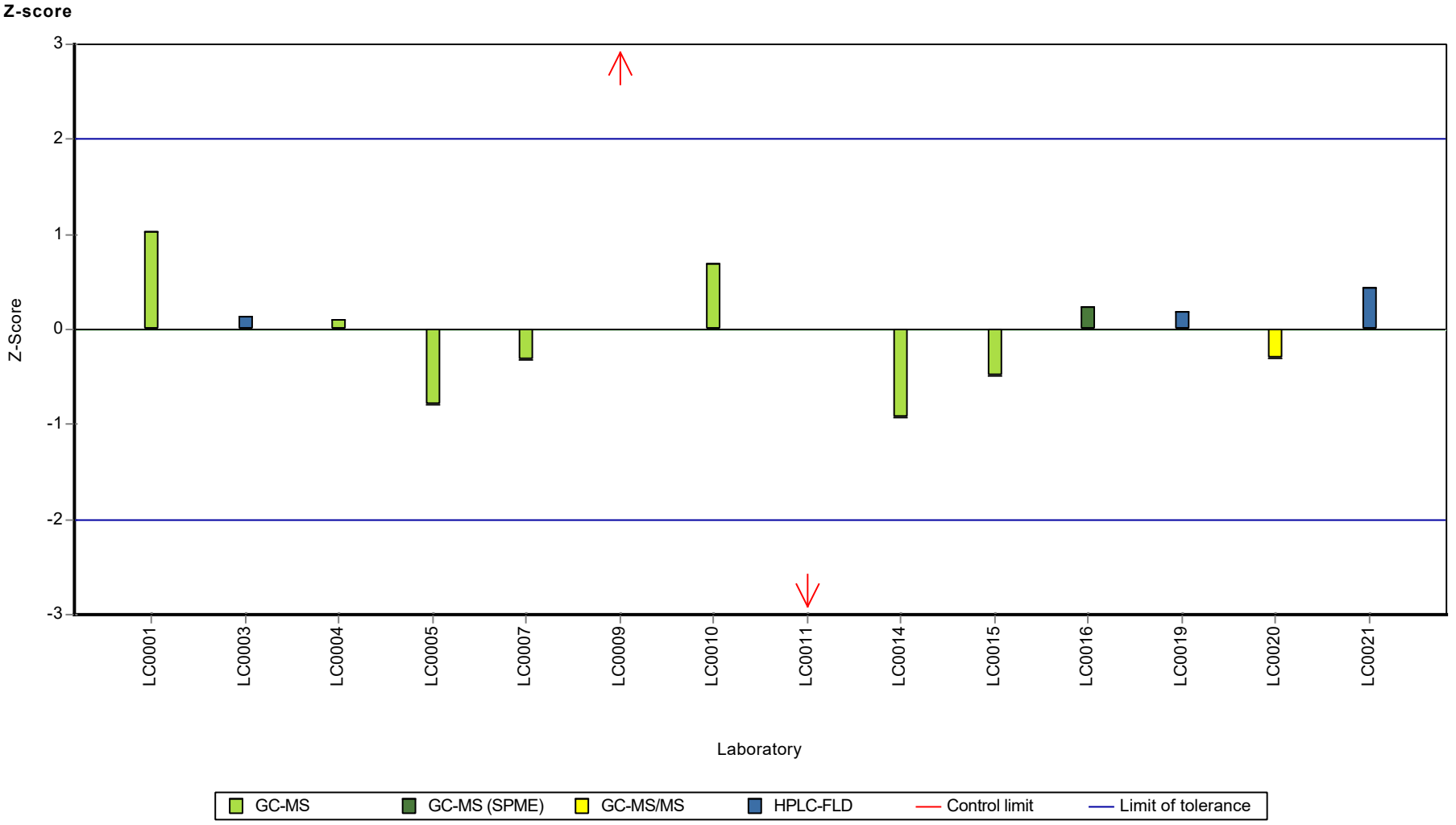
Sample: P23A, Parameter: Pyrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23A, Parameter: Pyrene



Parameter oriented report

P23 B

Pyrene

Unit	ng/l
Assigned value ± U (k=2)	144 ± 7.27
Criterion	23.1 (16 %)
Minimum - Maximum	127 - 170
Control test value ± U (k=2)	157.0 ± 39.2

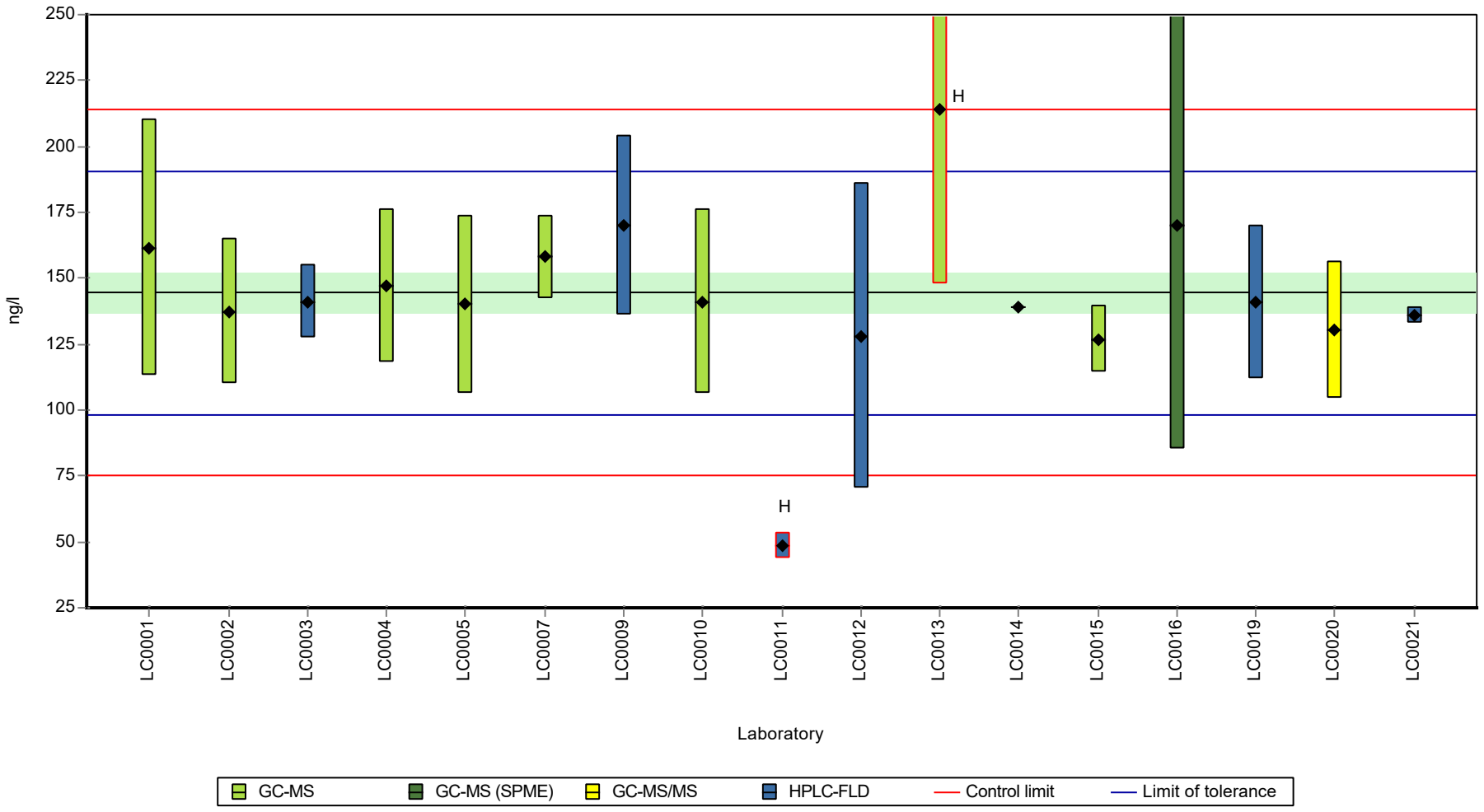
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	161.6	48.5	112	0.74	
LC0002	137.3	27.5	95	-0.31	
LC0003	141	14	97.6	-0.15	
LC0004	147	29	102	0.11	
LC0005	140	34	96.9	-0.19	
LC0006	-	-	-	-	
LC0007	158	16	109	0.58	
LC0008	-	-	-	-	
LC0009	170	34	118	1.1	
LC0010	141	35	97.6	-0.15	
LC0011	48.7	4.87	33.7	-4.14	H
LC0012	128	58	88.6	-0.71	
LC0013	214	66.2	148	3.01	H
LC0014	139.23	0.06	96.4	-0.23	
LC0015	126.74	12.67	87.7	-0.77	
LC0016	170	85	118	1.1	
LC0017	-	-	-	-	
LC0018	-	-	-	-	
LC0019	141	29	97.6	-0.15	
LC0020	130.45	26.09	90.3	-0.61	
LC0021	136	3.06	94.1	-0.37	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	143 ± 23.5	144 ± 10.9	ng/l
Minimum	48.7	127	ng/l
Maximum	214	170	ng/l
Standard deviation	32.3	14.1	ng/l
rel. standard deviation	22.6	9.74	%
n	17	15	-

Graphical presentation of results

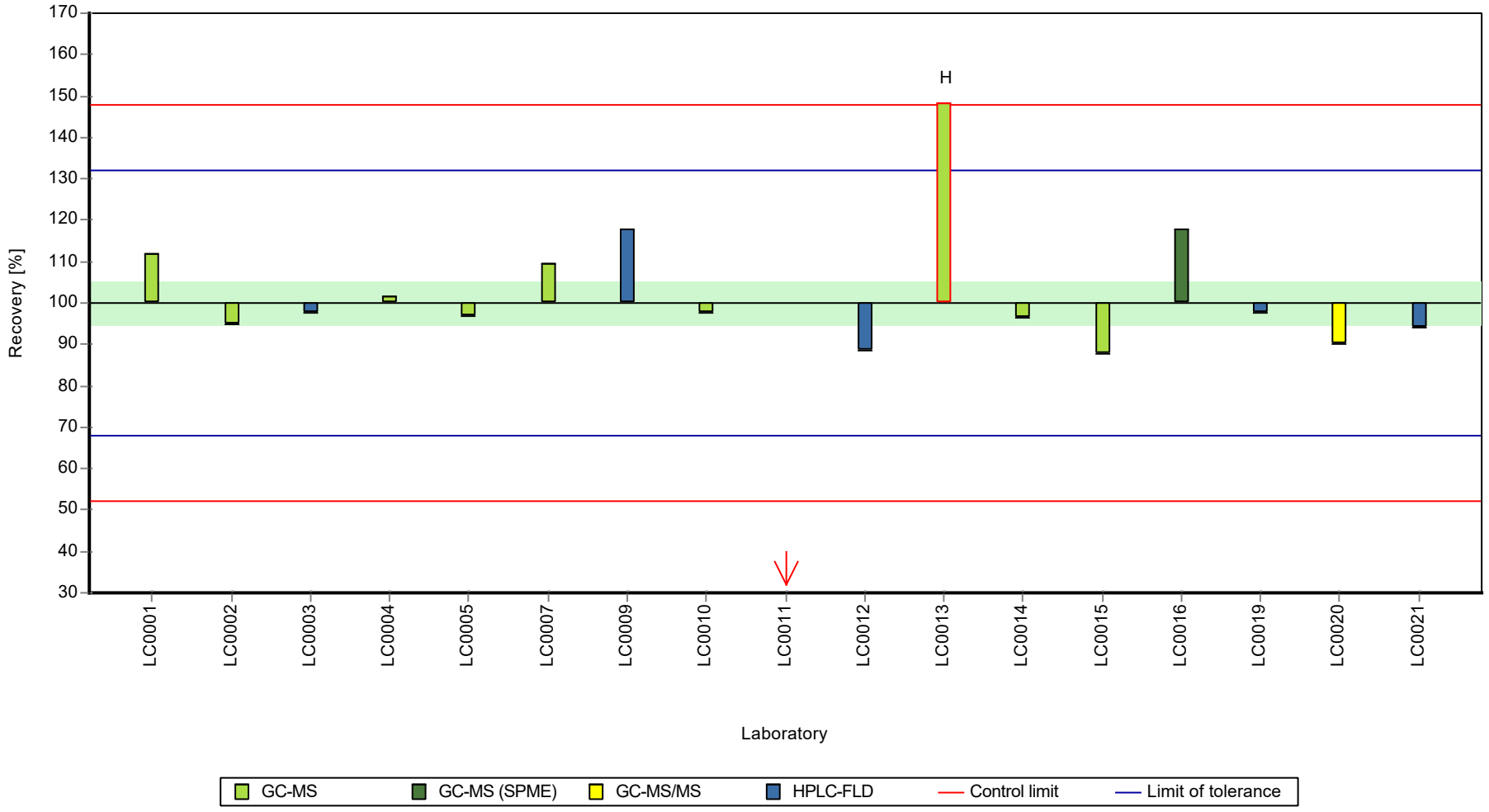
Results



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

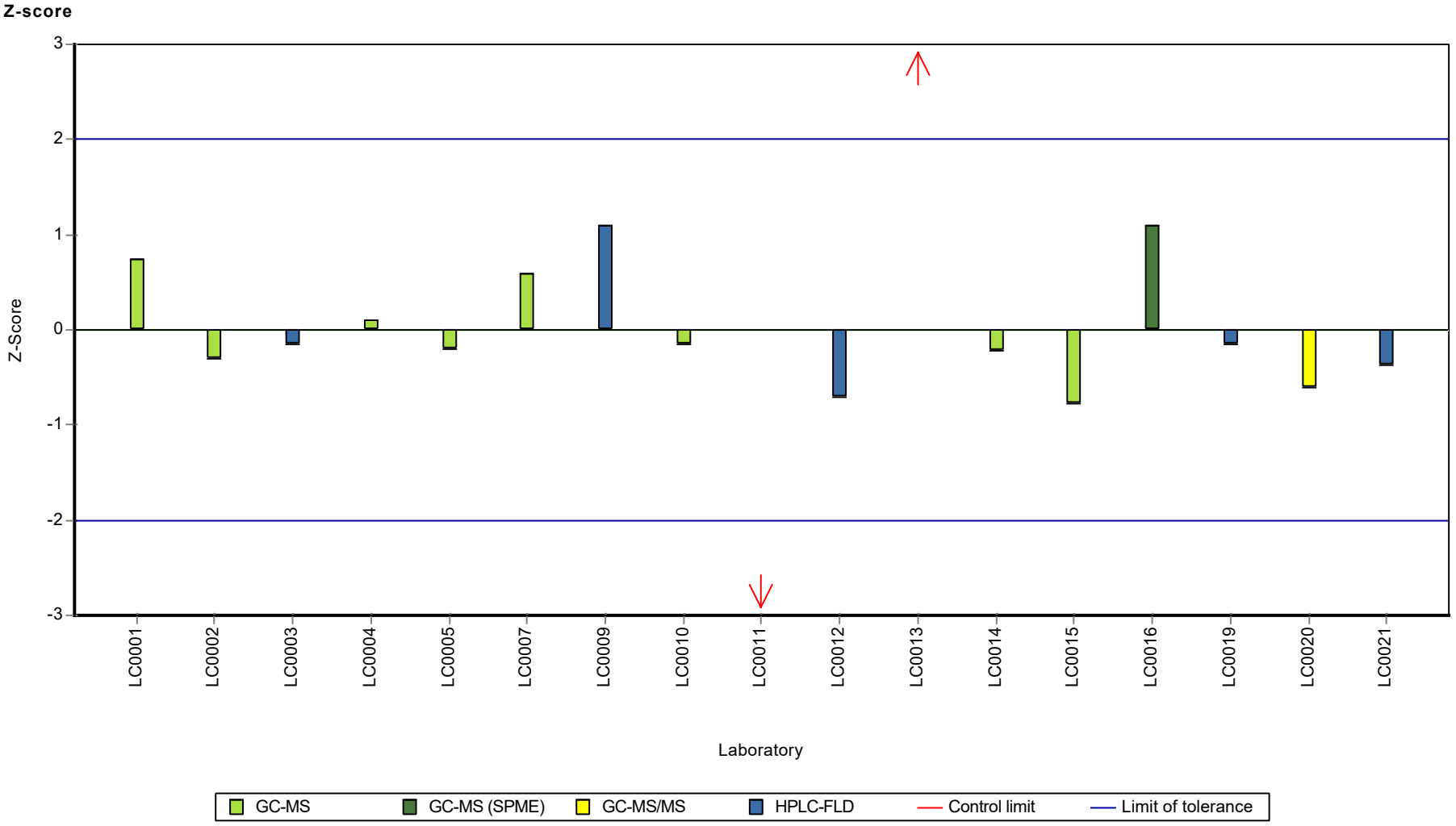
Sample: P23B, Parameter: Pyrene

Recovery rate



Parameter oriented report Polycyclic Aromatic Hydrocarbons P23

Sample: P23B, Parameter: Pyrene



E8. Laborорientierte Auswertung / Laboratory oriented report

Die Laborорientierte Auswertung ist nach dem Laborcode sortiert.

The laboratory oriented report is sorted by laboratory code.

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	11.9 ± 3.6	2.64	85.8	-0.75
Acenaphthylene	ng/l	10.8 ± 0.79	10.8 ± 3.2	2.59	100	0.00
Anthracene	ng/l	12.6 ± 0.723	14.4 ± 4.3	3.29	114	0.54
Benzo[a]anthracene	ng/l	16.1 ± 1.46	17.7 ± 5.3	3.37	110	0.49
Benzo[a]pyrene	ng/l	12.6 ± 2.25	19.7 ± 16.9	3.03	156	2.32
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	29.8 ± 8.9	2.64	192	5.41
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	20.8 ± 6.2	3.91	138	1.47
Chrysene	ng/l	12.9 ± 0.849	11.9 ± 3.6	2.84	92.3	-0.35
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	22.5 ± 6.8	3.48	116	0.92
Fluorene	ng/l	20.9 ± 1.69	19.3 ± 5.8	2.92	92.5	-0.53
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	15.3 ± 4.6	4.77	67.3	-1.56
Phenanthrene	ng/l	14.8 ± 0.953	18 ± 5.4	2.21	122	1.46
Pyrene	ng/l	12.6 ± 0.683	14.7 ± 4.4	2.02	117	1.03

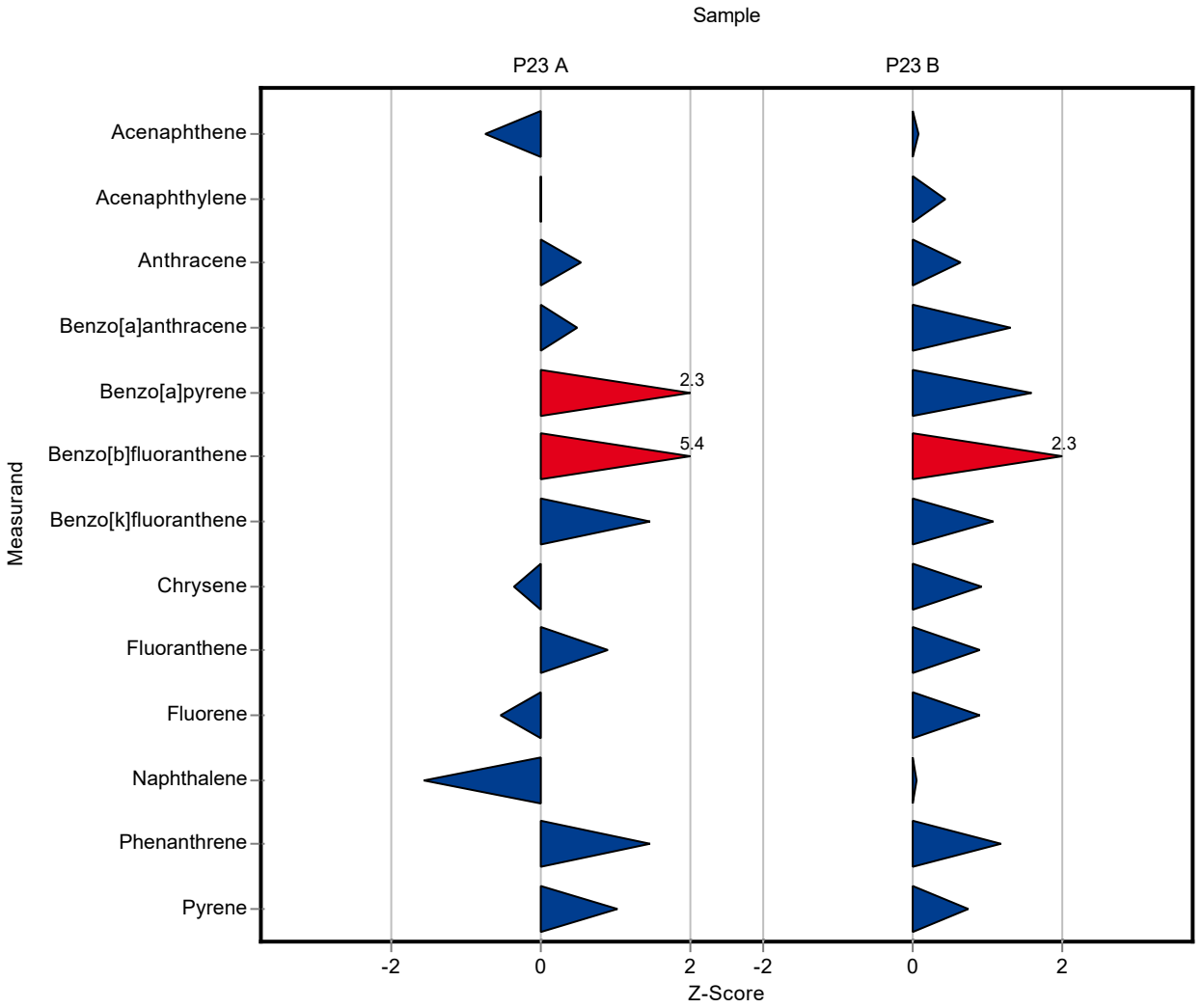
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	137.4 ± 41.2	25.7	101	0.08
Acenaphthylene	ng/l	104 ± 5.36	114.9 ± 34.5	25	110	0.44
Anthracene	ng/l	171 ± 9.03	199.9 ± 60	44.5	117	0.64
Benzo[a]anthracene	ng/l	109 ± 6.92	139.2 ± 41.8	22.9	128	1.32
Benzo[a]pyrene	ng/l	109 ± 8.57	150.3 ± 129.3	26.1	138	1.59
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	132.5 ± 39.7	16.1	140	2.33
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	154.9 ± 46.5	31.5	128	1.07
Chrysene	ng/l	141 ± 7.44	169.6 ± 50.9	31	120	0.92
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0001

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	170.5 ± 51.2	26.4	116	0.89
Fluorene	ng/l	84.9 ± 4.59	95.6 ± 28.7	11.9	113	0.90
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	139 ± 41.7	28.9	101	0.06
Phenanthrene	ng/l	144 ± 2.72	169.2 ± 50.8	21.6	118	1.17
Pyrene	ng/l	144 ± 7.27	161.6 ± 48.5	23.1	112	0.74



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0001

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	11.9 ± 3.6	2.64	85.8	-0.27
Acenaphthylene	ng/l	10.8 ± 0.79	10.8 ± 3.2	2.59	100	0.00
Anthracene	ng/l	12.6 ± 0.723	14.4 ± 4.3	3.29	114	0.20
Benzo[a]anthracene	ng/l	16.1 ± 1.46	17.7 ± 5.3	3.37	110	0.15
Benzo[a]pyrene	ng/l	12.6 ± 2.25	19.7 ± 16.9	3.03	156	0.21
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	29.8 ± 8.9	2.64	192	0.80
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	20.8 ± 6.2	3.91	138	0.46
Chrysene	ng/l	12.9 ± 0.849	11.9 ± 3.6	2.84	92.3	-0.14
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	22.5 ± 6.8	3.48	116	0.23
Fluorene	ng/l	20.9 ± 1.69	19.3 ± 5.8	2.92	92.5	-0.13
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	15.3 ± 4.6	4.77	67.3	-0.76
Phenanthrene	ng/l	14.8 ± 0.953	18 ± 5.4	2.21	122	0.30
Pyrene	ng/l	12.6 ± 0.683	14.7 ± 4.4	2.02	117	0.24

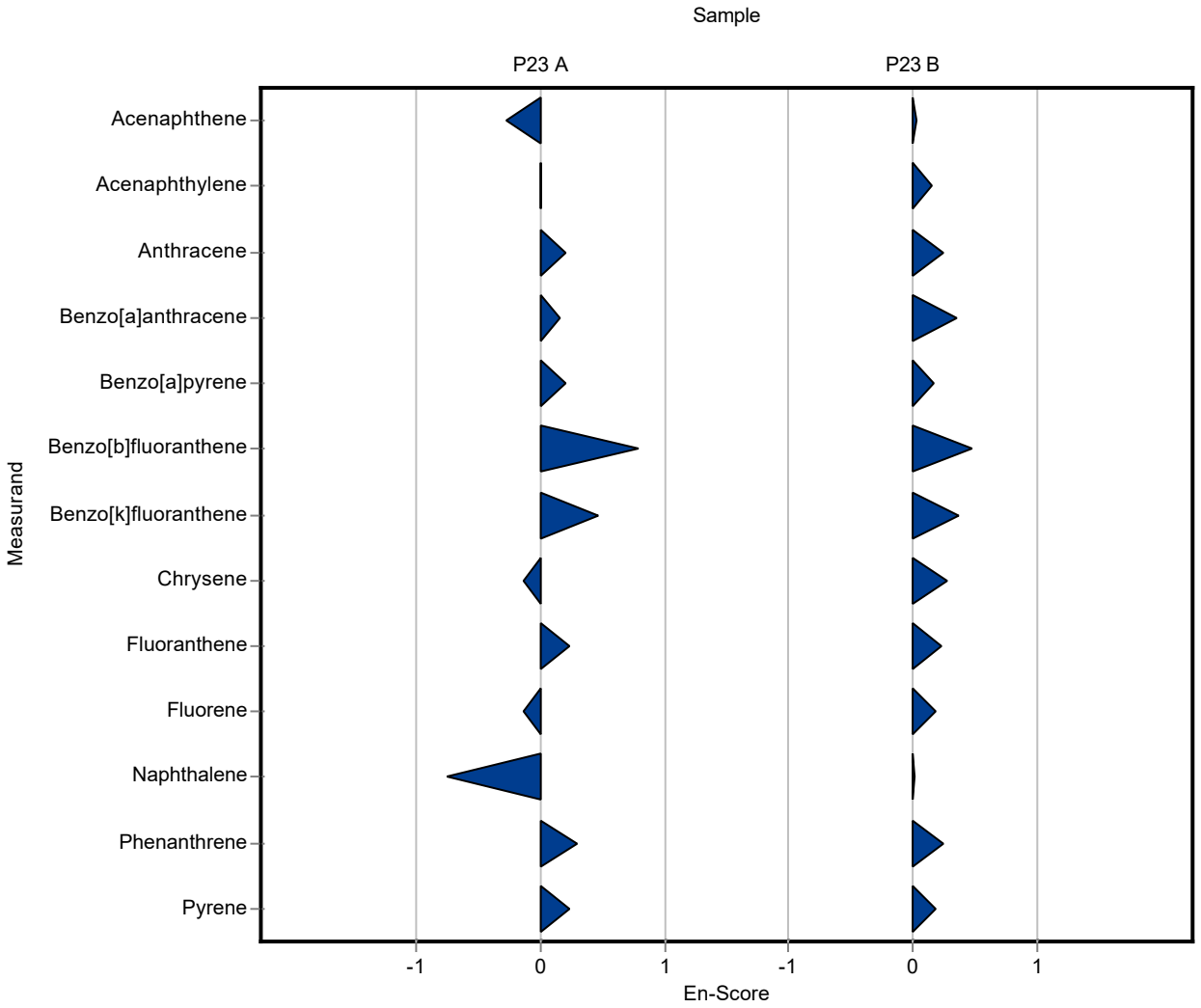
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	137.4 ± 41.2	25.7	101	0.02
Acenaphthylene	ng/l	104 ± 5.36	114.9 ± 34.5	25	110	0.16
Anthracene	ng/l	171 ± 9.03	199.9 ± 60	44.5	117	0.24
Benzo[a]anthracene	ng/l	109 ± 6.92	139.2 ± 41.8	22.9	128	0.36
Benzo[a]pyrene	ng/l	109 ± 8.57	150.3 ± 129.3	26.1	138	0.16
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	132.5 ± 39.7	16.1	140	0.47
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	154.9 ± 46.5	31.5	128	0.36
Chrysene	ng/l	141 ± 7.44	169.6 ± 50.9	31	120	0.28
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0001

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	170.5 ± 51.2	26.4	116	0.23
Fluorene	ng/l	84.9 ± 4.59	95.6 ± 28.7	11.9	113	0.19
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	139 ± 41.7	28.9	101	0.02
Phenanthrene	ng/l	144 ± 2.72	169.2 ± 50.8	21.6	118	0.25
Pyrene	ng/l	144 ± 7.27	161.6 ± 48.5	23.1	112	0.18



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	24.6 ± 4.9	2.64	177	4.07
Acenaphthylene	ng/l	10.8 ± 0.79	<20 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<20 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	<20 (LOQ) ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<20 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	<20 (LOQ) ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	<20 (LOQ) ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	<20 (LOQ) ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	<20 (LOQ) ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	<20 (LOQ) ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	23.3 ± 4.7	3.48	121	1.15
Fluorene	ng/l	20.9 ± 1.69	28.5 ± 5.7	2.92	137	2.62
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	<20 (LOQ) ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	30.2 ± 6	4.77	133	1.56
Phenanthrene	ng/l	14.8 ± 0.953	30.4 ± 6.1	2.21	206	7.06
Pyrene	ng/l	12.6 ± 0.683	<20 (LOQ) ± -	2.02	-	-

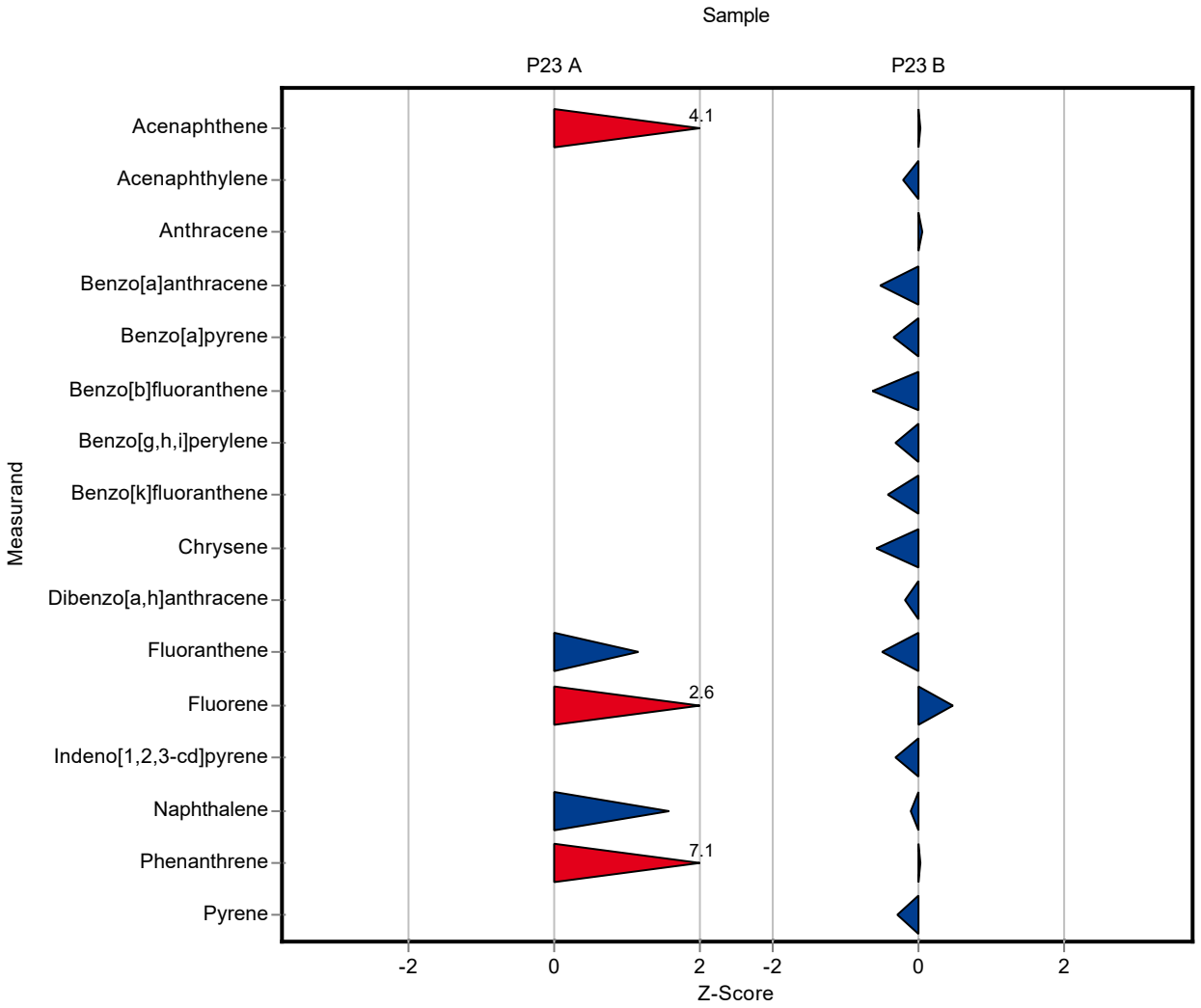
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	136 ± 27.2	25.7	100	0.02
Acenaphthylene	ng/l	104 ± 5.36	98.5 ± 19.7	25	94.7	-0.22
Anthracene	ng/l	171 ± 9.03	173 ± 34.6	44.5	101	0.04
Benzo[a]anthracene	ng/l	109 ± 6.92	96.9 ± 19.4	22.9	88.8	-0.53
Benzo[a]pyrene	ng/l	109 ± 8.57	99.8 ± 20	26.1	91.8	-0.34
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	84.6 ± 16.9	16.1	89.2	-0.64
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	123.5 ± 24.7	44.4	89.1	-0.34
Benzo[k]fluoranthene	ng/l	121 ± 6.99	107.5 ± 21.5	31.5	88.7	-0.44
Chrysene	ng/l	141 ± 7.44	122.8 ± 24.6	31	87.1	-0.58
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	110.1 ± 22	35.1	94.2	-0.20

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0002

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	133.3 ± 26.7	26.4	90.7	-0.51
Fluorene	ng/l	84.9 ± 4.59	90.3 ± 18.1	11.9	106	0.45
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	73 ± 14.6	10.7	95.5	-0.32
Naphthalene	ng/l	137 ± 8.6	133.9 ± 26.8	28.9	97.5	-0.12
Phenanthrene	ng/l	144 ± 2.72	144.1 ± 28.8	21.6	100	0.01
Pyrene	ng/l	144 ± 7.27	137.3 ± 27.5	23.1	95	-0.31



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0002

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	24.6 ± 4.9	2.64	177	1.09
Acenaphthylene	ng/l	10.8 ± 0.79	<20 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<20 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	<20 (LOQ) ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<20 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	<20 (LOQ) ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	<20 (LOQ) ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	<20 (LOQ) ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	<20 (LOQ) ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	<20 (LOQ) ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	23.3 ± 4.7	3.48	121	0.42
Fluorene	ng/l	20.9 ± 1.69	28.5 ± 5.7	2.92	137	0.66
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	<20 (LOQ) ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	30.2 ± 6	4.77	133	0.60
Phenanthrene	ng/l	14.8 ± 0.953	30.4 ± 6.1	2.21	206	1.28
Pyrene	ng/l	12.6 ± 0.683	<20 (LOQ) ± -	2.02	-	-

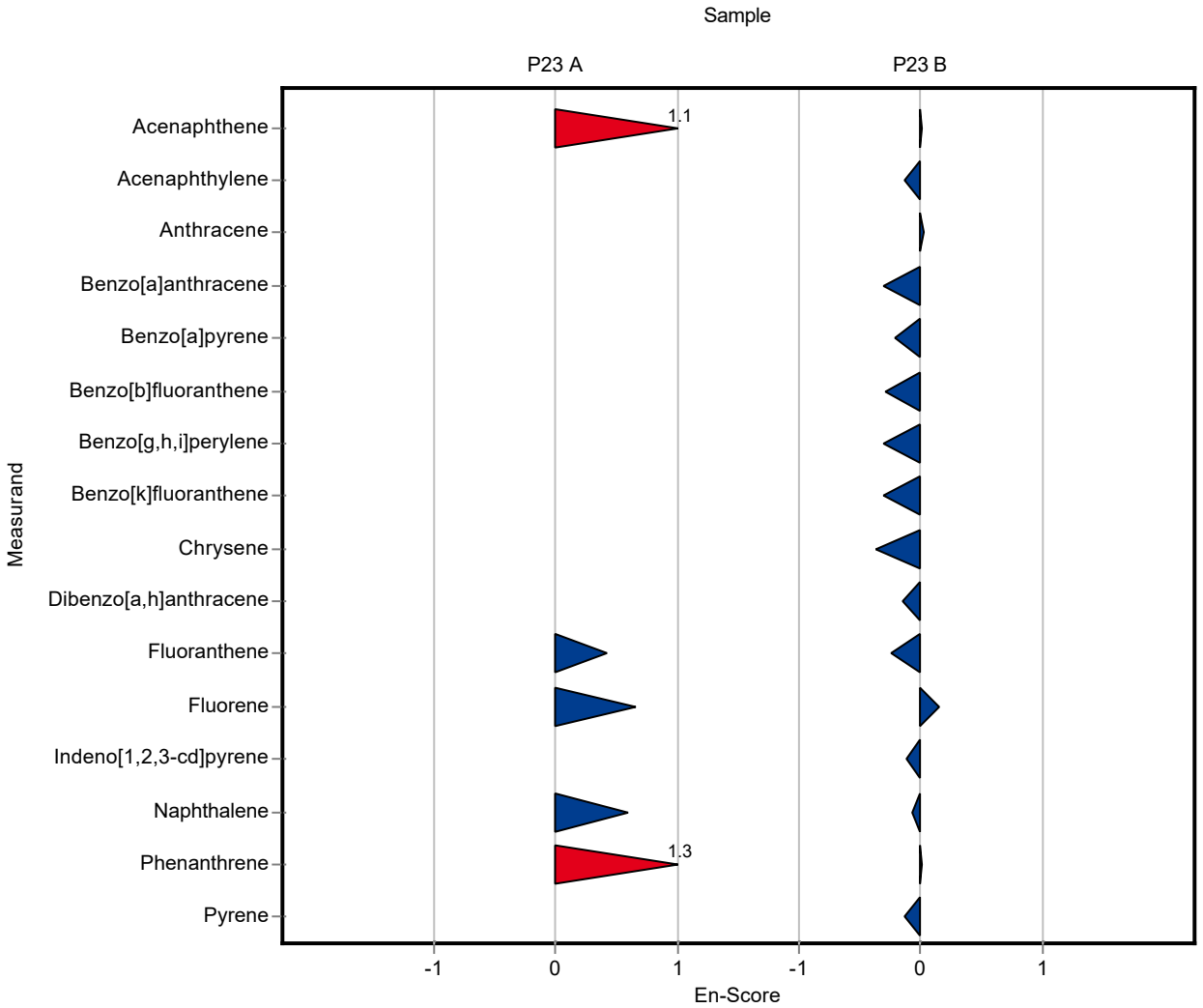
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	136 ± 27.2	25.7	100	0.01
Acenaphthylene	ng/l	104 ± 5.36	98.5 ± 19.7	25	94.7	-0.14
Anthracene	ng/l	171 ± 9.03	173 ± 34.6	44.5	101	0.03
Benzo[a]anthracene	ng/l	109 ± 6.92	96.9 ± 19.4	22.9	88.8	-0.31
Benzo[a]pyrene	ng/l	109 ± 8.57	99.8 ± 20	26.1	91.8	-0.22
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	84.6 ± 16.9	16.1	89.2	-0.30
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	123.5 ± 24.7	44.4	89.1	-0.30
Benzo[k]fluoranthene	ng/l	121 ± 6.99	107.5 ± 21.5	31.5	88.7	-0.32
Chrysene	ng/l	141 ± 7.44	122.8 ± 24.6	31	87.1	-0.36
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	110.1 ± 22	35.1	94.2	-0.14

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0002

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	133.3 ± 26.7	26.4	90.7	-0.25
Fluorene	ng/l	84.9 ± 4.59	90.3 ± 18.1	11.9	106	0.15
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	73 ± 14.6	10.7	95.5	-0.12
Naphthalene	ng/l	137 ± 8.6	133.9 ± 26.8	28.9	97.5	-0.06
Phenanthrene	ng/l	144 ± 2.72	144.1 ± 28.8	21.6	100	0.00
Pyrene	ng/l	144 ± 7.27	137.3 ± 27.5	23.1	95	-0.13



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	13.7 ± 1.4	2.64	98.7	-0.07
Acenaphthylene	ng/l	10.8 ± 0.79	16.9 ± 1.7	2.59	157	2.36
Anthracene	ng/l	12.6 ± 0.723	13.9 ± 1.4	3.29	110	0.39
Benzo[a]anthracene	ng/l	16.1 ± 1.46	18 ± 1.8	3.37	112	0.58
Benzo[a]pyrene	ng/l	12.6 ± 2.25	14.7 ± 1.5	3.03	116	0.68
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	18.4 ± 1.8	2.64	119	1.09
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	14.6 ± 1.5	4.5	104	0.12
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15.9 ± 1.6	3.91	106	0.22
Chrysene	ng/l	12.9 ± 0.849	14.9 ± 1.5	2.84	116	0.70
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	18 ± 1.8	4.89	110	0.35
Fluoranthene	ng/l	19.3 ± 1.32	19.3 ± 1.9	3.48	99.9	0.00
Fluorene	ng/l	20.9 ± 1.69	20.4 ± 2	2.92	97.8	-0.16
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	15 ± 1.5	3.17	99.4	-0.03
Naphthalene	ng/l	22.7 ± 3.5	36.1 ± 3.6	4.77	159	2.80
Phenanthrene	ng/l	14.8 ± 0.953	15.1 ± 1.5	2.21	102	0.15
Pyrene	ng/l	12.6 ± 0.683	12.9 ± 1.3	2.02	102	0.14

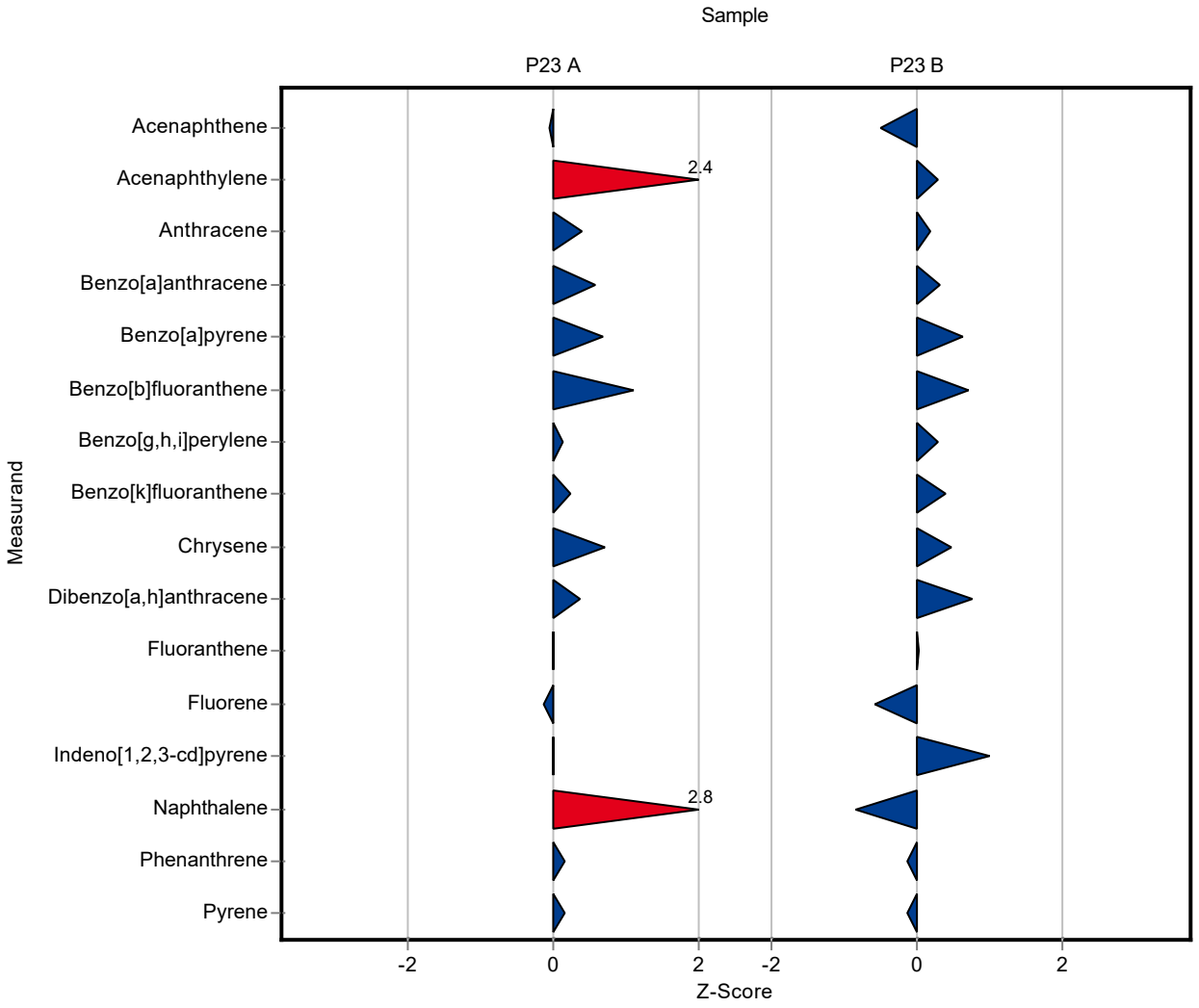
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	122 ± 12	25.7	90.1	-0.52
Acenaphthylene	ng/l	104 ± 5.36	111 ± 11	25	107	0.28
Anthracene	ng/l	171 ± 9.03	179 ± 18	44.5	105	0.17
Benzo[a]anthracene	ng/l	109 ± 6.92	116 ± 12	22.9	106	0.30
Benzo[a]pyrene	ng/l	109 ± 8.57	125 ± 13	26.1	115	0.62
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	106 ± 11	16.1	112	0.69
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	151 ± 15	44.4	109	0.28
Benzo[k]fluoranthene	ng/l	121 ± 6.99	133 ± 13	31.5	110	0.37
Chrysene	ng/l	141 ± 7.44	155 ± 16	31	110	0.45
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	143 ± 14	35.1	122	0.74

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0003

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	147 ± 15	26.4	100	0.00
Fluorene	ng/l	84.9 ± 4.59	78 ± 8	11.9	91.9	-0.58
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	87 ± 9	10.7	114	0.99
Naphthalene	ng/l	137 ± 8.6	113 ± 11	28.9	82.2	-0.84
Phenanthrene	ng/l	144 ± 2.72	141 ± 14	21.6	98	-0.14
Pyrene	ng/l	144 ± 7.27	141 ± 14	23.1	97.6	-0.15



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0003

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	13.7 ± 1.4	2.64	98.7	-0.06
Acenaphthylene	ng/l	10.8 ± 0.79	16.9 ± 1.7	2.59	157	1.75
Anthracene	ng/l	12.6 ± 0.723	13.9 ± 1.4	3.29	110	0.44
Benzo[a]anthracene	ng/l	16.1 ± 1.46	18 ± 1.8	3.37	112	0.50
Benzo[a]pyrene	ng/l	12.6 ± 2.25	14.7 ± 1.5	3.03	116	0.55
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	18.4 ± 1.8	2.64	119	0.69
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	14.6 ± 1.5	4.5	104	0.16
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15.9 ± 1.6	3.91	106	0.24
Chrysene	ng/l	12.9 ± 0.849	14.9 ± 1.5	2.84	116	0.64
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	18 ± 1.8	4.89	110	0.38
Fluoranthene	ng/l	19.3 ± 1.32	19.3 ± 1.9	3.48	99.9	0.00
Fluorene	ng/l	20.9 ± 1.69	20.4 ± 2	2.92	97.8	-0.11
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	15 ± 1.5	3.17	99.4	-0.02
Naphthalene	ng/l	22.7 ± 3.5	36.1 ± 3.6	4.77	159	1.67
Phenanthrene	ng/l	14.8 ± 0.953	15.1 ± 1.5	2.21	102	0.11
Pyrene	ng/l	12.6 ± 0.683	12.9 ± 1.3	2.02	102	0.11

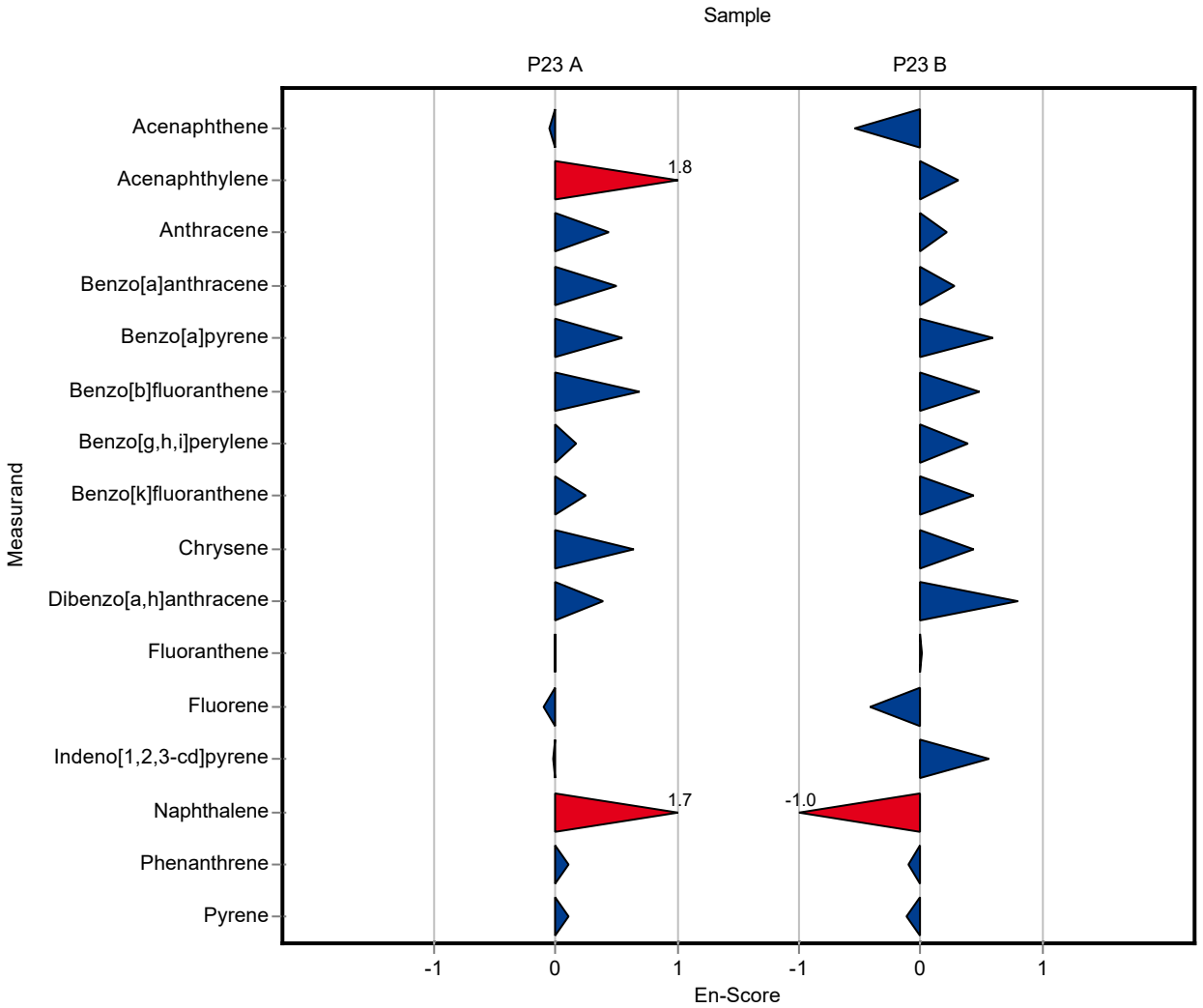
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	122 ± 12	25.7	90.1	-0.54
Acenaphthylene	ng/l	104 ± 5.36	111 ± 11	25	107	0.31
Anthracene	ng/l	171 ± 9.03	179 ± 18	44.5	105	0.21
Benzo[a]anthracene	ng/l	109 ± 6.92	116 ± 12	22.9	106	0.28
Benzo[a]pyrene	ng/l	109 ± 8.57	125 ± 13	26.1	115	0.59
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	106 ± 11	16.1	112	0.48
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	151 ± 15	44.4	109	0.39
Benzo[k]fluoranthene	ng/l	121 ± 6.99	133 ± 13	31.5	110	0.44
Chrysene	ng/l	141 ± 7.44	155 ± 16	31	110	0.43
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	143 ± 14	35.1	122	0.80

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0003

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	147 ± 15	26.4	100	0.00
Fluorene	ng/l	84.9 ± 4.59	78 ± 8	11.9	91.9	-0.41
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	87 ± 9	10.7	114	0.56
Naphthalene	ng/l	137 ± 8.6	113 ± 11	28.9	82.2	-1.03
Phenanthrene	ng/l	144 ± 2.72	141 ± 14	21.6	98	-0.10
Pyrene	ng/l	144 ± 7.27	141 ± 14	23.1	97.6	-0.12



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	14.4 ± 2.9	2.64	104	0.20
Acenaphthylene	ng/l	10.8 ± 0.79	12.2 ± 2.4	2.59	113	0.55
Anthracene	ng/l	12.6 ± 0.723	11.2 ± 2.2	3.29	88.6	-0.44
Benzo[a]anthracene	ng/l	16.1 ± 1.46	17.9 ± 3.6	3.37	112	0.55
Benzo[a]pyrene	ng/l	12.6 ± 2.25	15.9 ± 3.2	3.03	126	1.07
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	18.2 ± 3.6	2.64	117	1.02
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	15 ± 3	4.5	107	0.21
Benzo[k]fluoranthene	ng/l	15 ± 1.5	12.1 ± 2.4	3.91	80.4	-0.75
Chrysene	ng/l	12.9 ± 0.849	14.3 ± 2.9	2.84	111	0.49
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	17.5 ± 3.5	4.89	107	0.24
Fluoranthene	ng/l	19.3 ± 1.32	19.3 ± 3.9	3.48	99.9	0.00
Fluorene	ng/l	20.9 ± 1.69	19.2 ± 3.8	2.92	92	-0.57
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	15.2 ± 3	3.17	101	0.04
Naphthalene	ng/l	22.7 ± 3.5	22.5 ± 4.5	4.77	99	-0.05
Phenanthrene	ng/l	14.8 ± 0.953	15.2 ± 3	2.21	103	0.20
Pyrene	ng/l	12.6 ± 0.683	12.8 ± 2.6	2.02	101	0.09

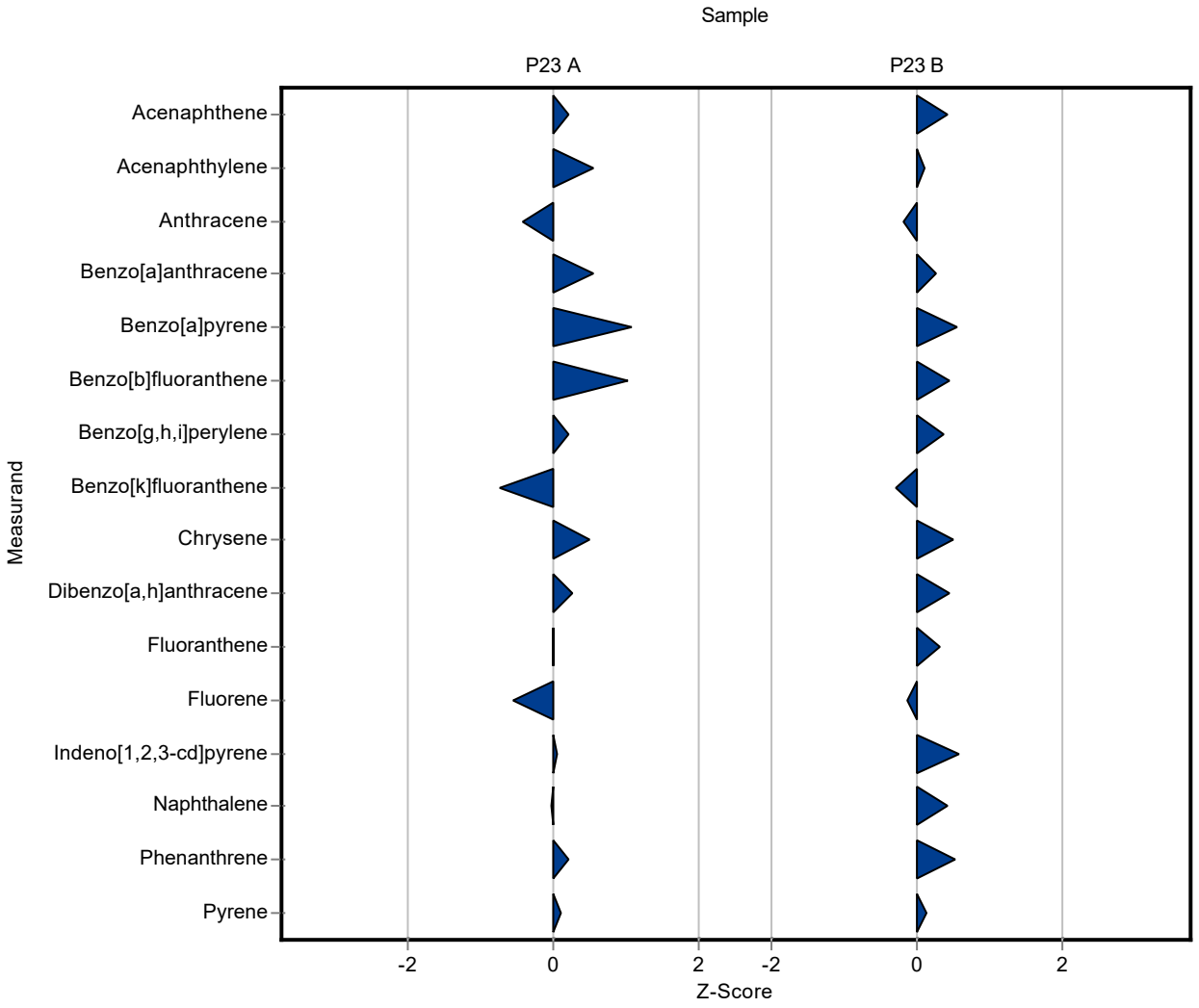
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	146 ± 29	25.7	108	0.41
Acenaphthylene	ng/l	104 ± 5.36	106 ± 21	25	102	0.08
Anthracene	ng/l	171 ± 9.03	162 ± 32	44.5	94.6	-0.21
Benzo[a]anthracene	ng/l	109 ± 6.92	115 ± 23	22.9	105	0.26
Benzo[a]pyrene	ng/l	109 ± 8.57	123 ± 25	26.1	113	0.55
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	102 ± 20	16.1	108	0.44
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	154 ± 31	44.4	111	0.35
Benzo[k]fluoranthene	ng/l	121 ± 6.99	112 ± 22	31.5	92.4	-0.29
Chrysene	ng/l	141 ± 7.44	156 ± 31	31	111	0.48
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	132 ± 26	35.1	113	0.43

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0004

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	155 ± 31	26.4	106	0.31
Fluorene	ng/l	84.9 ± 4.59	83.2 ± 16.6	11.9	98	-0.14
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	82.4 ± 16.5	10.7	108	0.56
Naphthalene	ng/l	137 ± 8.6	149 ± 30	28.9	108	0.40
Phenanthrene	ng/l	144 ± 2.72	155 ± 31	21.6	108	0.51
Pyrene	ng/l	144 ± 7.27	147 ± 29	23.1	102	0.11



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0004

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	14.4 ± 2.9	2.64	104	0.09
Acenaphthylene	ng/l	10.8 ± 0.79	12.2 ± 2.4	2.59	113	0.29
Anthracene	ng/l	12.6 ± 0.723	11.2 ± 2.2	3.29	88.6	-0.32
Benzo[a]anthracene	ng/l	16.1 ± 1.46	17.9 ± 3.6	3.37	112	0.25
Benzo[a]pyrene	ng/l	12.6 ± 2.25	15.9 ± 3.2	3.03	126	0.48
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	18.2 ± 3.6	2.64	117	0.36
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	15 ± 3	4.5	107	0.15
Benzo[k]fluoranthene	ng/l	15 ± 1.5	12.1 ± 2.4	3.91	80.4	-0.58
Chrysene	ng/l	12.9 ± 0.849	14.3 ± 2.9	2.84	111	0.24
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	17.5 ± 3.5	4.89	107	0.16
Fluoranthene	ng/l	19.3 ± 1.32	19.3 ± 3.9	3.48	99.9	0.00
Fluorene	ng/l	20.9 ± 1.69	19.2 ± 3.8	2.92	92	-0.21
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	15.2 ± 3	3.17	101	0.02
Naphthalene	ng/l	22.7 ± 3.5	22.5 ± 4.5	4.77	99	-0.02
Phenanthrene	ng/l	14.8 ± 0.953	15.2 ± 3	2.21	103	0.07
Pyrene	ng/l	12.6 ± 0.683	12.8 ± 2.6	2.02	101	0.04

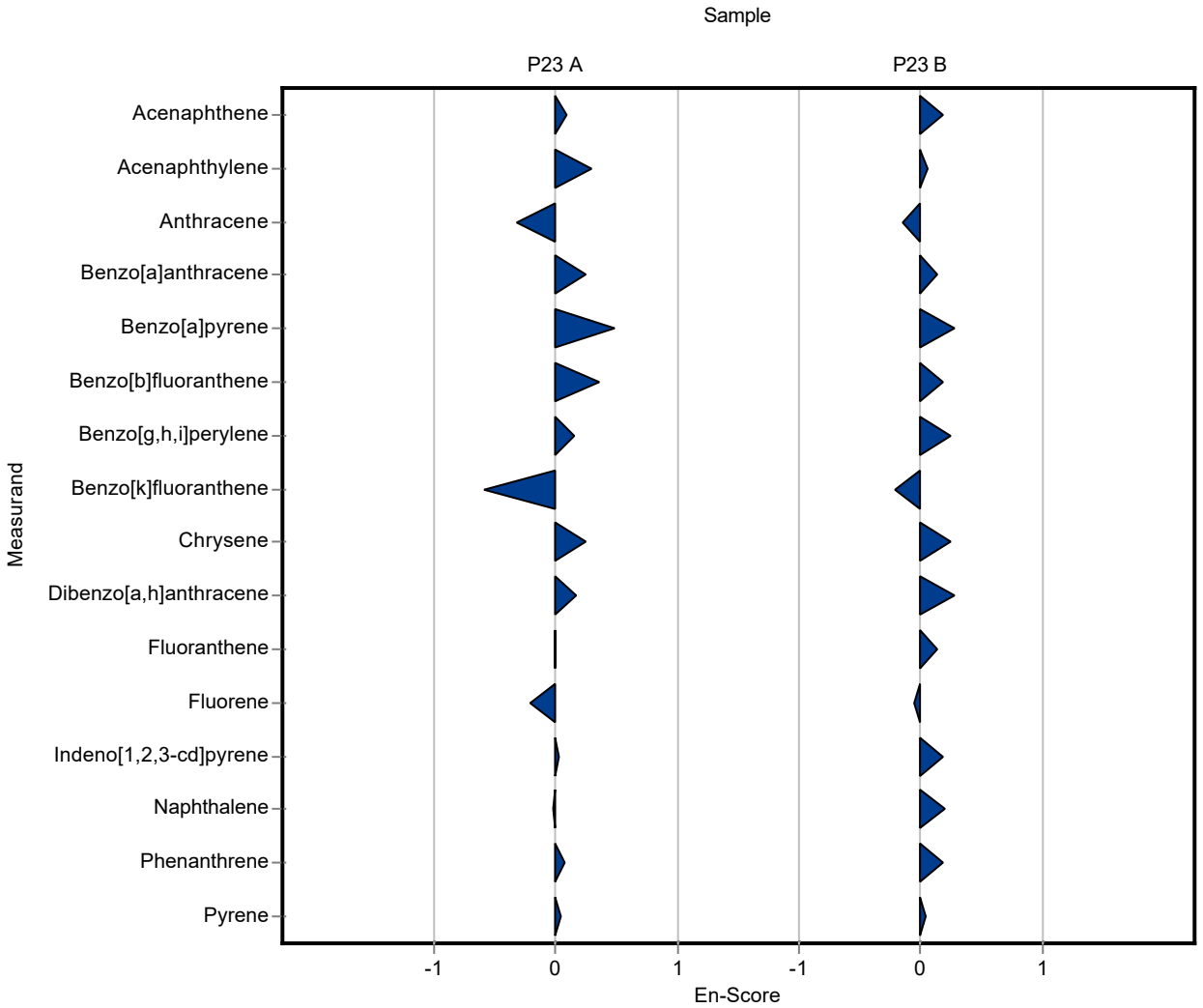
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	146 ± 29	25.7	108	0.18
Acenaphthylene	ng/l	104 ± 5.36	106 ± 21	25	102	0.05
Anthracene	ng/l	171 ± 9.03	162 ± 32	44.5	94.6	-0.14
Benzo[a]anthracene	ng/l	109 ± 6.92	115 ± 23	22.9	105	0.13
Benzo[a]pyrene	ng/l	109 ± 8.57	123 ± 25	26.1	113	0.28
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	102 ± 20	16.1	108	0.18
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	154 ± 31	44.4	111	0.24
Benzo[k]fluoranthene	ng/l	121 ± 6.99	112 ± 22	31.5	92.4	-0.21
Chrysene	ng/l	141 ± 7.44	156 ± 31	31	111	0.24
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	132 ± 26	35.1	113	0.28

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0004

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	155 ± 31	26.4	106	0.13
Fluorene	ng/l	84.9 ± 4.59	83.2 ± 16.6	11.9	98	-0.05
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	82.4 ± 16.5	10.7	108	0.18
Naphthalene	ng/l	137 ± 8.6	149 ± 30	28.9	108	0.19
Phenanthrene	ng/l	144 ± 2.72	155 ± 31	21.6	108	0.18
Pyrene	ng/l	144 ± 7.27	147 ± 29	23.1	102	0.04



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	14 ± 6	2.64	101	0.05
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	11 ± 3	3.29	87.1	-0.50
Benzo[a]anthracene	ng/l	16.1 ± 1.46	14 ± 4	3.37	87.2	-0.61
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<10 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	14 ± 4	2.64	90.2	-0.58
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	<10 (LOQ) ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	12 ± 3	3.91	79.8	-0.78
Chrysene	ng/l	12.9 ± 0.849	11 ± 3	2.84	85.3	-0.67
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	<10 (LOQ) ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	15 ± 4	3.48	77.7	-1.24
Fluorene	ng/l	20.9 ± 1.69	20 ± 5	2.92	95.9	-0.29
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	<10 (LOQ) ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	19 ± 5	4.77	83.6	-0.78
Phenanthrene	ng/l	14.8 ± 0.953	13 ± 4	2.21	88	-0.80
Pyrene	ng/l	12.6 ± 0.683	11 ± 3	2.02	87.2	-0.80

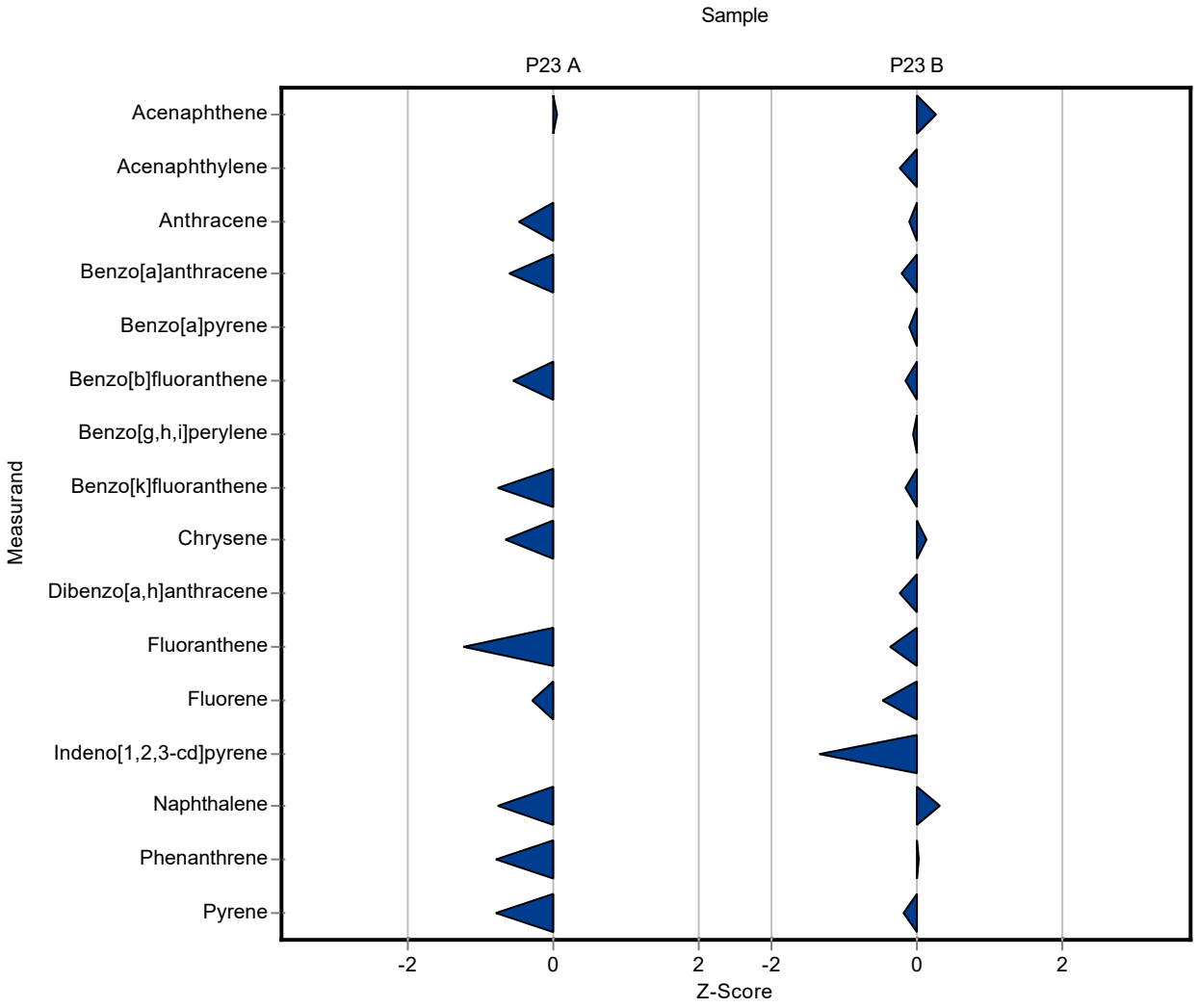
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	142 ± 35	25.7	105	0.26
Acenaphthylene	ng/l	104 ± 5.36	98 ± 24	25	94.2	-0.24
Anthracene	ng/l	171 ± 9.03	166 ± 40	44.5	96.9	-0.12
Benzo[a]anthracene	ng/l	109 ± 6.92	104 ± 25	22.9	95.3	-0.22
Benzo[a]pyrene	ng/l	109 ± 8.57	106 ± 26	26.1	97.5	-0.11
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	92 ± 23	16.1	97	-0.18
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	136 ± 33	44.4	98.1	-0.06
Benzo[k]fluoranthene	ng/l	121 ± 6.99	116 ± 28	31.5	95.7	-0.17
Chrysene	ng/l	141 ± 7.44	145 ± 35	31	103	0.13
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	108 ± 26	35.1	92.4	-0.26

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0005

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	137 ± 33	26.4	93.3	-0.37
Fluorene	ng/l	84.9 ± 4.59	79 ± 19	11.9	93	-0.50
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	62 ± 15	10.7	81.1	-1.35
Naphthalene	ng/l	137 ± 8.6	146 ± 36	28.9	106	0.30
Phenanthrene	ng/l	144 ± 2.72	144 ± 35	21.6	100	0.00
Pyrene	ng/l	144 ± 7.27	140 ± 34	23.1	96.9	-0.19



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0005

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	14 ± 6	2.64	101	0.01
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	11 ± 3	3.29	87.1	-0.27
Benzo[a]anthracene	ng/l	16.1 ± 1.46	14 ± 4	3.37	87.2	-0.25
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<10 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	14 ± 4	2.64	90.2	-0.18
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	<10 (LOQ) ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	12 ± 3	3.91	79.8	-0.49
Chrysene	ng/l	12.9 ± 0.849	11 ± 3	2.84	85.3	-0.31
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	<10 (LOQ) ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	15 ± 4	3.48	77.7	-0.53
Fluorene	ng/l	20.9 ± 1.69	20 ± 5	2.92	95.9	-0.08
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	<10 (LOQ) ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	19 ± 5	4.77	83.6	-0.35
Phenanthrene	ng/l	14.8 ± 0.953	13 ± 4	2.21	88	-0.22
Pyrene	ng/l	12.6 ± 0.683	11 ± 3	2.02	87.2	-0.27

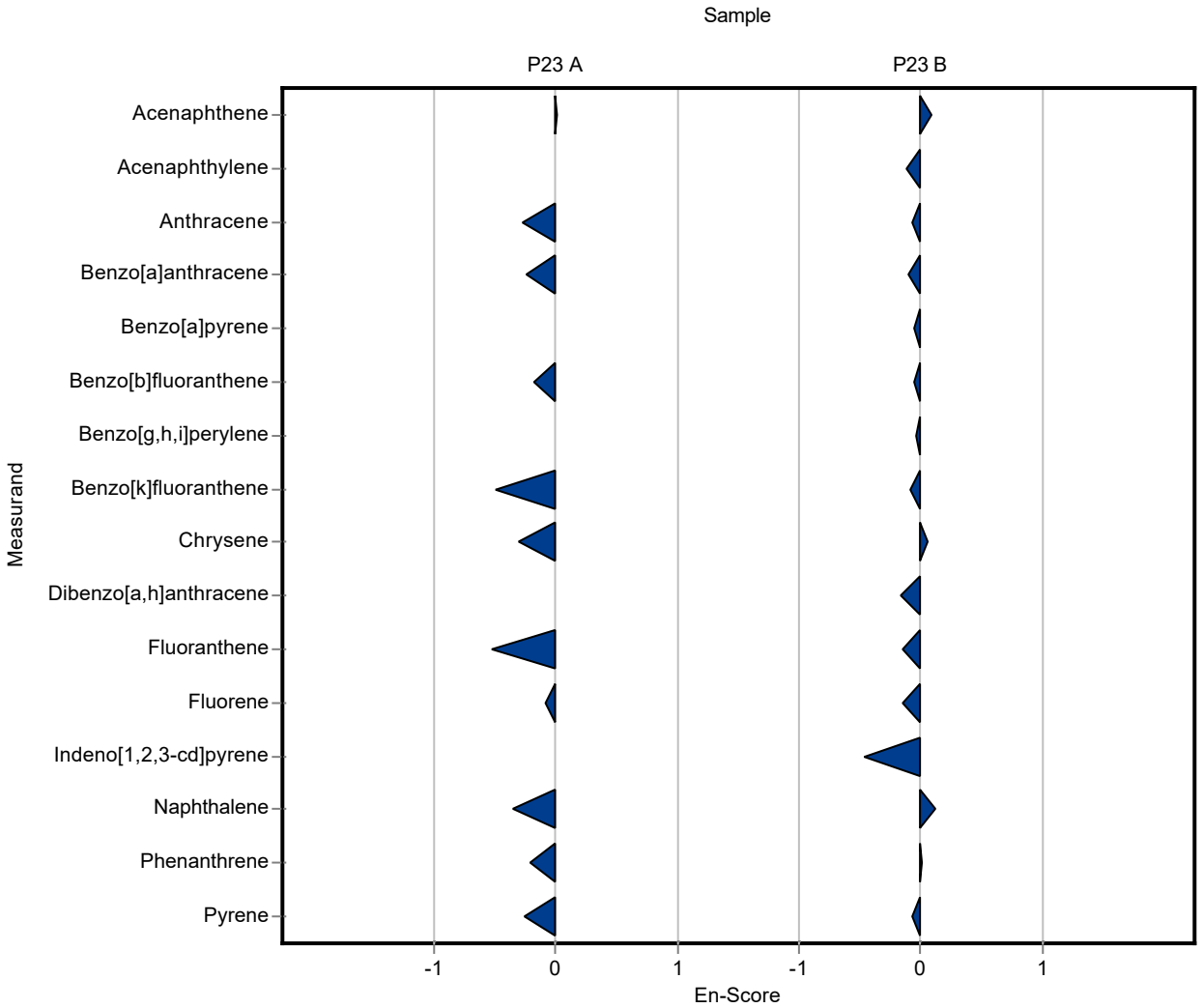
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	142 ± 35	25.7	105	0.09
Acenaphthylene	ng/l	104 ± 5.36	98 ± 24	25	94.2	-0.12
Anthracene	ng/l	171 ± 9.03	166 ± 40	44.5	96.9	-0.06
Benzo[a]anthracene	ng/l	109 ± 6.92	104 ± 25	22.9	95.3	-0.10
Benzo[a]pyrene	ng/l	109 ± 8.57	106 ± 26	26.1	97.5	-0.05
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	92 ± 23	16.1	97	-0.06
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	136 ± 33	44.4	98.1	-0.04
Benzo[k]fluoranthene	ng/l	121 ± 6.99	116 ± 28	31.5	95.7	-0.09
Chrysene	ng/l	141 ± 7.44	145 ± 35	31	103	0.06
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	108 ± 26	35.1	92.4	-0.16

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0005

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	137 ± 33	26.4	93.3	-0.15
Fluorene	ng/l	84.9 ± 4.59	79 ± 19	11.9	93	-0.15
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	62 ± 15	10.7	81.1	-0.47
Naphthalene	ng/l	137 ± 8.6	146 ± 36	28.9	106	0.12
Phenanthrene	ng/l	144 ± 2.72	144 ± 35	21.6	100	0.00
Pyrene	ng/l	144 ± 7.27	140 ± 34	23.1	96.9	-0.07



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<0.05 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	<0.05 (LOQ) ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	<0.05 (LOQ) ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	<0.05 (LOQ) ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	<0.05 (LOQ) ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

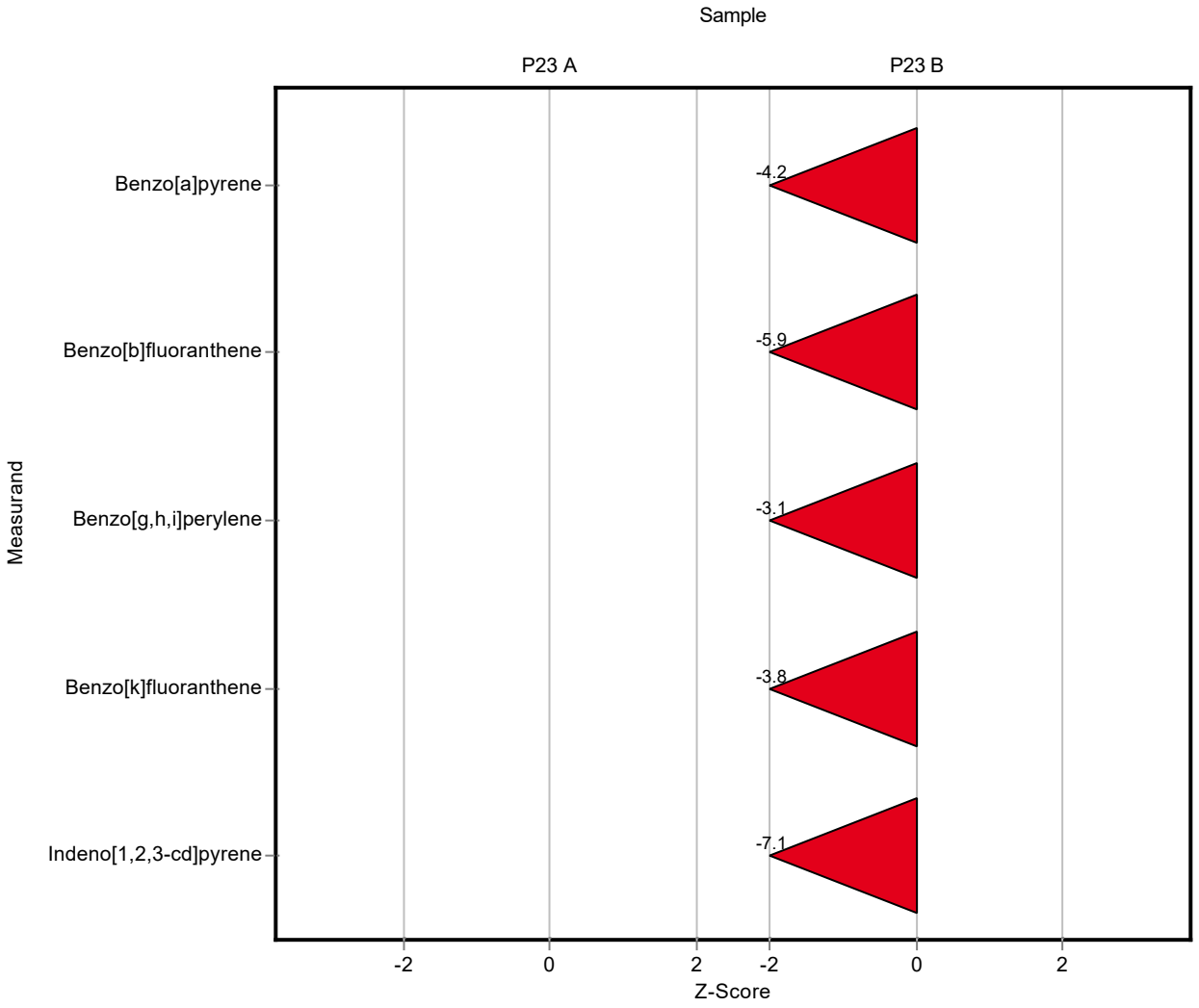
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	0.13 ± 0.039	26.1	0.12	-4.16
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	0.087 ± 0.026	16.1	0.0917	-5.88
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	0.121 ± 0.036	44.4	0.0873	-3.12
Benzo[k]fluoranthene	ng/l	121 ± 6.99	0.11 ± 0.03	31.5	0.0907	-3.84
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0006

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	0.066 ± 0.02	10.7	0.0863	-7.14
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0006

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<0.05 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	<0.05 (LOQ) ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	<0.05 (LOQ) ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	<0.05 (LOQ) ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	<0.05 (LOQ) ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

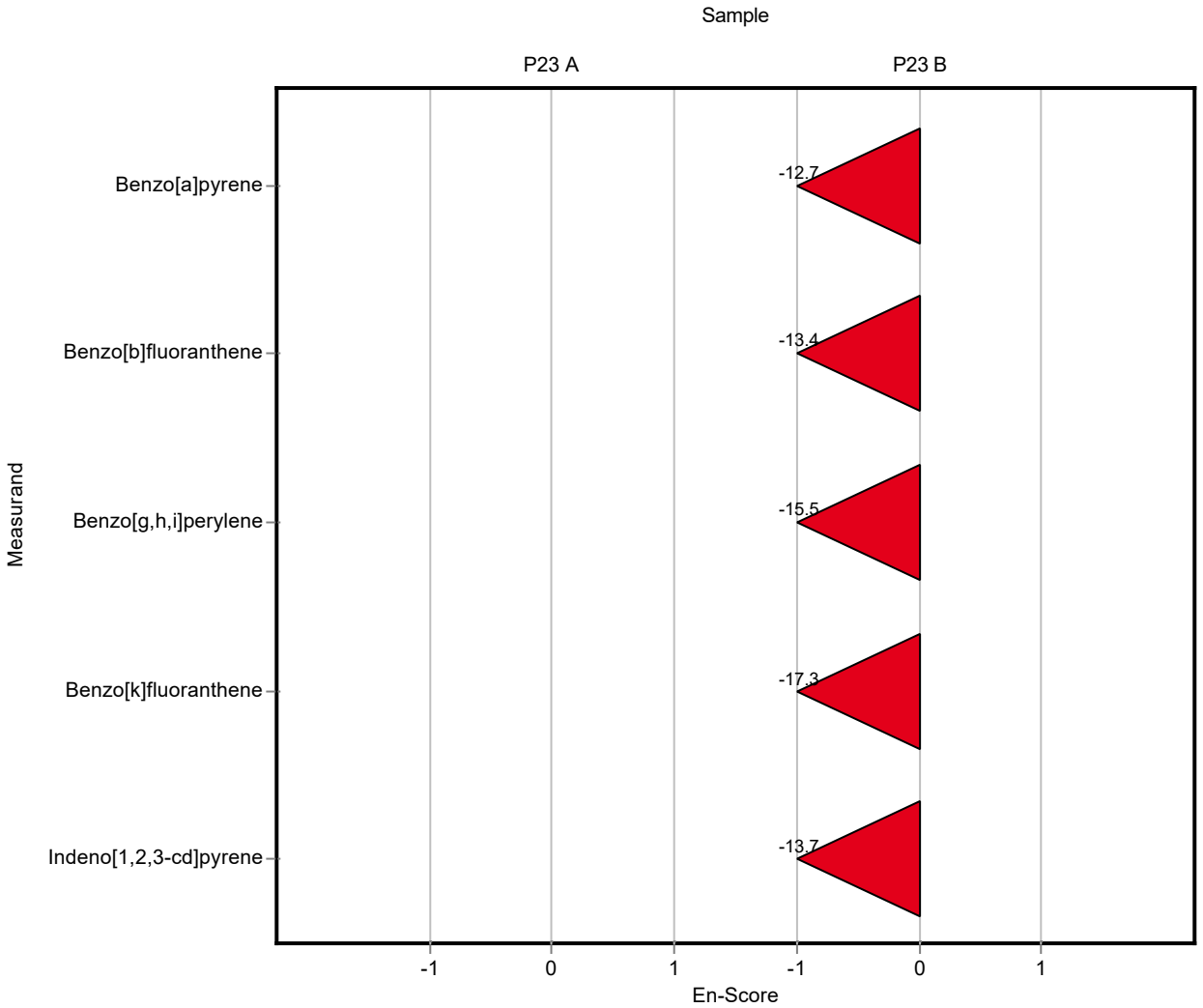
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	0.13 ± 0.039	26.1	0.12	-12.70
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	0.087 ± 0.026	16.1	0.0917	-13.40
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	0.121 ± 0.036	44.4	0.0873	-15.50
Benzo[k]fluoranthene	ng/l	121 ± 6.99	0.11 ± 0.03	31.5	0.0907	-17.30
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0006

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	0.066 ± 0.02	10.7	0.0863	-13.70
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	13.44 ± 5	2.64	96.9	-0.17
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<10 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	13.83 ± 5	3.37	86.1	-0.66
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<10 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	<10 (LOQ) ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	18.03 ± 5	4.5	128	0.88
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15.9 ± 5	3.91	106	0.22
Chrysene	ng/l	12.9 ± 0.849	12.77 ± 5	2.84	99	-0.05
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	21.51 ± 5	4.89	132	1.06
Fluoranthene	ng/l	19.3 ± 1.32	21.24 ± 6	3.48	110	0.55
Fluorene	ng/l	20.9 ± 1.69	24.22 ± 5	2.92	116	1.15
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	19.17 ± 5	3.17	127	1.29
Naphthalene	ng/l	22.7 ± 3.5	19.94 ± 5	4.77	87.7	-0.58
Phenanthrene	ng/l	14.8 ± 0.953	13.82 ± 5	2.21	93.6	-0.43
Pyrene	ng/l	12.6 ± 0.683	11.96 ± 5	2.02	94.8	-0.32

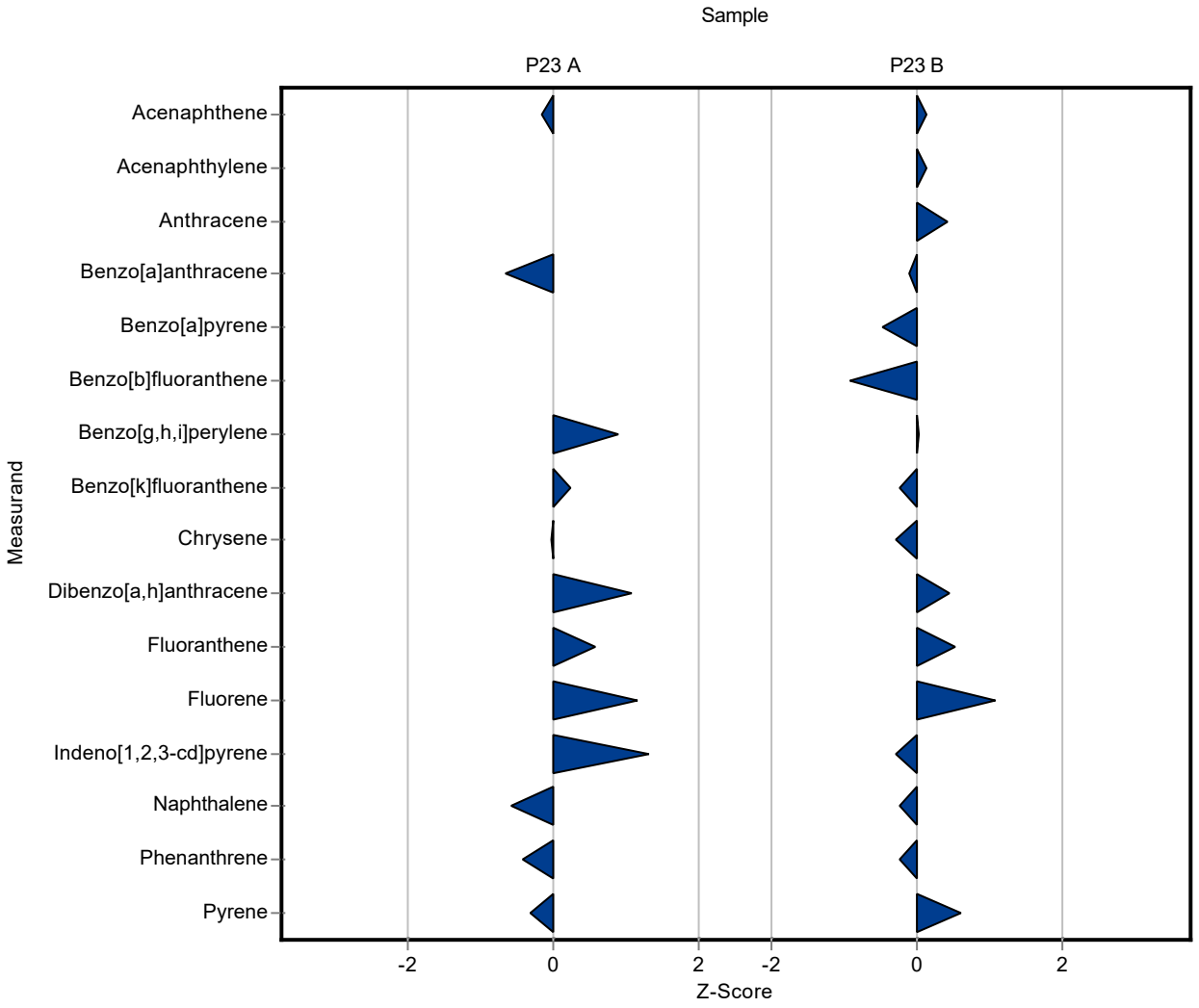
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	138.28 ± 15	25.7	102	0.11
Acenaphthylene	ng/l	104 ± 5.36	106.66 ± 15	25	103	0.11
Anthracene	ng/l	171 ± 9.03	188.98 ± 17	44.5	110	0.40
Benzo[a]anthracene	ng/l	109 ± 6.92	106.59 ± 17	22.9	97.7	-0.11
Benzo[a]pyrene	ng/l	109 ± 8.57	96.24 ± 10	26.1	88.5	-0.48
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	79.64 ± 22	16.1	84	-0.94
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	138.73 ± 22	44.4	100	0.00
Benzo[k]fluoranthene	ng/l	121 ± 6.99	113.67 ± 21	31.5	93.7	-0.24
Chrysene	ng/l	141 ± 7.44	131.52 ± 15	31	93.3	-0.30
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	132.3 ± 18	35.1	113	0.44

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0007

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	160.43 ± 15	26.4	109	0.51
Fluorene	ng/l	84.9 ± 4.59	97.51 ± 13	11.9	115	1.06
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	73.1 ± 17	10.7	95.6	-0.31
Naphthalene	ng/l	137 ± 8.6	130.16 ± 18	28.9	94.7	-0.25
Phenanthrene	ng/l	144 ± 2.72	138.6 ± 19	21.6	96.3	-0.25
Pyrene	ng/l	144 ± 7.27	158 ± 16	23.1	109	0.58



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0007

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	13.44 ± 5	2.64	96.9	-0.04
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<10 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	13.83 ± 5	3.37	86.1	-0.22
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<10 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	<10 (LOQ) ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	18.03 ± 5	4.5	128	0.39
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15.9 ± 5	3.91	106	0.08
Chrysene	ng/l	12.9 ± 0.849	12.77 ± 5	2.84	99	-0.01
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	21.51 ± 5	4.89	132	0.50
Fluoranthene	ng/l	19.3 ± 1.32	21.24 ± 6	3.48	110	0.16
Fluorene	ng/l	20.9 ± 1.69	24.22 ± 5	2.92	116	0.33
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	19.17 ± 5	3.17	127	0.40
Naphthalene	ng/l	22.7 ± 3.5	19.94 ± 5	4.77	87.7	-0.26
Phenanthrene	ng/l	14.8 ± 0.953	13.82 ± 5	2.21	93.6	-0.09
Pyrene	ng/l	12.6 ± 0.683	11.96 ± 5	2.02	94.8	-0.07

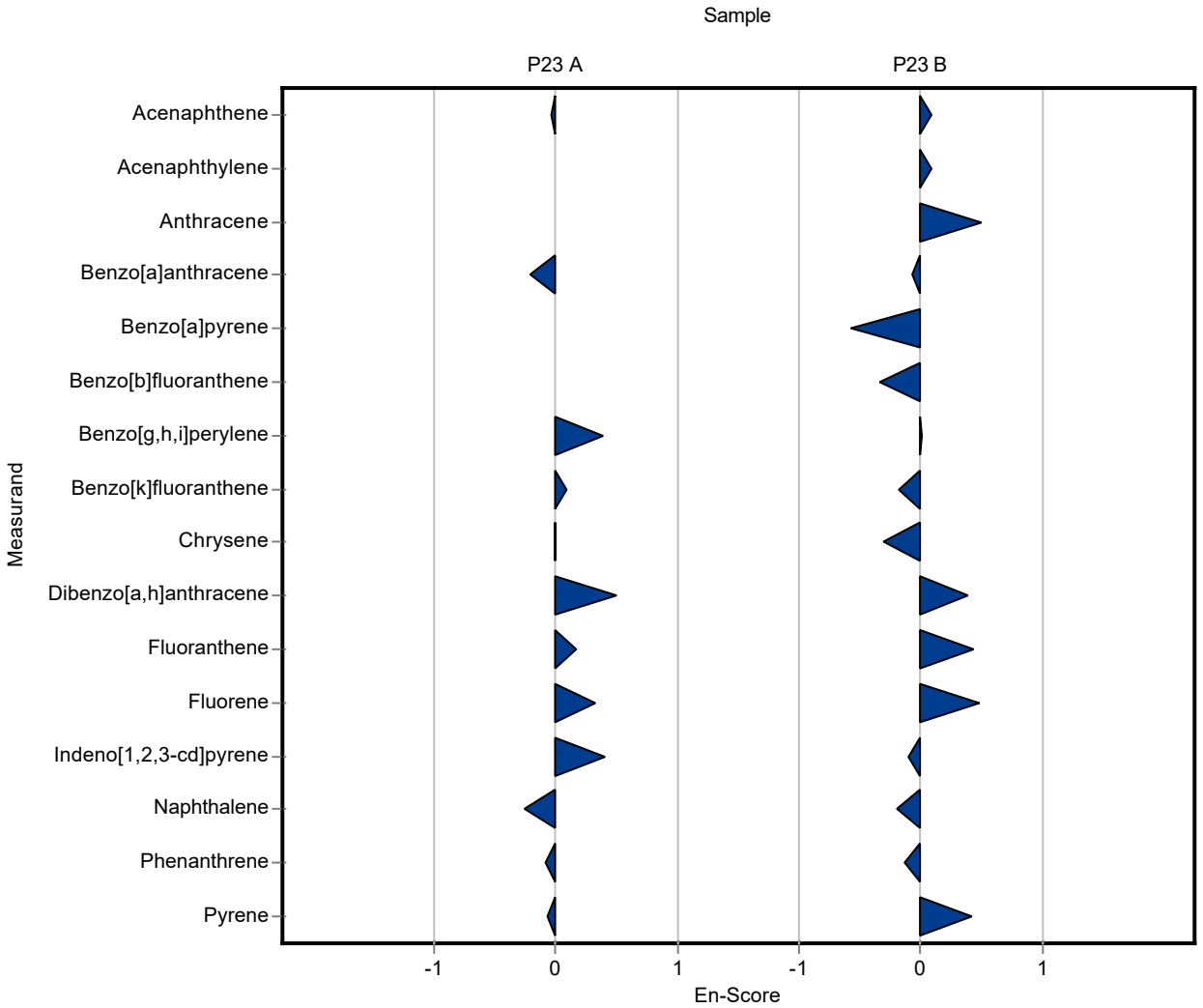
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	138.28 ± 15	25.7	102	0.09
Acenaphthylene	ng/l	104 ± 5.36	106.66 ± 15	25	103	0.09
Anthracene	ng/l	171 ± 9.03	188.98 ± 17	44.5	110	0.51
Benzo[a]anthracene	ng/l	109 ± 6.92	106.59 ± 17	22.9	97.7	-0.07
Benzo[a]pyrene	ng/l	109 ± 8.57	96.24 ± 10	26.1	88.5	-0.57
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	79.64 ± 22	16.1	84	-0.34
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	138.73 ± 22	44.4	100	0.00
Benzo[k]fluoranthene	ng/l	121 ± 6.99	113.67 ± 21	31.5	93.7	-0.18
Chrysene	ng/l	141 ± 7.44	131.52 ± 15	31	93.3	-0.30
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	132.3 ± 18	35.1	113	0.39

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0007

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	160.43 ± 15	26.4	109	0.44
Fluorene	ng/l	84.9 ± 4.59	97.51 ± 13	11.9	115	0.48
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	73.1 ± 17	10.7	95.6	-0.10
Naphthalene	ng/l	137 ± 8.6	130.16 ± 18	28.9	94.7	-0.20
Phenanthrene	ng/l	144 ± 2.72	138.6 ± 19	21.6	96.3	-0.14
Pyrene	ng/l	144 ± 7.27	158 ± 16	23.1	109	0.41



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	- ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	- ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	- ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	- ± -	26.1	-	-
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	- ± -	16.1	-	-
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	- ± -	31.5	-	-
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0008

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0008

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	- ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	- ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	- ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	- ± -	26.1	-	-
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	- ± -	16.1	-	-
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	- ± -	31.5	-	-
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0008

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	14 ± 3	2.64	101	0.05
Acenaphthylene	ng/l	10.8 ± 0.79	22 ± 4	2.59	204	4.33
Anthracene	ng/l	12.6 ± 0.723	13 ± 3	3.29	103	0.11
Benzo[a]anthracene	ng/l	16.1 ± 1.46	16 ± 3	3.37	99.7	-0.02
Benzo[a]pyrene	ng/l	12.6 ± 2.25	15 ± 3	3.03	119	0.78
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	16 ± 3	2.64	103	0.18
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	14 ± 3	4.5	99.5	-0.02
Benzo[k]fluoranthene	ng/l	15 ± 1.5	14 ± 3	3.91	93.1	-0.27
Chrysene	ng/l	12.9 ± 0.849	13 ± 3	2.84	101	0.04
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	17 ± 3	4.89	104	0.14
Fluoranthene	ng/l	19.3 ± 1.32	19 ± 4	3.48	98.4	-0.09
Fluorene	ng/l	20.9 ± 1.69	19 ± 4	2.92	91.1	-0.64
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	15 ± 3	3.17	99.4	-0.03
Naphthalene	ng/l	22.7 ± 3.5	25 ± 5	4.77	110	0.47
Phenanthrene	ng/l	14.8 ± 0.953	15 ± 3	2.21	102	0.11
Pyrene	ng/l	12.6 ± 0.683	20 ± 4	2.02	159	3.66

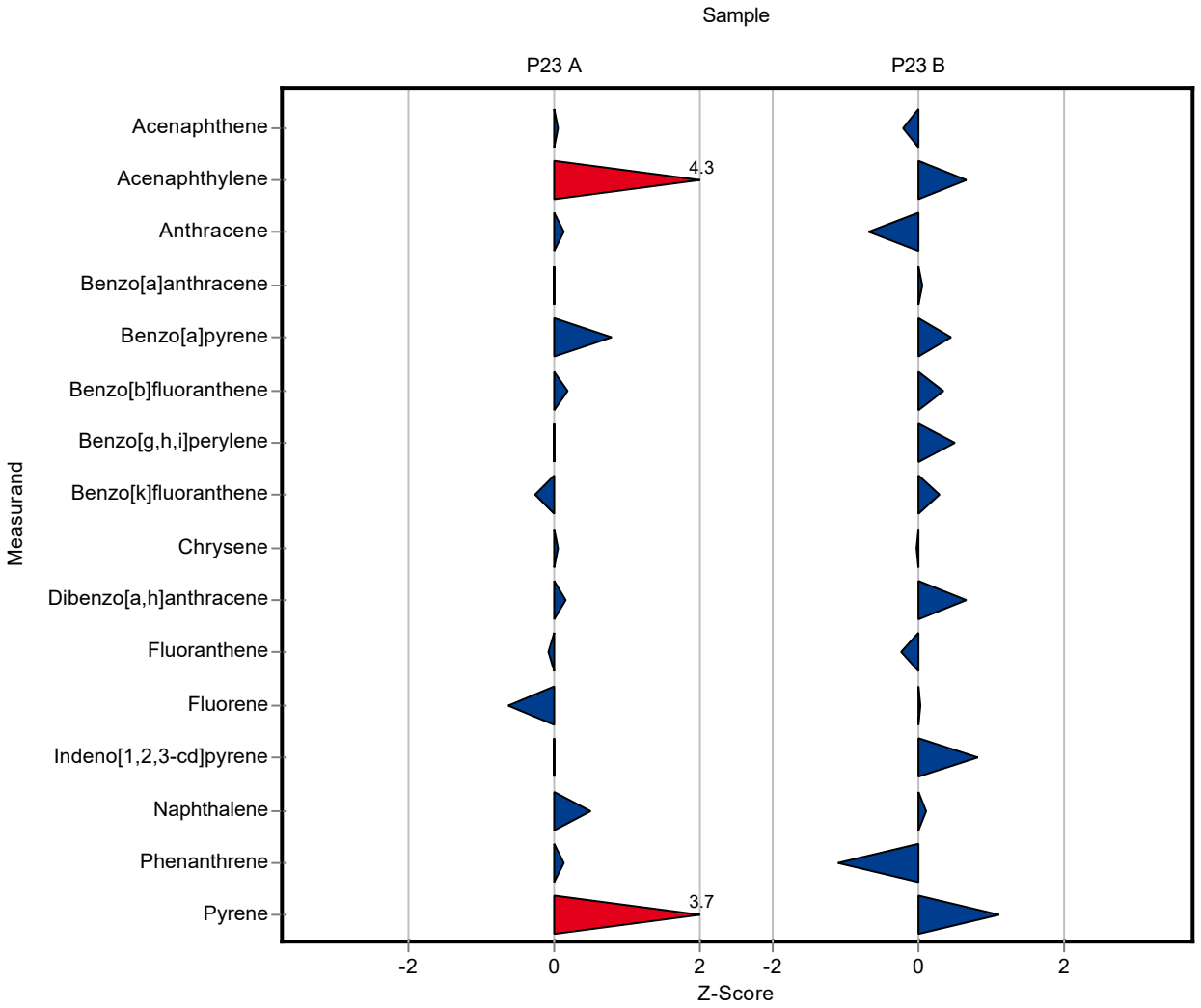
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	130 ± 26	25.7	96	-0.21
Acenaphthylene	ng/l	104 ± 5.36	120 ± 24	25	115	0.64
Anthracene	ng/l	171 ± 9.03	140 ± 28	44.5	81.8	-0.70
Benzo[a]anthracene	ng/l	109 ± 6.92	110 ± 22	22.9	101	0.04
Benzo[a]pyrene	ng/l	109 ± 8.57	120 ± 24	26.1	110	0.43
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	100 ± 20	16.1	105	0.32
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	160 ± 32	44.4	115	0.48
Benzo[k]fluoranthene	ng/l	121 ± 6.99	130 ± 26	31.5	107	0.28
Chrysene	ng/l	141 ± 7.44	140 ± 28	31	99.3	-0.03
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	140 ± 28	35.1	120	0.66

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0009

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	140 ± 28	26.4	95.3	-0.26
Fluorene	ng/l	84.9 ± 4.59	85 ± 17	11.9	100	0.01
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	85 ± 17	10.7	111	0.80
Naphthalene	ng/l	137 ± 8.6	140 ± 28	28.9	102	0.09
Phenanthrene	ng/l	144 ± 2.72	120 ± 24	21.6	83.4	-1.11
Pyrene	ng/l	144 ± 7.27	170 ± 34	23.1	118	1.10



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0009

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	14 ± 3	2.64	101	0.02
Acenaphthylene	ng/l	10.8 ± 0.79	22 ± 4	2.59	204	1.39
Anthracene	ng/l	12.6 ± 0.723	13 ± 3	3.29	103	0.06
Benzo[a]anthracene	ng/l	16.1 ± 1.46	16 ± 3	3.37	99.7	-0.01
Benzo[a]pyrene	ng/l	12.6 ± 2.25	15 ± 3	3.03	119	0.37
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	16 ± 3	2.64	103	0.08
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	14 ± 3	4.5	99.5	-0.01
Benzo[k]fluoranthene	ng/l	15 ± 1.5	14 ± 3	3.91	93.1	-0.17
Chrysene	ng/l	12.9 ± 0.849	13 ± 3	2.84	101	0.02
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	17 ± 3	4.89	104	0.11
Fluoranthene	ng/l	19.3 ± 1.32	19 ± 4	3.48	98.4	-0.04
Fluorene	ng/l	20.9 ± 1.69	19 ± 4	2.92	91.1	-0.23
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	15 ± 3	3.17	99.4	-0.01
Naphthalene	ng/l	22.7 ± 3.5	25 ± 5	4.77	110	0.21
Phenanthrene	ng/l	14.8 ± 0.953	15 ± 3	2.21	102	0.04
Pyrene	ng/l	12.6 ± 0.683	20 ± 4	2.02	159	0.92

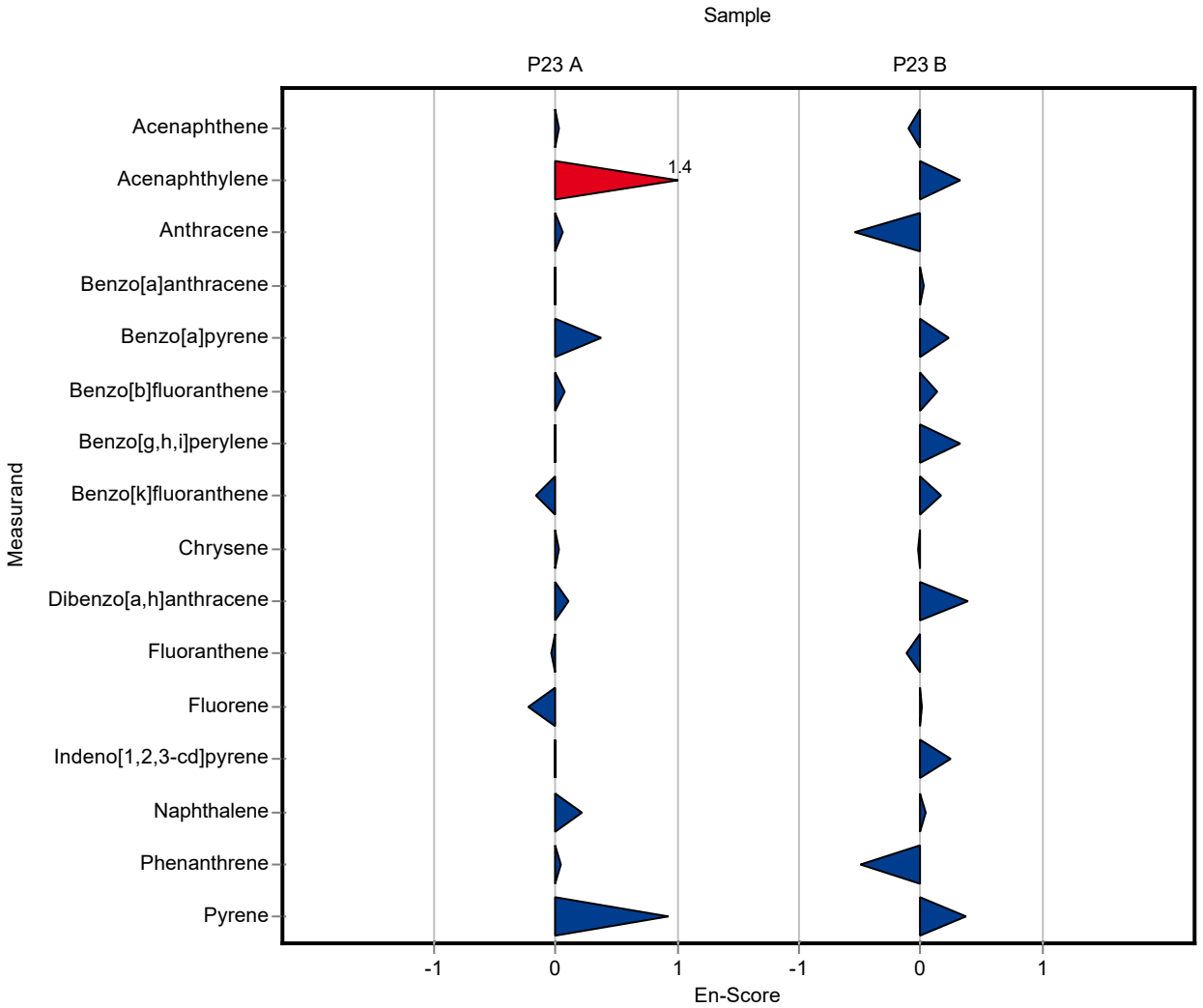
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	130 ± 26	25.7	96	-0.10
Acenaphthylene	ng/l	104 ± 5.36	120 ± 24	25	115	0.33
Anthracene	ng/l	171 ± 9.03	140 ± 28	44.5	81.8	-0.55
Benzo[a]anthracene	ng/l	109 ± 6.92	110 ± 22	22.9	101	0.02
Benzo[a]pyrene	ng/l	109 ± 8.57	120 ± 24	26.1	110	0.23
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	100 ± 20	16.1	105	0.13
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	160 ± 32	44.4	115	0.33
Benzo[k]fluoranthene	ng/l	121 ± 6.99	130 ± 26	31.5	107	0.17
Chrysene	ng/l	141 ± 7.44	140 ± 28	31	99.3	-0.02
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	140 ± 28	35.1	120	0.39

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0009

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	140 ± 28	26.4	95.3	-0.12
Fluorene	ng/l	84.9 ± 4.59	85 ± 17	11.9	100	0.00
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	85 ± 17	10.7	111	0.25
Naphthalene	ng/l	137 ± 8.6	140 ± 28	28.9	102	0.05
Phenanthrene	ng/l	144 ± 2.72	120 ± 24	21.6	83.4	-0.50
Pyrene	ng/l	144 ± 7.27	170 ± 34	23.1	118	0.37



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	15 ± 2	2.64	108	0.43
Acenaphthylene	ng/l	10.8 ± 0.79	11 ± 2	2.59	102	0.08
Anthracene	ng/l	12.6 ± 0.723	14 ± 2	3.29	111	0.42
Benzo[a]anthracene	ng/l	16.1 ± 1.46	16 ± 4	3.37	99.7	-0.02
Benzo[a]pyrene	ng/l	12.6 ± 2.25	13 ± 3	3.03	103	0.12
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	14 ± 4	2.64	90.2	-0.58
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	13 ± 2	4.5	92.4	-0.24
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15 ± 2	3.91	99.7	-0.01
Chrysene	ng/l	12.9 ± 0.849	14 ± 4	2.84	109	0.39
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	15 ± 4	4.89	92	-0.27
Fluoranthene	ng/l	19.3 ± 1.32	18 ± 5	3.48	93.2	-0.38
Fluorene	ng/l	20.9 ± 1.69	22 ± 3	2.92	105	0.39
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	13 ± 3	3.17	86.2	-0.66
Naphthalene	ng/l	22.7 ± 3.5	25 ± 4	4.77	110	0.47
Phenanthrene	ng/l	14.8 ± 0.953	15 ± 2	2.21	102	0.11
Pyrene	ng/l	12.6 ± 0.683	14 ± 3	2.02	111	0.69

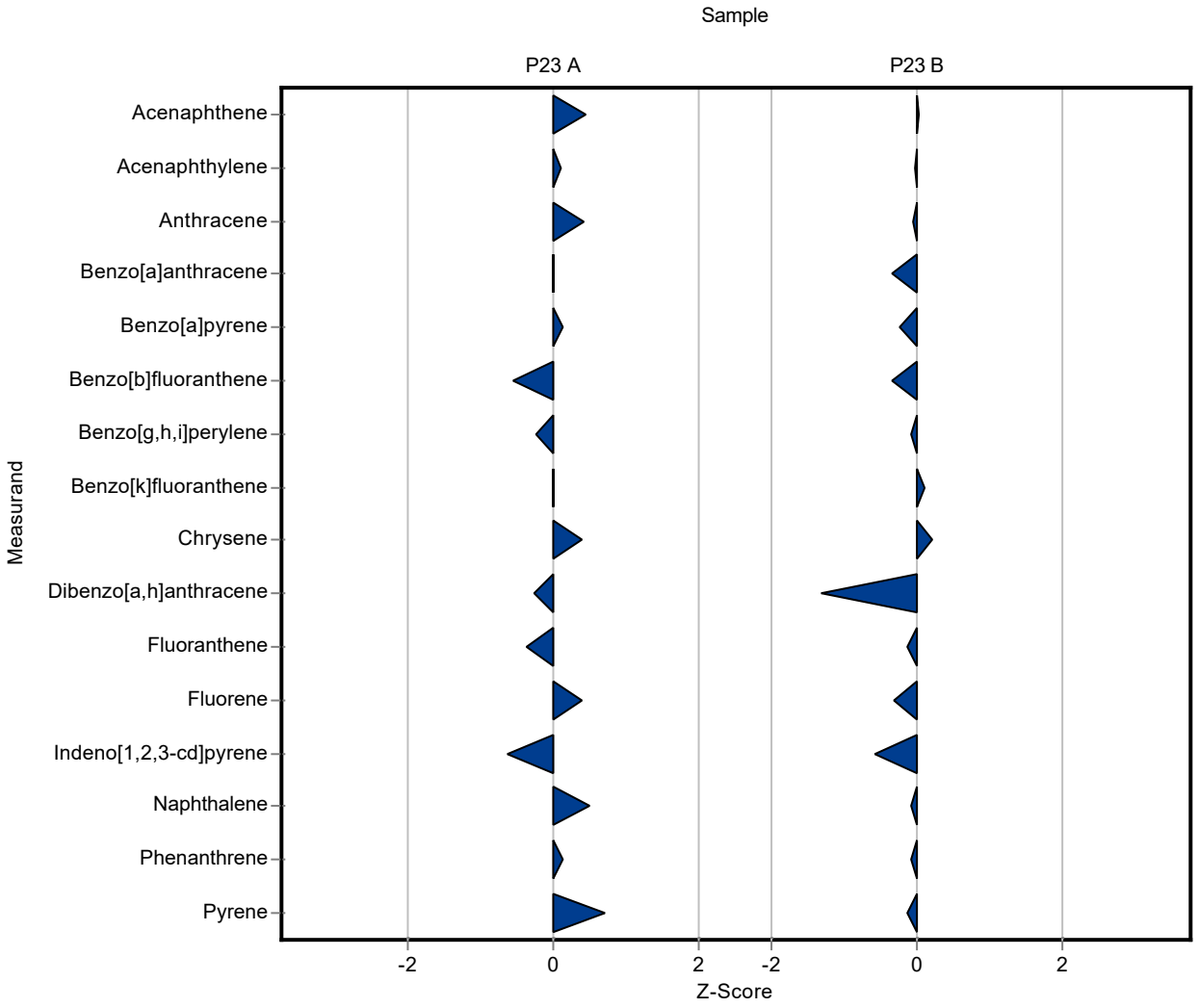
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	136 ± 20	25.7	100	0.02
Acenaphthylene	ng/l	104 ± 5.36	103 ± 15	25	99.1	-0.04
Anthracene	ng/l	171 ± 9.03	168 ± 25	44.5	98.1	-0.07
Benzo[a]anthracene	ng/l	109 ± 6.92	101 ± 25	22.9	92.6	-0.35
Benzo[a]pyrene	ng/l	109 ± 8.57	102 ± 26	26.1	93.8	-0.26
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	89 ± 22	16.1	93.8	-0.36
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	135 ± 37	44.4	97.4	-0.08
Benzo[k]fluoranthene	ng/l	121 ± 6.99	124 ± 19	31.5	102	0.09
Chrysene	ng/l	141 ± 7.44	147 ± 37	31	104	0.20
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	70 ± 34	35.1	59.9	-1.34

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0010

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	143 ± 36	26.4	97.3	-0.15
Fluorene	ng/l	84.9 ± 4.59	81 ± 12	11.9	95.4	-0.33
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	70 ± 17	10.7	91.6	-0.60
Naphthalene	ng/l	137 ± 8.6	135 ± 20	28.9	98.3	-0.08
Phenanthrene	ng/l	144 ± 2.72	142 ± 21	21.6	98.7	-0.09
Pyrene	ng/l	144 ± 7.27	141 ± 35	23.1	97.6	-0.15



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0010

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	15 ± 2	2.64	108	0.28
Acenaphthylene	ng/l	10.8 ± 0.79	11 ± 2	2.59	102	0.05
Anthracene	ng/l	12.6 ± 0.723	14 ± 2	3.29	111	0.34
Benzo[a]anthracene	ng/l	16.1 ± 1.46	16 ± 4	3.37	99.7	-0.01
Benzo[a]pyrene	ng/l	12.6 ± 2.25	13 ± 3	3.03	103	0.06
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	14 ± 4	2.64	90.2	-0.18
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	13 ± 2	4.5	92.4	-0.25
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15 ± 2	3.91	99.7	-0.01
Chrysene	ng/l	12.9 ± 0.849	14 ± 4	2.84	109	0.14
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	15 ± 4	4.89	92	-0.15
Fluoranthene	ng/l	19.3 ± 1.32	18 ± 5	3.48	93.2	-0.13
Fluorene	ng/l	20.9 ± 1.69	22 ± 3	2.92	105	0.18
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	13 ± 3	3.17	86.2	-0.33
Naphthalene	ng/l	22.7 ± 3.5	25 ± 4	4.77	110	0.26
Phenanthrene	ng/l	14.8 ± 0.953	15 ± 2	2.21	102	0.06
Pyrene	ng/l	12.6 ± 0.683	14 ± 3	2.02	111	0.23

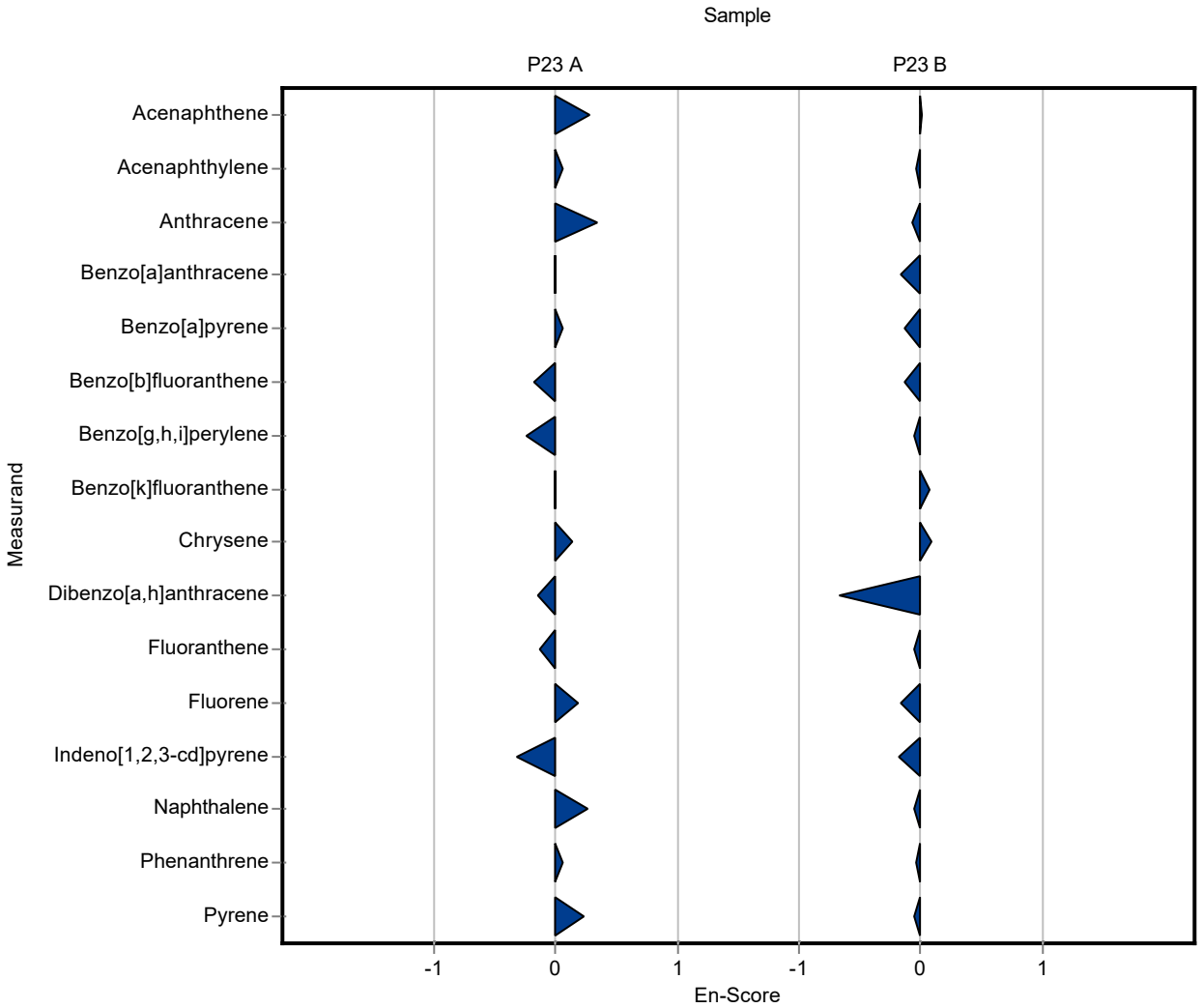
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	136 ± 20	25.7	100	0.01
Acenaphthylene	ng/l	104 ± 5.36	103 ± 15	25	99.1	-0.03
Anthracene	ng/l	171 ± 9.03	168 ± 25	44.5	98.1	-0.06
Benzo[a]anthracene	ng/l	109 ± 6.92	101 ± 25	22.9	92.6	-0.16
Benzo[a]pyrene	ng/l	109 ± 8.57	102 ± 26	26.1	93.8	-0.13
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	89 ± 22	16.1	93.8	-0.13
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	135 ± 37	44.4	97.4	-0.05
Benzo[k]fluoranthene	ng/l	121 ± 6.99	124 ± 19	31.5	102	0.07
Chrysene	ng/l	141 ± 7.44	147 ± 37	31	104	0.08
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	70 ± 34	35.1	59.9	-0.67

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0010

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	143 ± 36	26.4	97.3	-0.05
Fluorene	ng/l	84.9 ± 4.59	81 ± 12	11.9	95.4	-0.16
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	70 ± 17	10.7	91.6	-0.19
Naphthalene	ng/l	137 ± 8.6	135 ± 20	28.9	98.3	-0.06
Phenanthrene	ng/l	144 ± 2.72	142 ± 21	21.6	98.7	-0.05
Pyrene	ng/l	144 ± 7.27	141 ± 35	23.1	97.6	-0.05



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	4.31 ± 0.431	2.64	31.1	-3.63
Acenaphthylene	ng/l	10.8 ± 0.79	11.6 ± 1.16	2.59	108	0.31
Anthracene	ng/l	12.6 ± 0.723	3.79 ± 0.379	3.29	30	-2.69
Benzo[a]anthracene	ng/l	16.1 ± 1.46	4.72 ± 0.472	3.37	29.4	-3.36
Benzo[a]pyrene	ng/l	12.6 ± 2.25	3.71 ± 0.371	3.03	29.3	-2.94
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	5.53 ± 0.553	2.64	35.6	-3.79
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	5.06 ± 0.506	4.5	36	-2.00
Benzo[k]fluoranthene	ng/l	15 ± 1.5	4.58 ± 0.458	3.91	30.4	-2.68
Chrysene	ng/l	12.9 ± 0.849	4.18 ± 0.418	2.84	32.4	-3.07
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	5.14 ± 0.514	4.89	31.5	-2.28
Fluoranthene	ng/l	19.3 ± 1.32	5.61 ± 0.561	3.48	29	-3.94
Fluorene	ng/l	20.9 ± 1.69	7.05 ± 0.705	2.92	33.8	-4.73
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	4.46 ± 0.446	3.17	29.6	-3.35
Naphthalene	ng/l	22.7 ± 3.5	13.1 ± 1.31	4.77	57.6	-2.02
Phenanthrene	ng/l	14.8 ± 0.953	11.5 ± 1.15	2.21	77.9	-1.47
Pyrene	ng/l	12.6 ± 0.683	5.63 ± 0.563	2.02	44.6	-3.46

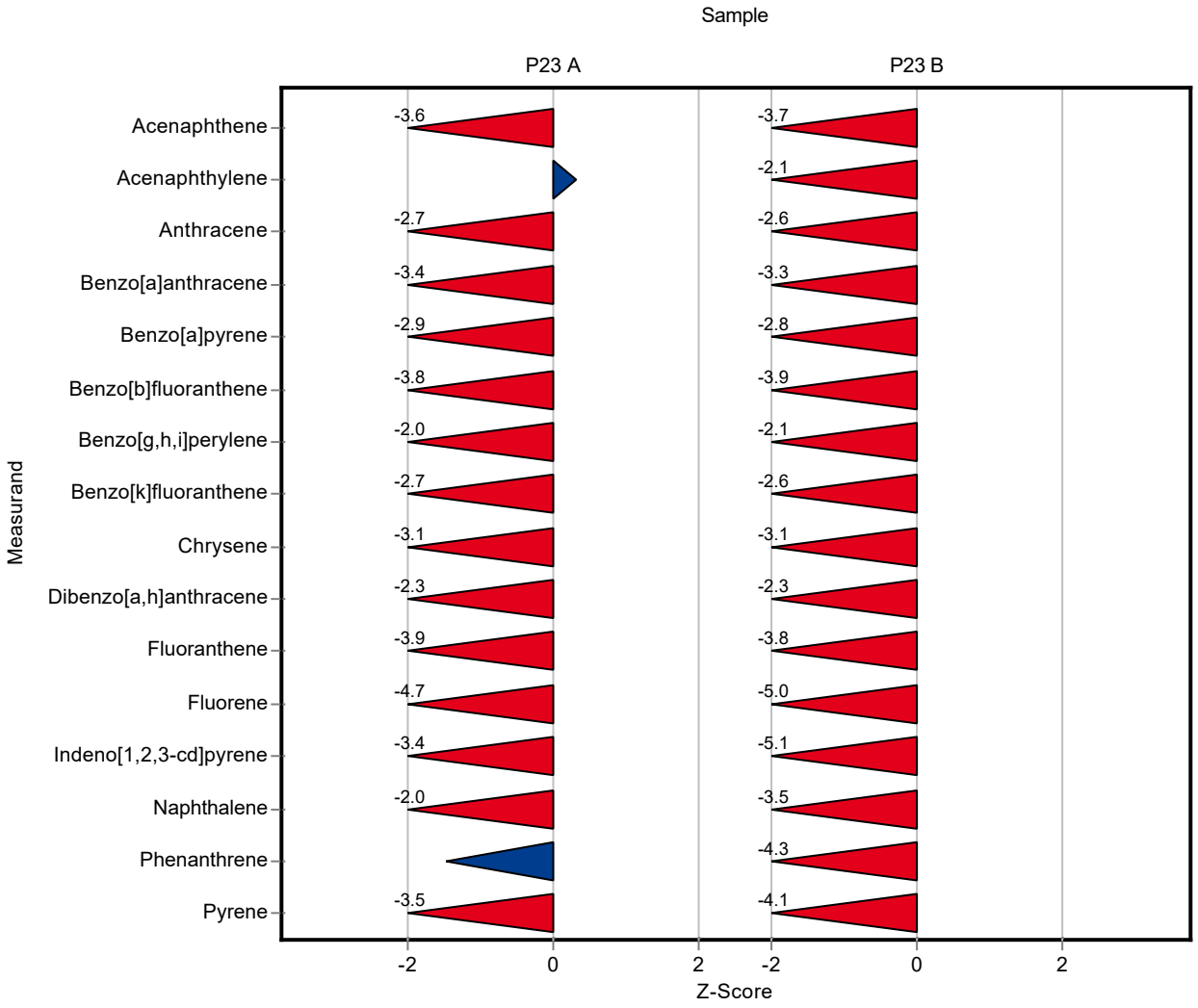
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	40.2 ± 4.02	25.7	29.7	-3.70
Acenaphthylene	ng/l	104 ± 5.36	51.3 ± 5.13	25	49.3	-2.11
Anthracene	ng/l	171 ± 9.03	53.8 ± 5.38	44.5	31.4	-2.64
Benzo[a]anthracene	ng/l	109 ± 6.92	34.4 ± 3.44	22.9	31.5	-3.26
Benzo[a]pyrene	ng/l	109 ± 8.57	35.7 ± 3.57	26.1	32.8	-2.80
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	32.2 ± 3.22	16.1	33.9	-3.89
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	45.9 ± 4.59	44.4	33.1	-2.09
Benzo[k]fluoranthene	ng/l	121 ± 6.99	38 ± 3.8	31.5	31.3	-2.64
Chrysene	ng/l	141 ± 7.44	43.3 ± 4.33	31	30.7	-3.15
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	37.5 ± 3.75	35.1	32.1	-2.26

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0011

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	47.5 ± 4.75	26.4	32.3	-3.76
Fluorene	ng/l	84.9 ± 4.59	24.9 ± 2.49	11.9	29.3	-5.05
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	21.6 ± 2.16	10.7	28.3	-5.12
Naphthalene	ng/l	137 ± 8.6	36.4 ± 3.64	28.9	26.5	-3.50
Phenanthrene	ng/l	144 ± 2.72	50.3 ± 5.03	21.6	35	-4.34
Pyrene	ng/l	144 ± 7.27	48.7 ± 4.87	23.1	33.7	-4.14



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0011

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	4.31 ± 0.431	2.64	31.1	-9.34
Acenaphthylene	ng/l	10.8 ± 0.79	11.6 ± 1.16	2.59	108	0.33
Anthracene	ng/l	12.6 ± 0.723	3.79 ± 0.379	3.29	30	-8.44
Benzo[a]anthracene	ng/l	16.1 ± 1.46	4.72 ± 0.472	3.37	29.4	-6.52
Benzo[a]pyrene	ng/l	12.6 ± 2.25	3.71 ± 0.371	3.03	29.3	-3.78
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	5.53 ± 0.553	2.64	35.6	-4.18
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	5.06 ± 0.506	4.5	36	-5.08
Benzo[k]fluoranthene	ng/l	15 ± 1.5	4.58 ± 0.458	3.91	30.4	-5.96
Chrysene	ng/l	12.9 ± 0.849	4.18 ± 0.418	2.84	32.4	-7.32
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	5.14 ± 0.514	4.89	31.5	-4.04
Fluoranthene	ng/l	19.3 ± 1.32	5.61 ± 0.561	3.48	29	-7.90
Fluorene	ng/l	20.9 ± 1.69	7.05 ± 0.705	2.92	33.8	-6.28
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	4.46 ± 0.446	3.17	29.6	-5.14
Naphthalene	ng/l	22.7 ± 3.5	13.1 ± 1.31	4.77	57.6	-2.20
Phenanthrene	ng/l	14.8 ± 0.953	11.5 ± 1.15	2.21	77.9	-1.31
Pyrene	ng/l	12.6 ± 0.683	5.63 ± 0.563	2.02	44.6	-5.30

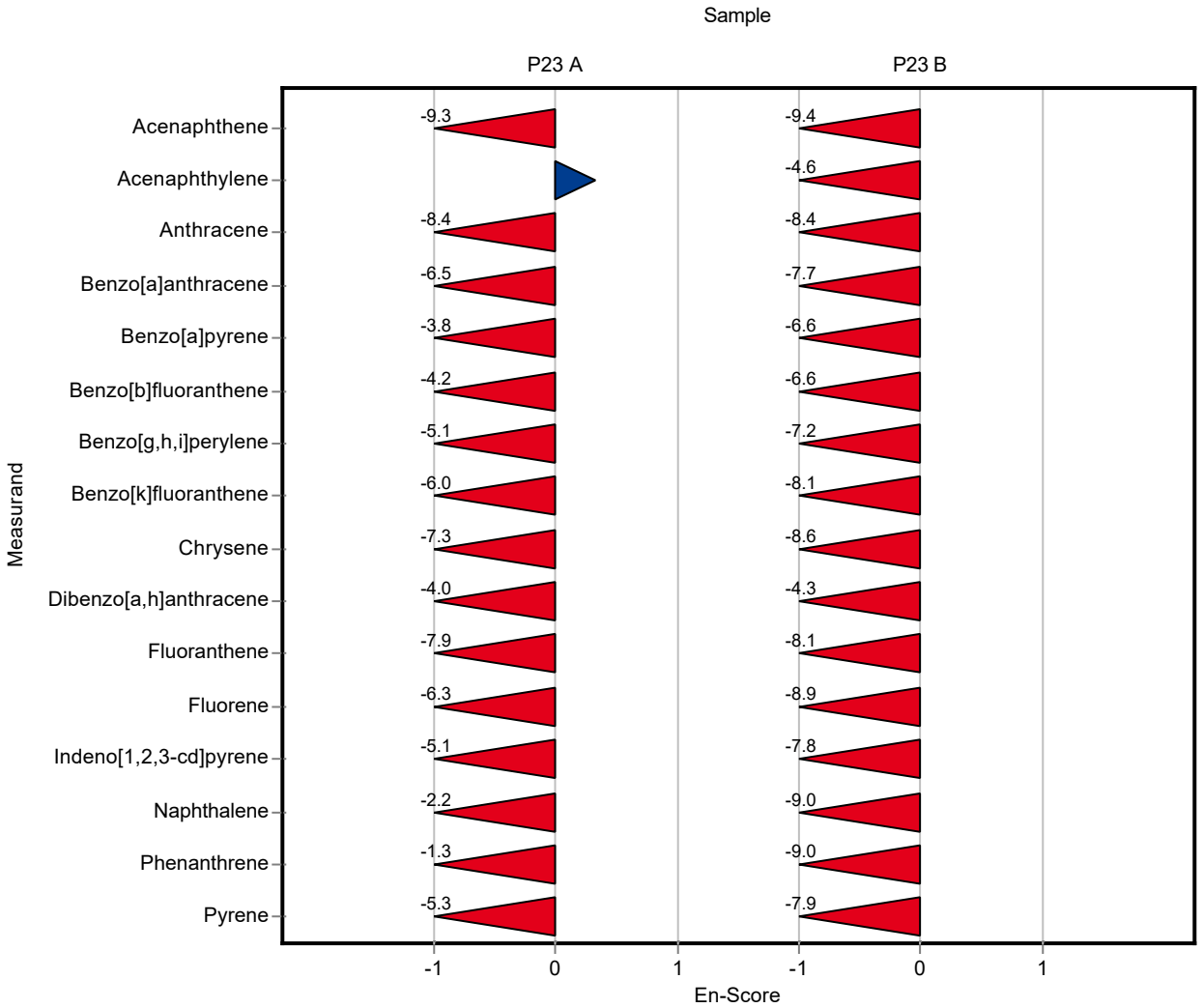
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	40.2 ± 4.02	25.7	29.7	-9.37
Acenaphthylene	ng/l	104 ± 5.36	51.3 ± 5.13	25	49.3	-4.55
Anthracene	ng/l	171 ± 9.03	53.8 ± 5.38	44.5	31.4	-8.36
Benzo[a]anthracene	ng/l	109 ± 6.92	34.4 ± 3.44	22.9	31.5	-7.65
Benzo[a]pyrene	ng/l	109 ± 8.57	35.7 ± 3.57	26.1	32.8	-6.55
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	32.2 ± 3.22	16.1	33.9	-6.56
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	45.9 ± 4.59	44.4	33.1	-7.23
Benzo[k]fluoranthene	ng/l	121 ± 6.99	38 ± 3.8	31.5	31.3	-8.06
Chrysene	ng/l	141 ± 7.44	43.3 ± 4.33	31	30.7	-8.55
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	37.5 ± 3.75	35.1	32.1	-4.31

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0011

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	47.5 ± 4.75	26.4	32.3	-8.10
Fluorene	ng/l	84.9 ± 4.59	24.9 ± 2.49	11.9	29.3	-8.86
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	21.6 ± 2.16	10.7	28.3	-7.79
Naphthalene	ng/l	137 ± 8.6	36.4 ± 3.64	28.9	26.5	-8.96
Phenanthrene	ng/l	144 ± 2.72	50.3 ± 5.03	21.6	35	-8.98
Pyrene	ng/l	144 ± 7.27	48.7 ± 4.87	23.1	33.7	-7.88



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	<20 (LOQ) ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	<100 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<20 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	<20 (LOQ) ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	14.6 ± 5.8	3.03	115	0.64
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	16 ± 2.6	2.64	103	0.18
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	18.7 ± 6.9	4.5	133	1.03
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15.4 ± 3.9	3.91	102	0.09
Chrysene	ng/l	12.9 ± 0.849	<20 (LOQ) ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	22.7 ± 4.3	4.89	139	1.31
Fluoranthene	ng/l	19.3 ± 1.32	<10 (LOQ) ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	<20 (LOQ) ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	59.6 ± 35.2	3.17	395	14.10
Naphthalene	ng/l	22.7 ± 3.5	<20 (LOQ) ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	<50 (LOQ) ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	<50 (LOQ) ± -	2.02	-	-

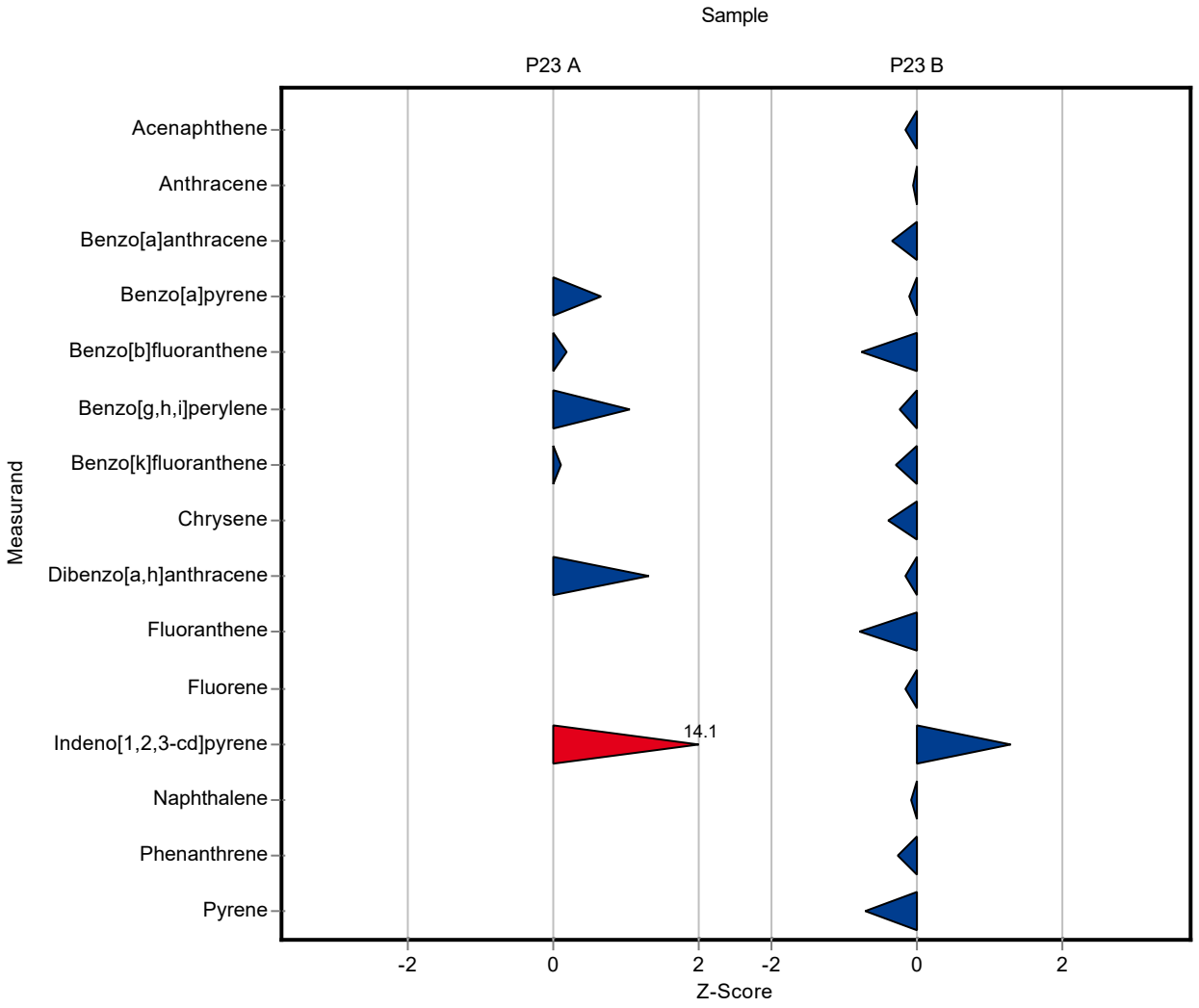
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	131 ± 46	25.7	96.7	-0.17
Acenaphthylene	ng/l	104 ± 5.36	<100 (LOQ) ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	168 ± 18	44.5	98.1	-0.07
Benzo[a]anthracene	ng/l	109 ± 6.92	101 ± 11	22.9	92.6	-0.35
Benzo[a]pyrene	ng/l	109 ± 8.57	106 ± 42	26.1	97.5	-0.11
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	82.3 ± 13.2	16.1	86.8	-0.78
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	127 ± 47	44.4	91.6	-0.26
Benzo[k]fluoranthene	ng/l	121 ± 6.99	112 ± 28	31.5	92.4	-0.29
Chrysene	ng/l	141 ± 7.44	128 ± 73	31	90.8	-0.42
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	111 ± 21	35.1	94.9	-0.17

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0012

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	126 ± 42	26.4	85.8	-0.79
Fluorene	ng/l	84.9 ± 4.59	82.8 ± 38.9	11.9	97.5	-0.18
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	90.2 ± 53.2	10.7	118	1.29
Naphthalene	ng/l	137 ± 8.6	135 ± 35	28.9	98.3	-0.08
Phenanthrene	ng/l	144 ± 2.72	138 ± 97	21.6	95.9	-0.27
Pyrene	ng/l	144 ± 7.27	128 ± 58	23.1	88.6	-0.71



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0012

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	<20 (LOQ) ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	<100 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<20 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	<20 (LOQ) ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	14.6 ± 5.8	3.03	115	0.17
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	16 ± 2.6	2.64	103	0.09
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	18.7 ± 6.9	4.5	133	0.33
Benzo[k]fluoranthene	ng/l	15 ± 1.5	15.4 ± 3.9	3.91	102	0.05
Chrysene	ng/l	12.9 ± 0.849	<20 (LOQ) ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	22.7 ± 4.3	4.89	139	0.71
Fluoranthene	ng/l	19.3 ± 1.32	<10 (LOQ) ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	<20 (LOQ) ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	59.6 ± 35.2	3.17	395	0.63
Naphthalene	ng/l	22.7 ± 3.5	<20 (LOQ) ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	<50 (LOQ) ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	<50 (LOQ) ± -	2.02	-	-

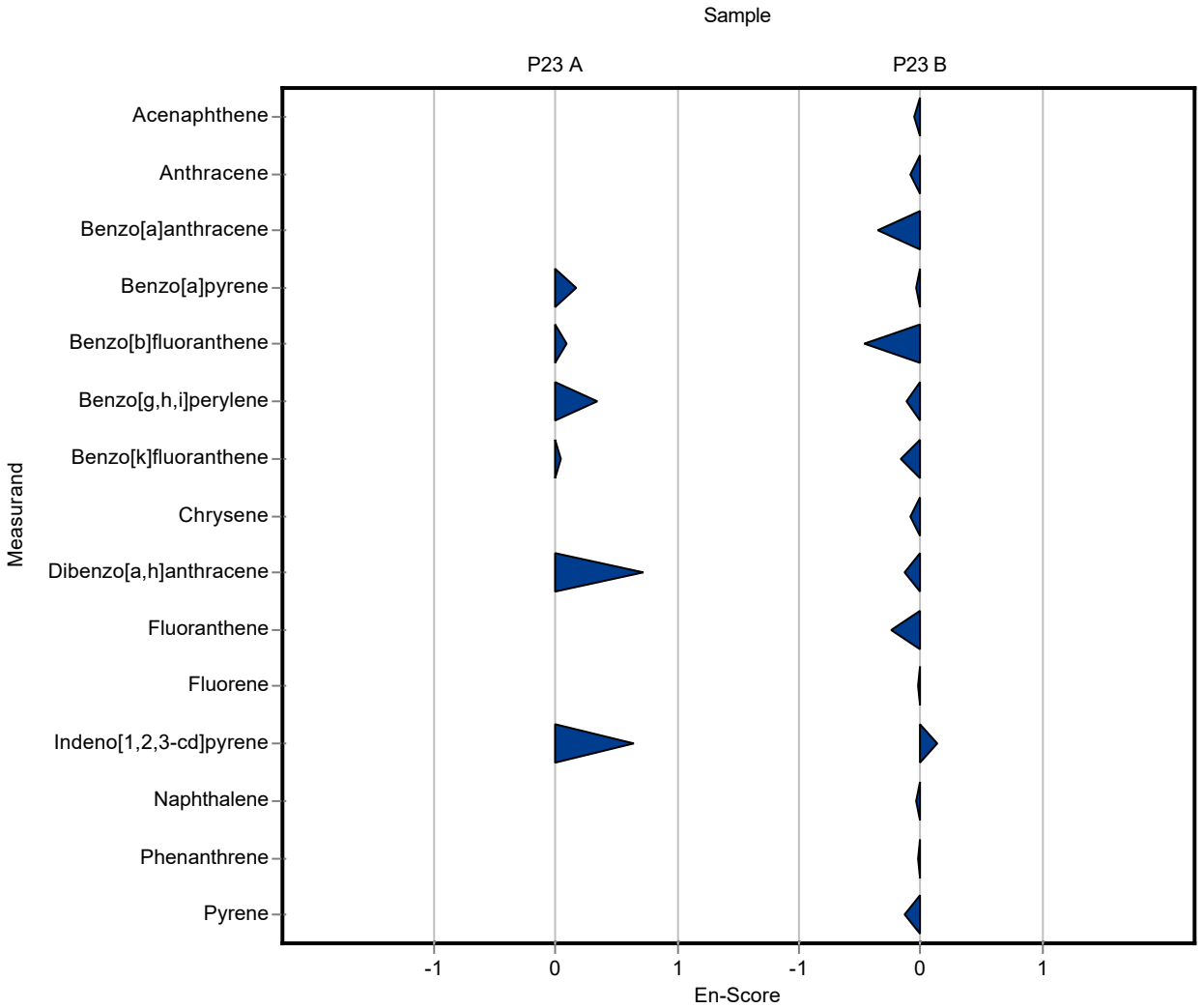
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	131 ± 46	25.7	96.7	-0.05
Acenaphthylene	ng/l	104 ± 5.36	<100 (LOQ) ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	168 ± 18	44.5	98.1	-0.09
Benzo[a]anthracene	ng/l	109 ± 6.92	101 ± 11	22.9	92.6	-0.35
Benzo[a]pyrene	ng/l	109 ± 8.57	106 ± 42	26.1	97.5	-0.03
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	82.3 ± 13.2	16.1	86.8	-0.46
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	127 ± 47	44.4	91.6	-0.12
Benzo[k]fluoranthene	ng/l	121 ± 6.99	112 ± 28	31.5	92.4	-0.16
Chrysene	ng/l	141 ± 7.44	128 ± 73	31	90.8	-0.09
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	111 ± 21	35.1	94.9	-0.13

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0012

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	126 ± 42	26.4	85.8	-0.25
Fluorene	ng/l	84.9 ± 4.59	82.8 ± 38.9	11.9	97.5	-0.03
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	90.2 ± 53.2	10.7	118	0.13
Naphthalene	ng/l	137 ± 8.6	135 ± 35	28.9	98.3	-0.03
Phenanthrene	ng/l	144 ± 2.72	138 ± 97	21.6	95.9	-0.03
Pyrene	ng/l	144 ± 7.27	128 ± 58	23.1	88.6	-0.14



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	<20 (LOQ) ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	<20 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<20 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	23.2 ± 7.19	3.37	145	2.12
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<20 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	23.5 ± 7.29	2.64	151	3.02
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	22.7 ± 7.04	4.5	161	1.92
Benzo[k]fluoranthene	ng/l	15 ± 1.5	20.8 ± 6.45	3.91	138	1.47
Chrysene	ng/l	12.9 ± 0.849	<20 (LOQ) ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	22.95 ± 7.11	4.89	141	1.36
Fluoranthene	ng/l	19.3 ± 1.32	22.8 ± 7.07	3.48	118	1.00
Fluorene	ng/l	20.9 ± 1.69	<20 (LOQ) ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	22 ± 6.82	3.17	146	2.18
Naphthalene	ng/l	22.7 ± 3.5	<20 (LOQ) ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	<20 (LOQ) ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	<20 (LOQ) ± -	2.02	-	-

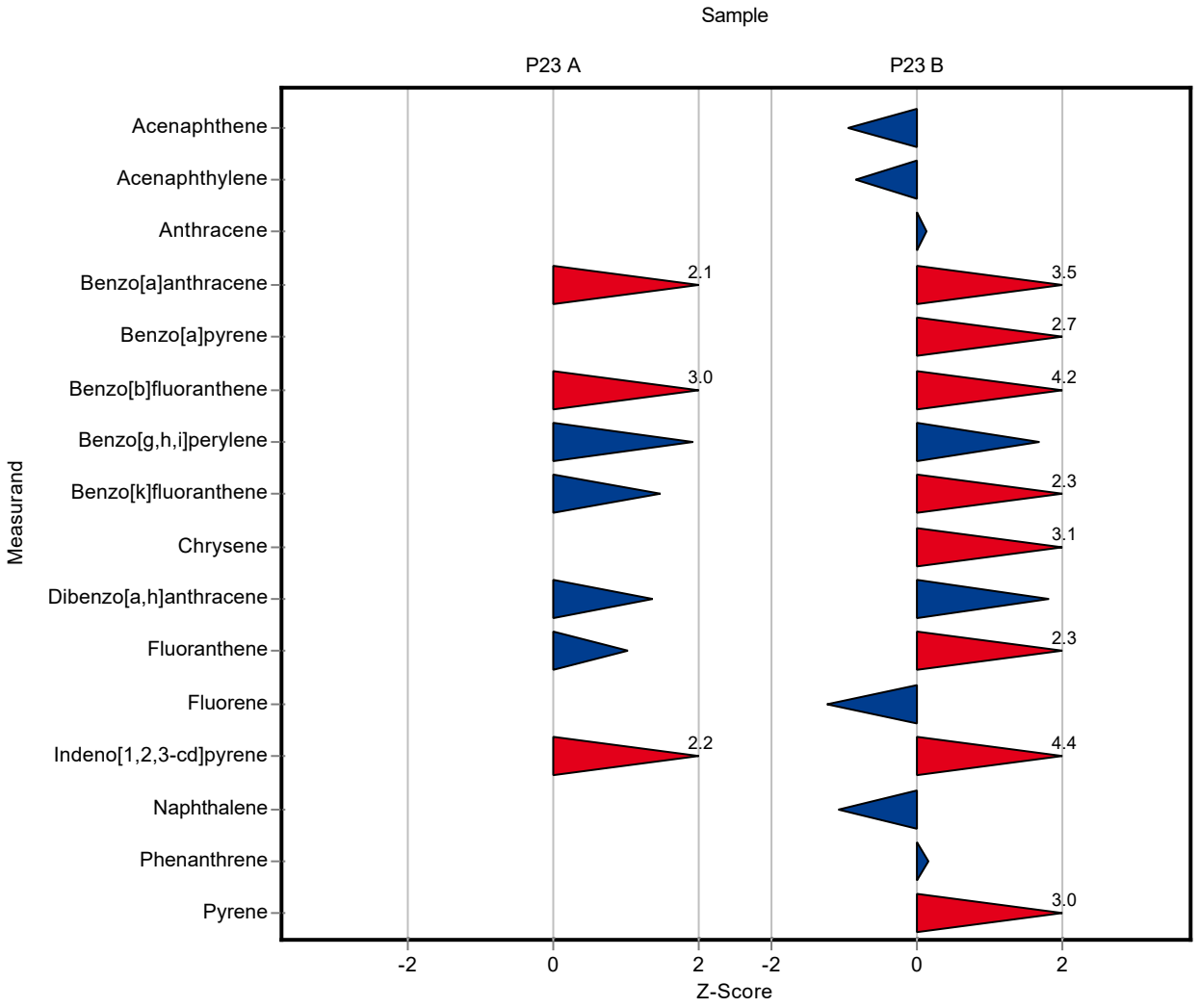
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	111 ± 34.4	25.7	82	-0.95
Acenaphthylene	ng/l	104 ± 5.36	82.7 ± 25.6	25	79.5	-0.85
Anthracene	ng/l	171 ± 9.03	177 ± 54.9	44.5	103	0.13
Benzo[a]anthracene	ng/l	109 ± 6.92	189 ± 58.5	22.9	173	3.49
Benzo[a]pyrene	ng/l	109 ± 8.57	180 ± 55.9	26.1	166	2.73
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	162 ± 50.1	16.1	171	4.16
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	213 ± 65.9	44.4	154	1.68
Benzo[k]fluoranthene	ng/l	121 ± 6.99	195 ± 60.6	31.5	161	2.34
Chrysene	ng/l	141 ± 7.44	237 ± 73.4	31	168	3.10
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	180 ± 55.9	35.1	154	1.80

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0013

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	209 ± 64.8	26.4	142	2.35
Fluorene	ng/l	84.9 ± 4.59	70.1 ± 21.7	11.9	82.6	-1.25
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	123 ± 38	10.7	161	4.35
Naphthalene	ng/l	137 ± 8.6	106 ± 33	28.9	77.2	-1.09
Phenanthrene	ng/l	144 ± 2.72	147 ± 45.7	21.6	102	0.14
Pyrene	ng/l	144 ± 7.27	214 ± 66.2	23.1	148	3.01



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0013

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	<20 (LOQ) ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	<20 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	<20 (LOQ) ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	23.2 ± 7.19	3.37	145	0.49
Benzo[a]pyrene	ng/l	12.6 ± 2.25	<20 (LOQ) ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	23.5 ± 7.29	2.64	151	0.54
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	22.7 ± 7.04	4.5	161	0.61
Benzo[k]fluoranthene	ng/l	15 ± 1.5	20.8 ± 6.45	3.91	138	0.44
Chrysene	ng/l	12.9 ± 0.849	<20 (LOQ) ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	22.95 ± 7.11	4.89	141	0.46
Fluoranthene	ng/l	19.3 ± 1.32	22.8 ± 7.07	3.48	118	0.24
Fluorene	ng/l	20.9 ± 1.69	<20 (LOQ) ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	22 ± 6.82	3.17	146	0.50
Naphthalene	ng/l	22.7 ± 3.5	<20 (LOQ) ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	<20 (LOQ) ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	<20 (LOQ) ± -	2.02	-	-

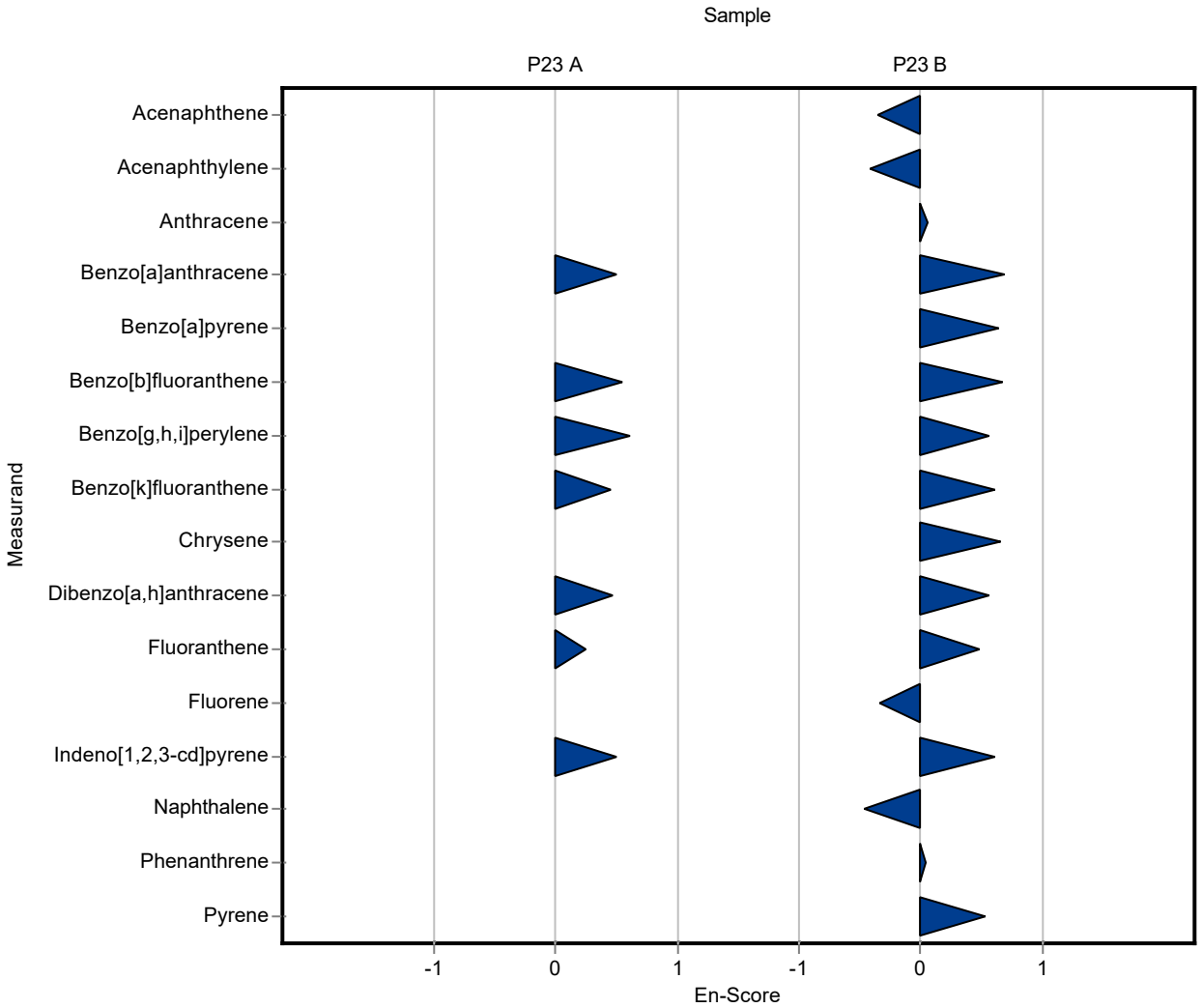
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	111 ± 34.4	25.7	82	-0.35
Acenaphthylene	ng/l	104 ± 5.36	82.7 ± 25.6	25	79.5	-0.41
Anthracene	ng/l	171 ± 9.03	177 ± 54.9	44.5	103	0.05
Benzo[a]anthracene	ng/l	109 ± 6.92	189 ± 58.5	22.9	173	0.68
Benzo[a]pyrene	ng/l	109 ± 8.57	180 ± 55.9	26.1	166	0.64
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	162 ± 50.1	16.1	171	0.67
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	213 ± 65.9	44.4	154	0.56
Benzo[k]fluoranthene	ng/l	121 ± 6.99	195 ± 60.6	31.5	161	0.61
Chrysene	ng/l	141 ± 7.44	237 ± 73.4	31	168	0.65
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	180 ± 55.9	35.1	154	0.56

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0013

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	209 ± 64.8	26.4	142	0.48
Fluorene	ng/l	84.9 ± 4.59	70.1 ± 21.7	11.9	82.6	-0.34
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	123 ± 38	10.7	161	0.61
Naphthalene	ng/l	137 ± 8.6	106 ± 33	28.9	77.2	-0.47
Phenanthrene	ng/l	144 ± 2.72	147 ± 45.7	21.6	102	0.03
Pyrene	ng/l	144 ± 7.27	214 ± 66.2	23.1	148	0.52



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	15.53 ± 2.27	2.64	112	0.63
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	11.68 ± 1.27	3.29	92.4	-0.29
Benzo[a]anthracene	ng/l	16.1 ± 1.46	13 ± 1.8	3.37	81	-0.91
Benzo[a]pyrene	ng/l	12.6 ± 2.25	11.5 ± 1.48	3.03	90.9	-0.38
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	13.16 ± 2.43	2.64	84.8	-0.90
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	10.16 ± 1.48	4.5	72.2	-0.87
Benzo[k]fluoranthene	ng/l	15 ± 1.5	11.47 ± 1.2	3.91	76.3	-0.91
Chrysene	ng/l	12.9 ± 0.849	10.62 ± 1.44	2.84	82.3	-0.80
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	12.04 ± 2	4.89	73.8	-0.87
Fluoranthene	ng/l	19.3 ± 1.32	15.72 ± 1.46	3.48	81.4	-1.03
Fluorene	ng/l	20.9 ± 1.69	16.33 ± 1.03	2.92	78.3	-1.55
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	10.23 ± 1.39	3.17	67.8	-1.53
Naphthalene	ng/l	22.7 ± 3.5	12.2 ± 2.71	4.77	53.7	-2.21
Phenanthrene	ng/l	14.8 ± 0.953	12.98 ± 1.2	2.21	87.9	-0.81
Pyrene	ng/l	12.6 ± 0.683	10.75 ± 2.11	2.02	85.2	-0.92

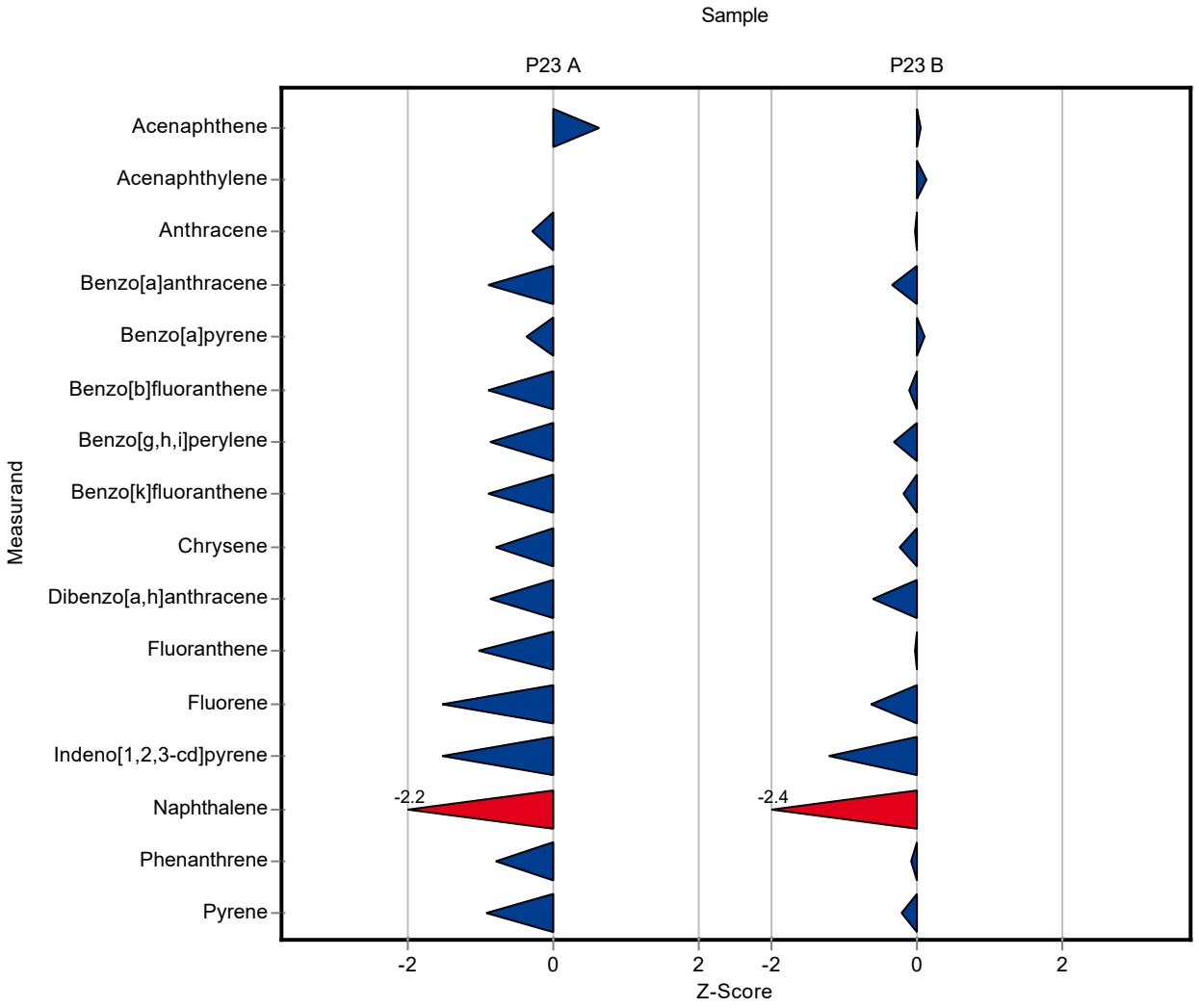
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	136.35 ± 1.07	25.7	101	0.04
Acenaphthylene	ng/l	104 ± 5.36	106.64 ± 2.89	25	103	0.11
Anthracene	ng/l	171 ± 9.03	169.59 ± 4.39	44.5	99	-0.04
Benzo[a]anthracene	ng/l	109 ± 6.92	101.1 ± 2.42	22.9	92.7	-0.35
Benzo[a]pyrene	ng/l	109 ± 8.57	111.5 ± 6.25	26.1	103	0.10
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	93 ± 0.51	16.1	98	-0.12
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	124.04 ± 17.68	44.4	89.5	-0.33
Benzo[k]fluoranthene	ng/l	121 ± 6.99	115.19 ± 7.81	31.5	95	-0.19
Chrysene	ng/l	141 ± 7.44	132.91 ± 1.46	31	94.3	-0.26
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	94.95 ± 22.54	35.1	81.2	-0.63

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0014

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	145.62 ± 10.9	26.4	99.1	-0.05
Fluorene	ng/l	84.9 ± 4.59	77.3 ± 2.96	11.9	91	-0.64
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	63.27 ± 12.64	10.7	82.8	-1.23
Naphthalene	ng/l	137 ± 8.6	67.1 ± 7.38	28.9	48.8	-2.44
Phenanthrene	ng/l	144 ± 2.72	141.69 ± 1.95	21.6	98.5	-0.10
Pyrene	ng/l	144 ± 7.27	139.23 ± 0.06	23.1	96.4	-0.23



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0014

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	15.53 ± 2.27	2.64	112	0.36
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	11.68 ± 1.27	3.29	92.4	-0.36
Benzo[a]anthracene	ng/l	16.1 ± 1.46	13 ± 1.8	3.37	81	-0.79
Benzo[a]pyrene	ng/l	12.6 ± 2.25	11.5 ± 1.48	3.03	90.9	-0.31
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	13.16 ± 2.43	2.64	84.8	-0.45
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	10.16 ± 1.48	4.5	72.2	-1.19
Benzo[k]fluoranthene	ng/l	15 ± 1.5	11.47 ± 1.2	3.91	76.3	-1.26
Chrysene	ng/l	12.9 ± 0.849	10.62 ± 1.44	2.84	82.3	-0.76
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	12.04 ± 2	4.89	73.8	-0.90
Fluoranthene	ng/l	19.3 ± 1.32	15.72 ± 1.46	3.48	81.4	-1.12
Fluorene	ng/l	20.9 ± 1.69	16.33 ± 1.03	2.92	78.3	-1.70
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	10.23 ± 1.39	3.17	67.8	-1.45
Naphthalene	ng/l	22.7 ± 3.5	12.2 ± 2.71	4.77	53.7	-1.63
Phenanthrene	ng/l	14.8 ± 0.953	12.98 ± 1.2	2.21	87.9	-0.69
Pyrene	ng/l	12.6 ± 0.683	10.75 ± 2.11	2.02	85.2	-0.44

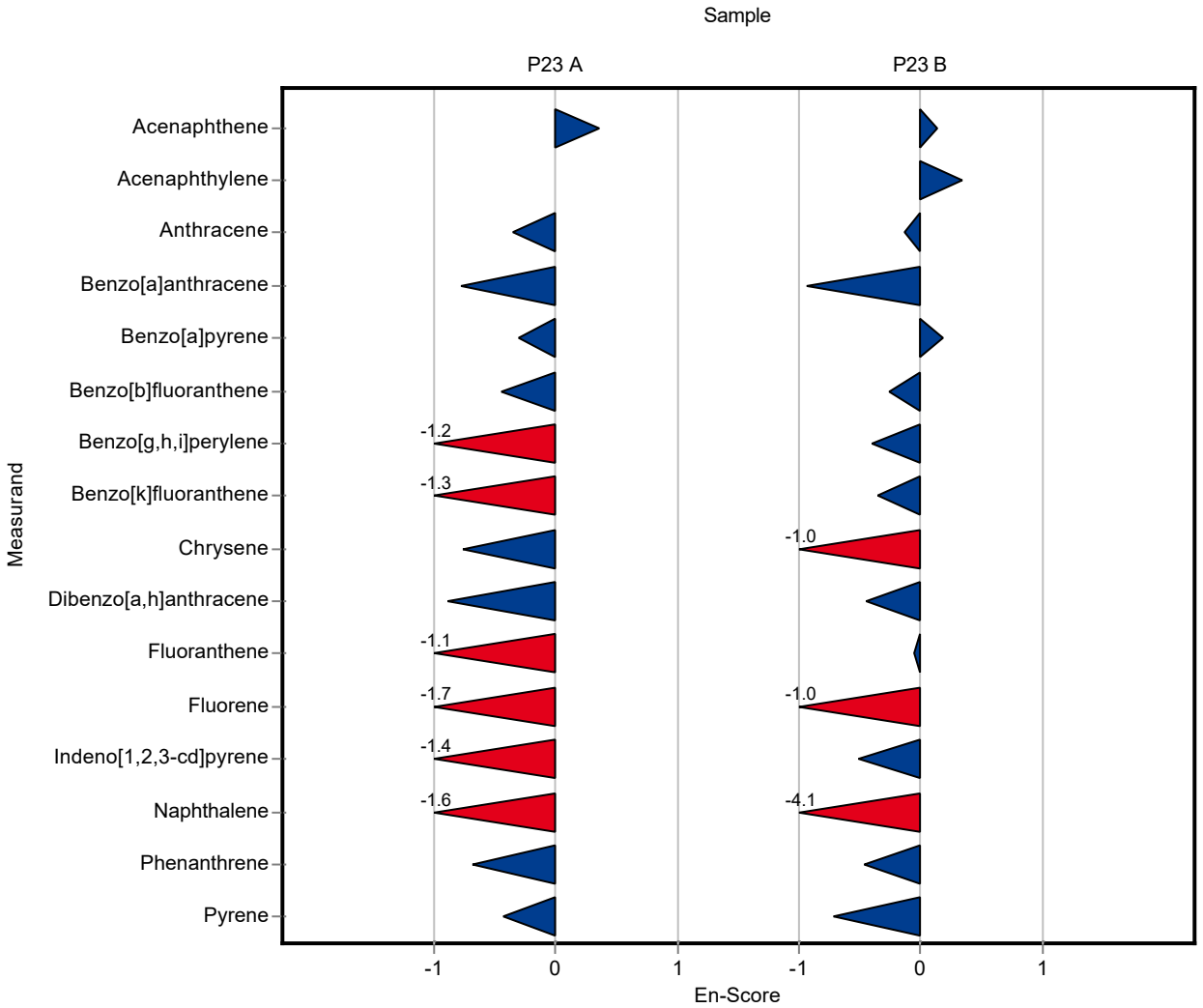
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	136.35 ± 1.07	25.7	101	0.14
Acenaphthylene	ng/l	104 ± 5.36	106.64 ± 2.89	25	103	0.34
Anthracene	ng/l	171 ± 9.03	169.59 ± 4.39	44.5	99	-0.13
Benzo[a]anthracene	ng/l	109 ± 6.92	101.1 ± 2.42	22.9	92.7	-0.94
Benzo[a]pyrene	ng/l	109 ± 8.57	111.5 ± 6.25	26.1	103	0.18
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	93 ± 0.51	16.1	98	-0.26
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	124.04 ± 17.68	44.4	89.5	-0.40
Benzo[k]fluoranthene	ng/l	121 ± 6.99	115.19 ± 7.81	31.5	95	-0.35
Chrysene	ng/l	141 ± 7.44	132.91 ± 1.46	31	94.3	-1.01
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	94.95 ± 22.54	35.1	81.2	-0.46

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0014

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	145.62 ± 10.9	26.4	99.1	-0.06
Fluorene	ng/l	84.9 ± 4.59	77.3 ± 2.96	11.9	91	-1.02
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	63.27 ± 12.64	10.7	82.8	-0.51
Naphthalene	ng/l	137 ± 8.6	67.1 ± 7.38	28.9	48.8	-4.11
Phenanthrene	ng/l	144 ± 2.72	141.69 ± 1.95	21.6	98.5	-0.47
Pyrene	ng/l	144 ± 7.27	139.23 ± 0.06	23.1	96.4	-0.72



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	14.39 ± 1.44	2.64	104	0.20
Acenaphthylene	ng/l	10.8 ± 0.79	9.99 ± 1	2.59	92.6	-0.31
Anthracene	ng/l	12.6 ± 0.723	12.56 ± 1.26	3.29	99.4	-0.02
Benzo[a]anthracene	ng/l	16.1 ± 1.46	12.8 ± 1.28	3.37	79.7	-0.96
Benzo[a]pyrene	ng/l	12.6 ± 2.25	8.23 ± 0.82	3.03	65.1	-1.45
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	13.71 ± 1.37	2.64	88.3	-0.69
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	11.57 ± 1.16	4.5	82.2	-0.56
Benzo[k]fluoranthene	ng/l	15 ± 1.5	12.65 ± 1.26	3.91	84.1	-0.61
Chrysene	ng/l	12.9 ± 0.849	11.61 ± 1.16	2.84	90	-0.45
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	13.37 ± 1.34	4.89	82	-0.60
Fluoranthene	ng/l	19.3 ± 1.32	16.9 ± 1.69	3.48	87.5	-0.69
Fluorene	ng/l	20.9 ± 1.69	16.76 ± 1.68	2.92	80.3	-1.40
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	13.88 ± 1.39	3.17	92	-0.38
Naphthalene	ng/l	22.7 ± 3.5	25.7 ± 2.57	4.77	113	0.62
Phenanthrene	ng/l	14.8 ± 0.953	14.8 ± 1.48	2.21	100	0.02
Pyrene	ng/l	12.6 ± 0.683	11.64 ± 1.16	2.02	92.3	-0.48

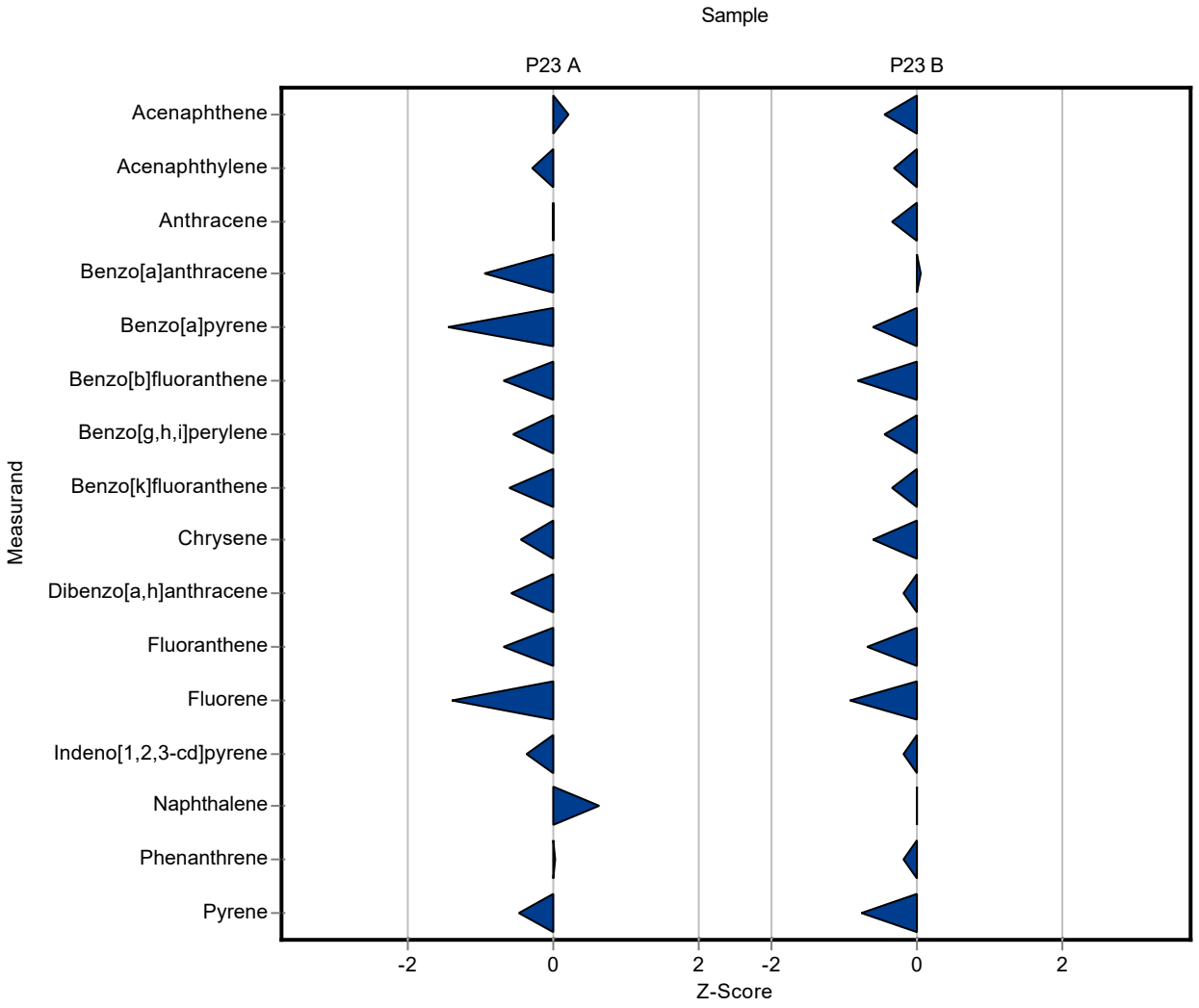
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	123.37 ± 12.34	25.7	91.1	-0.47
Acenaphthylene	ng/l	104 ± 5.36	96.01 ± 9.6	25	92.3	-0.32
Anthracene	ng/l	171 ± 9.03	155.22 ± 15.52	44.5	90.7	-0.36
Benzo[a]anthracene	ng/l	109 ± 6.92	110.01 ± 11	22.9	101	0.04
Benzo[a]pyrene	ng/l	109 ± 8.57	92.88 ± 9.29	26.1	85.4	-0.61
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	81.56 ± 8.16	16.1	86	-0.82
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	118.12 ± 11.81	44.4	85.2	-0.46
Benzo[k]fluoranthene	ng/l	121 ± 6.99	110.26 ± 11.03	31.5	90.9	-0.35
Chrysene	ng/l	141 ± 7.44	121.78 ± 12.18	31	86.4	-0.62
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	109.7 ± 10.97	35.1	93.8	-0.21

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0015

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	128.2 ± 12.82	26.4	87.3	-0.71
Fluorene	ng/l	84.9 ± 4.59	73.81 ± 7.38	11.9	86.9	-0.93
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	74.47 ± 7.45	10.7	97.4	-0.18
Naphthalene	ng/l	137 ± 8.6	137 ± 13.7	28.9	99.7	-0.01
Phenanthrene	ng/l	144 ± 2.72	139.57 ± 13.96	21.6	97	-0.20
Pyrene	ng/l	144 ± 7.27	126.74 ± 12.67	23.1	87.7	-0.77



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0015

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	14.39 ± 1.44	2.64	104	0.17
Acenaphthylene	ng/l	10.8 ± 0.79	9.99 ± 1	2.59	92.6	-0.37
Anthracene	ng/l	12.6 ± 0.723	12.56 ± 1.26	3.29	99.4	-0.03
Benzo[a]anthracene	ng/l	16.1 ± 1.46	12.8 ± 1.28	3.37	79.7	-1.10
Benzo[a]pyrene	ng/l	12.6 ± 2.25	8.23 ± 0.82	3.03	65.1	-1.59
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	13.71 ± 1.37	2.64	88.3	-0.52
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	11.57 ± 1.16	4.5	82.2	-0.91
Benzo[k]fluoranthene	ng/l	15 ± 1.5	12.65 ± 1.26	3.91	84.1	-0.82
Chrysene	ng/l	12.9 ± 0.849	11.61 ± 1.16	2.84	90	-0.52
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	13.37 ± 1.34	4.89	82	-0.79
Fluoranthene	ng/l	19.3 ± 1.32	16.9 ± 1.69	3.48	87.5	-0.67
Fluorene	ng/l	20.9 ± 1.69	16.76 ± 1.68	2.92	80.3	-1.09
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	13.88 ± 1.39	3.17	92	-0.36
Naphthalene	ng/l	22.7 ± 3.5	25.7 ± 2.57	4.77	113	0.48
Phenanthrene	ng/l	14.8 ± 0.953	14.8 ± 1.48	2.21	100	0.01
Pyrene	ng/l	12.6 ± 0.683	11.64 ± 1.16	2.02	92.3	-0.40

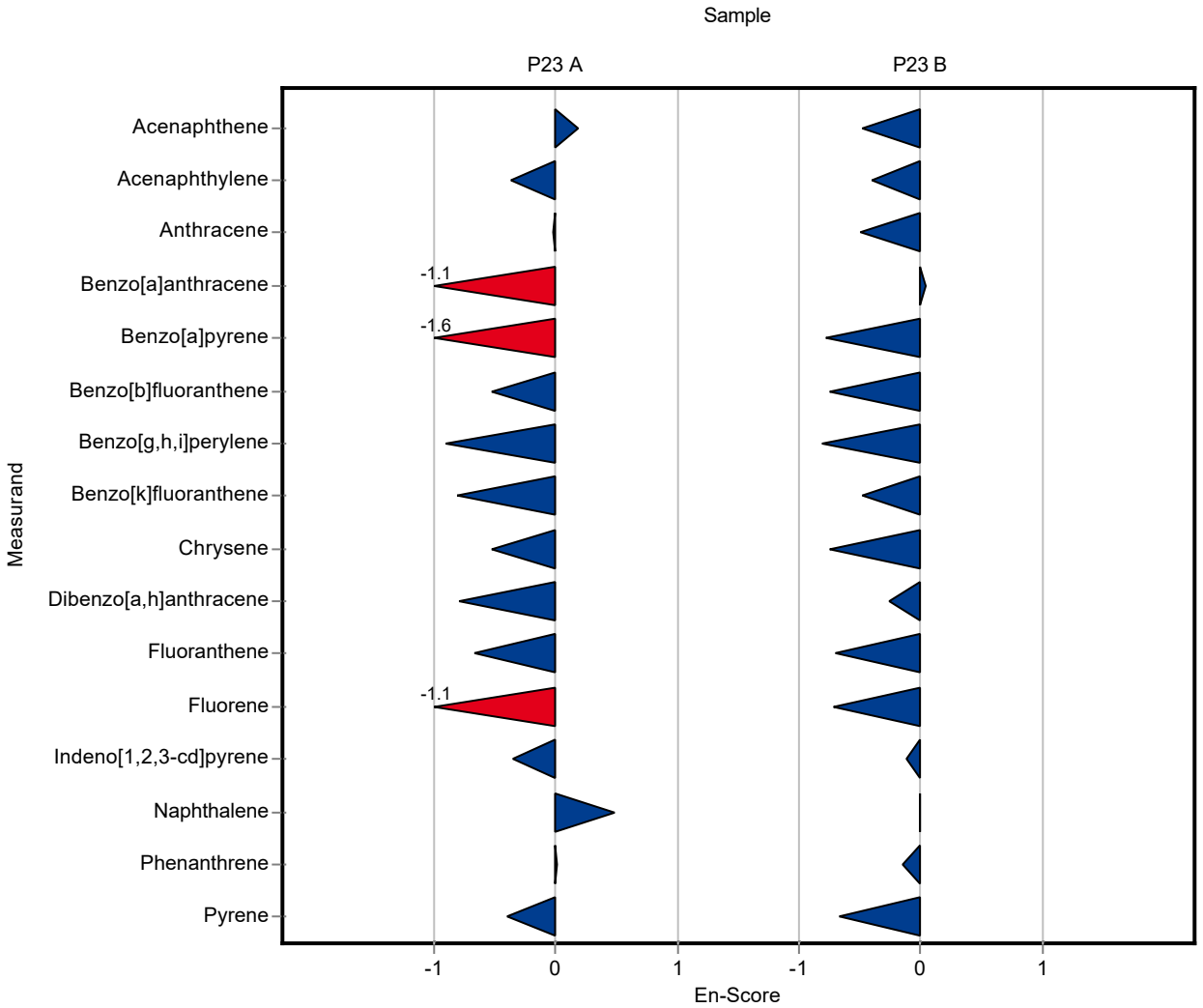
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	123.37 ± 12.34	25.7	91.1	-0.47
Acenaphthylene	ng/l	104 ± 5.36	96.01 ± 9.6	25	92.3	-0.40
Anthracene	ng/l	171 ± 9.03	155.22 ± 15.52	44.5	90.7	-0.49
Benzo[a]anthracene	ng/l	109 ± 6.92	110.01 ± 11	22.9	101	0.04
Benzo[a]pyrene	ng/l	109 ± 8.57	92.88 ± 9.29	26.1	85.4	-0.78
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	81.56 ± 8.16	16.1	86	-0.75
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	118.12 ± 11.81	44.4	85.2	-0.81
Benzo[k]fluoranthene	ng/l	121 ± 6.99	110.26 ± 11.03	31.5	90.9	-0.47
Chrysene	ng/l	141 ± 7.44	121.78 ± 12.18	31	86.4	-0.75
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	109.7 ± 10.97	35.1	93.8	-0.26

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0015

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	128.2 ± 12.82	26.4	87.3	-0.70
Fluorene	ng/l	84.9 ± 4.59	73.81 ± 7.38	11.9	86.9	-0.72
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	74.47 ± 7.45	10.7	97.4	-0.12
Naphthalene	ng/l	137 ± 8.6	137 ± 13.7	28.9	99.7	-0.01
Phenanthrene	ng/l	144 ± 2.72	139.57 ± 13.96	21.6	97	-0.15
Pyrene	ng/l	144 ± 7.27	126.74 ± 12.67	23.1	87.7	-0.67



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	14.8 ± 7.4	2.64	107	0.35
Acenaphthylene	ng/l	10.8 ± 0.79	11.5 ± 5.8	2.59	107	0.28
Anthracene	ng/l	12.6 ± 0.723	12.6 ± 6.3	3.29	99.7	-0.01
Benzo[a]anthracene	ng/l	16.1 ± 1.46	17.4 ± 8.7	3.37	108	0.40
Benzo[a]pyrene	ng/l	12.6 ± 2.25	15.3 ± 7.7	3.03	121	0.88
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	18.7 ± 9.4	2.64	120	1.20
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	15.8 ± 7.9	4.5	112	0.38
Benzo[k]fluoranthene	ng/l	15 ± 1.5	17.9 ± 9	3.91	119	0.73
Chrysene	ng/l	12.9 ± 0.849	15.8 ± 7.9	2.84	122	1.02
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	20.3 ± 10.2	4.89	125	0.82
Fluoranthene	ng/l	19.3 ± 1.32	21.9 ± 11	3.48	113	0.74
Fluorene	ng/l	20.9 ± 1.69	23.4 ± 11.7	2.92	112	0.87
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	16.9 ± 8.5	3.17	112	0.57
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	17.3 ± 8.7	2.21	117	1.14
Pyrene	ng/l	12.6 ± 0.683	13.1 ± 6.6	2.02	104	0.24

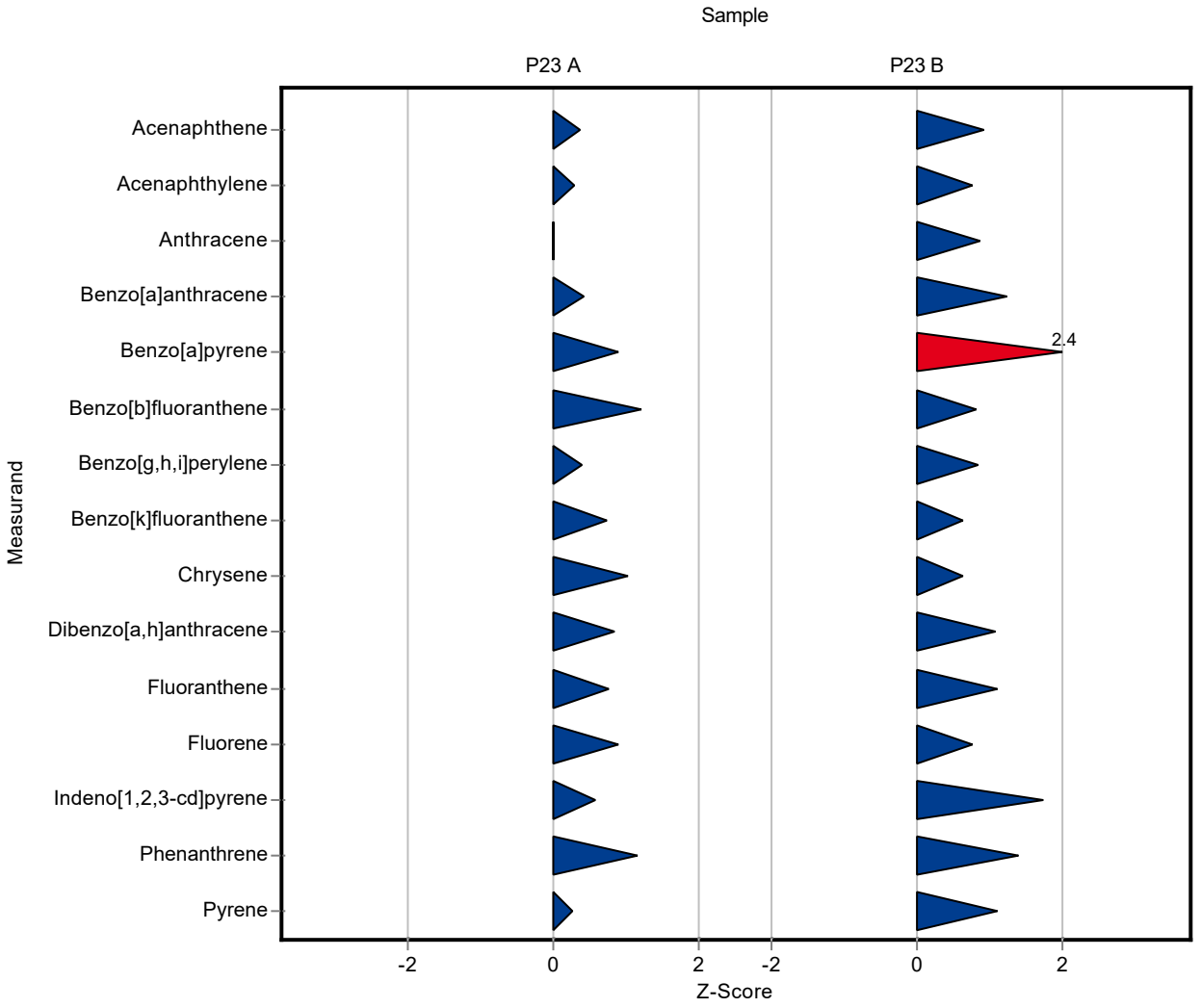
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	159 ± 80	25.7	117	0.92
Acenaphthylene	ng/l	104 ± 5.36	123 ± 62	25	118	0.76
Anthracene	ng/l	171 ± 9.03	209 ± 105	44.5	122	0.85
Benzo[a]anthracene	ng/l	109 ± 6.92	137 ± 69	22.9	126	1.22
Benzo[a]pyrene	ng/l	109 ± 8.57	171 ± 86	26.1	157	2.38
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	108 ± 54	16.1	114	0.81
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	175 ± 88	44.4	126	0.82
Benzo[k]fluoranthene	ng/l	121 ± 6.99	141 ± 71	31.5	116	0.63
Chrysene	ng/l	141 ± 7.44	160 ± 80	31	114	0.61
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	154 ± 77	35.1	132	1.06

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0016

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	176 ± 88	26.4	120	1.10
Fluorene	ng/l	84.9 ± 4.59	93.7 ± 46.9	11.9	110	0.74
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	95 ± 47.5	10.7	124	1.73
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	174 ± 87	21.6	121	1.39
Pyrene	ng/l	144 ± 7.27	170 ± 85	23.1	118	1.10



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0016

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	14.8 ± 7.4	2.64	107	0.06
Acenaphthylene	ng/l	10.8 ± 0.79	11.5 ± 5.8	2.59	107	0.06
Anthracene	ng/l	12.6 ± 0.723	12.6 ± 6.3	3.29	99.7	0.00
Benzo[a]anthracene	ng/l	16.1 ± 1.46	17.4 ± 8.7	3.37	108	0.08
Benzo[a]pyrene	ng/l	12.6 ± 2.25	15.3 ± 7.7	3.03	121	0.17
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	18.7 ± 9.4	2.64	120	0.17
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	15.8 ± 7.9	4.5	112	0.11
Benzo[k]fluoranthene	ng/l	15 ± 1.5	17.9 ± 9	3.91	119	0.16
Chrysene	ng/l	12.9 ± 0.849	15.8 ± 7.9	2.84	122	0.18
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	20.3 ± 10.2	4.89	125	0.19
Fluoranthene	ng/l	19.3 ± 1.32	21.9 ± 11	3.48	113	0.12
Fluorene	ng/l	20.9 ± 1.69	23.4 ± 11.7	2.92	112	0.11
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	16.9 ± 8.5	3.17	112	0.11
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	17.3 ± 8.7	2.21	117	0.14
Pyrene	ng/l	12.6 ± 0.683	13.1 ± 6.6	2.02	104	0.04

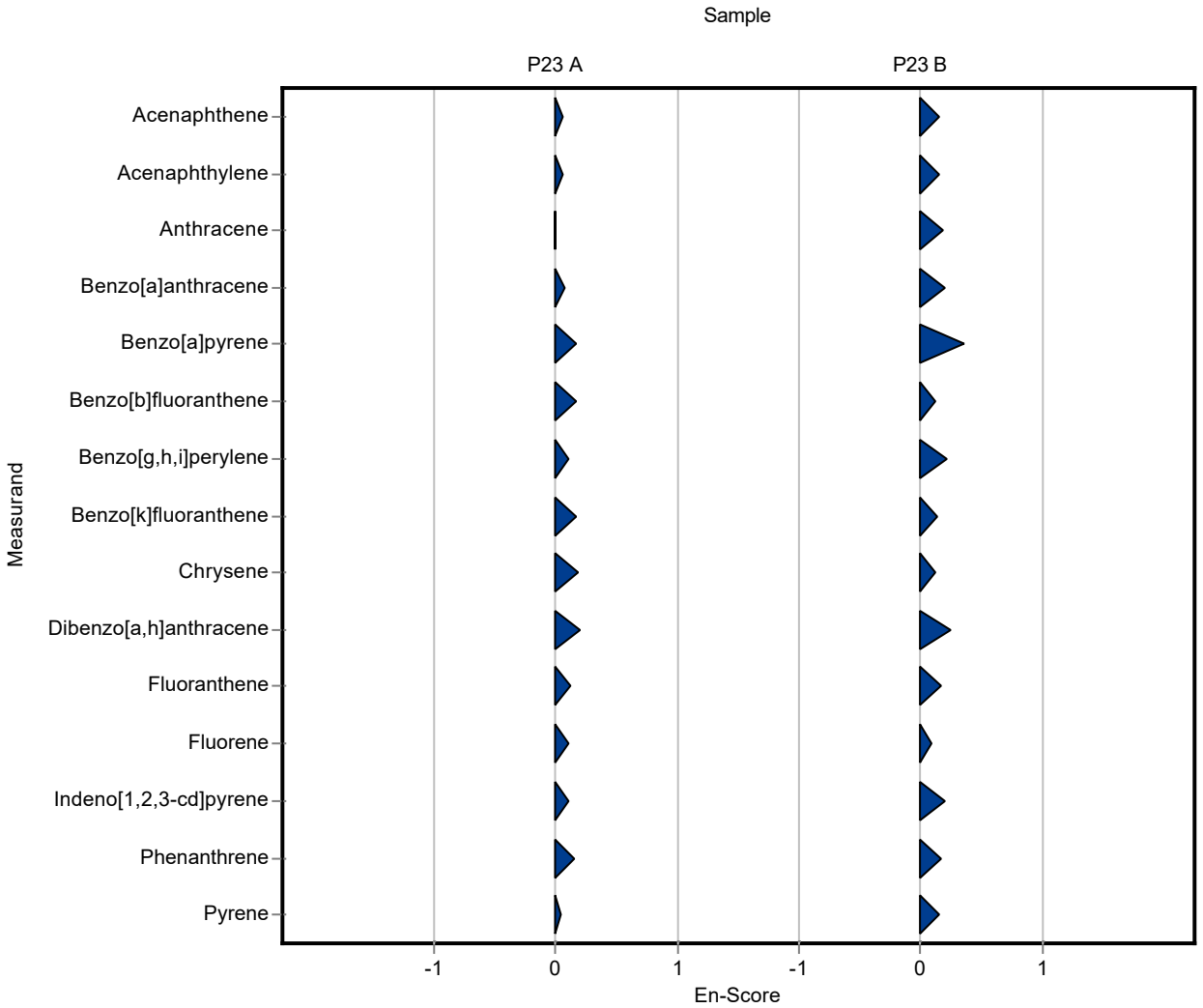
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	159 ± 80	25.7	117	0.15
Acenaphthylene	ng/l	104 ± 5.36	123 ± 62	25	118	0.15
Anthracene	ng/l	171 ± 9.03	209 ± 105	44.5	122	0.18
Benzo[a]anthracene	ng/l	109 ± 6.92	137 ± 69	22.9	126	0.20
Benzo[a]pyrene	ng/l	109 ± 8.57	171 ± 86	26.1	157	0.36
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	108 ± 54	16.1	114	0.12
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	175 ± 88	44.4	126	0.21
Benzo[k]fluoranthene	ng/l	121 ± 6.99	141 ± 71	31.5	116	0.14
Chrysene	ng/l	141 ± 7.44	160 ± 80	31	114	0.12
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	154 ± 77	35.1	132	0.24

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0016

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	176 ± 88	26.4	120	0.17
Fluorene	ng/l	84.9 ± 4.59	93.7 ± 46.9	11.9	110	0.09
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	95 ± 47.5	10.7	124	0.20
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	174 ± 87	21.6	121	0.17
Pyrene	ng/l	144 ± 7.27	170 ± 85	23.1	118	0.15



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	- ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	- ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	- ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	- ± -	26.1	-	-
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	- ± -	16.1	-	-
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	- ± -	31.5	-	-
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 Labcode: LC0017

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	- ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	- ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	- ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	- ± -	26.1	-	-
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	- ± -	16.1	-	-
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	- ± -	31.5	-	-
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0017

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	- ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	- ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	- ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	- ± -	26.1	-	-
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	- ± -	16.1	-	-
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	- ± -	31.5	-	-
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 Labcode: LC0018

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0018

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	- ± -	2.64	-	-
Acenaphthylene	ng/l	10.8 ± 0.79	- ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	- ± -	3.29	-	-
Benzo[a]anthracene	ng/l	16.1 ± 1.46	- ± -	3.37	-	-
Benzo[a]pyrene	ng/l	12.6 ± 2.25	- ± -	3.03	-	-
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	- ± -	2.64	-	-
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	- ± -	4.5	-	-
Benzo[k]fluoranthene	ng/l	15 ± 1.5	- ± -	3.91	-	-
Chrysene	ng/l	12.9 ± 0.849	- ± -	2.84	-	-
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	- ± -	4.89	-	-
Fluoranthene	ng/l	19.3 ± 1.32	- ± -	3.48	-	-
Fluorene	ng/l	20.9 ± 1.69	- ± -	2.92	-	-
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	- ± -	3.17	-	-
Naphthalene	ng/l	22.7 ± 3.5	- ± -	4.77	-	-
Phenanthrene	ng/l	14.8 ± 0.953	- ± -	2.21	-	-
Pyrene	ng/l	12.6 ± 0.683	- ± -	2.02	-	-

Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	- ± -	25.7	-	-
Acenaphthylene	ng/l	104 ± 5.36	- ± -	25	-	-
Anthracene	ng/l	171 ± 9.03	- ± -	44.5	-	-
Benzo[a]anthracene	ng/l	109 ± 6.92	- ± -	22.9	-	-
Benzo[a]pyrene	ng/l	109 ± 8.57	- ± -	26.1	-	-
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	- ± -	16.1	-	-
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	- ± -	44.4	-	-
Benzo[k]fluoranthene	ng/l	121 ± 6.99	- ± -	31.5	-	-
Chrysene	ng/l	141 ± 7.44	- ± -	31	-	-
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	- ± -	35.1	-	-

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0018

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	- ± -	26.4	-	-
Fluorene	ng/l	84.9 ± 4.59	- ± -	11.9	-	-
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	- ± -	10.7	-	-
Naphthalene	ng/l	137 ± 8.6	- ± -	28.9	-	-
Phenanthrene	ng/l	144 ± 2.72	- ± -	21.6	-	-
Pyrene	ng/l	144 ± 7.27	- ± -	23.1	-	-

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	12.7 ± 3.8	2.64	91.5	-0.45
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	13 ± 3.9	3.29	103	0.11
Benzo[a]anthracene	ng/l	16.1 ± 1.46	16 ± 4.6	3.37	99.7	-0.02
Benzo[a]pyrene	ng/l	12.6 ± 2.25	10 ± 4.1	3.03	79.1	-0.87
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	15 ± 2.9	2.64	96.6	-0.20
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	13 ± 5.7	4.5	92.4	-0.24
Benzo[k]fluoranthene	ng/l	15 ± 1.5	14 ± 4.6	3.91	93.1	-0.27
Chrysene	ng/l	12.9 ± 0.849	13 ± 2.8	2.84	101	0.04
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	14 ± 4.9	4.89	85.9	-0.47
Fluoranthene	ng/l	19.3 ± 1.32	19 ± 4.4	3.48	98.4	-0.09
Fluorene	ng/l	20.9 ± 1.69	21.1 ± 4.6	2.92	101	0.08
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	16 ± 7.1	3.17	106	0.29
Naphthalene	ng/l	22.7 ± 3.5	23.6 ± 4.7	4.77	104	0.18
Phenanthrene	ng/l	14.8 ± 0.953	14 ± 2.9	2.21	94.8	-0.35
Pyrene	ng/l	12.6 ± 0.683	13 ± 2.7	2.02	103	0.19

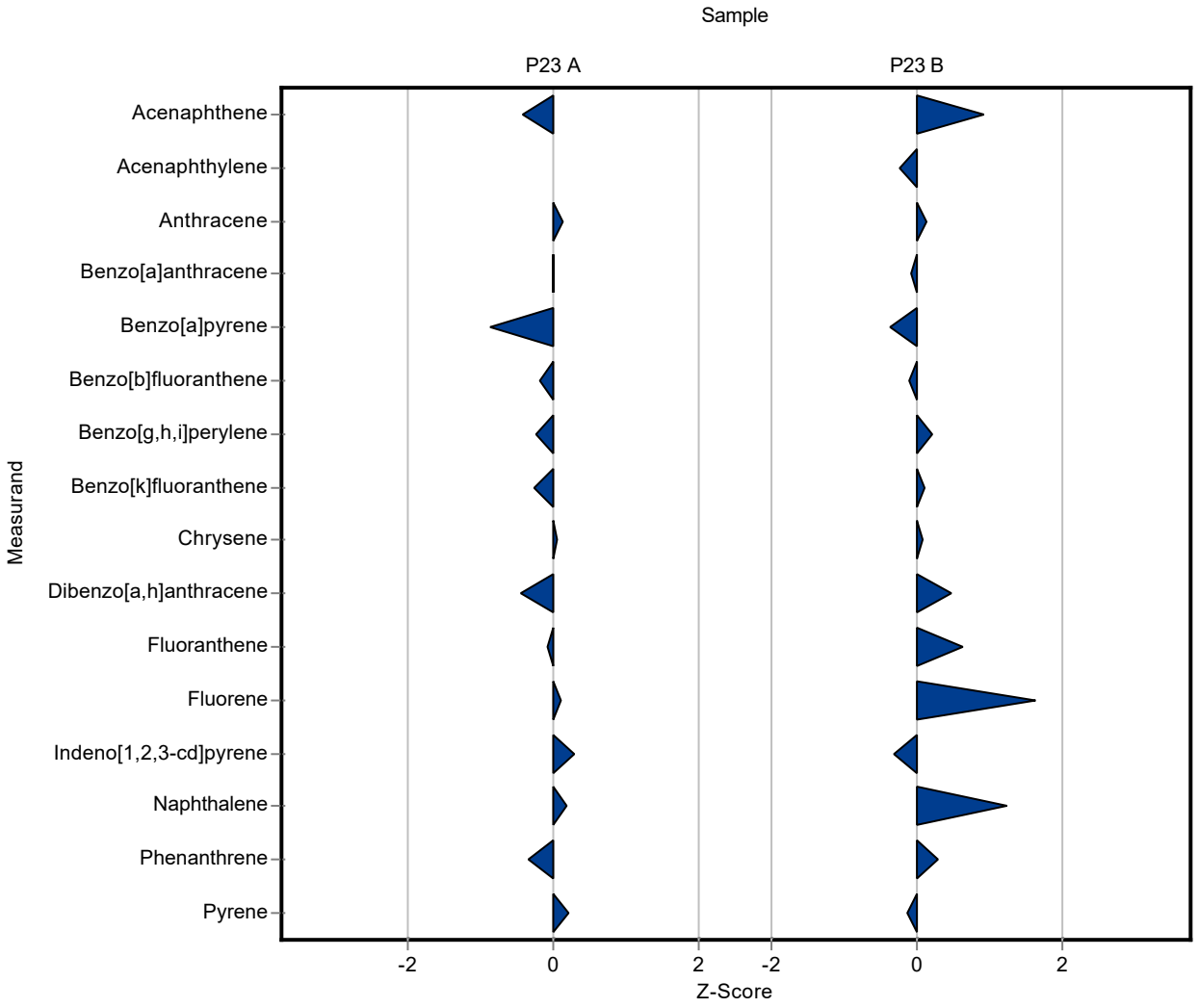
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	159 ± 47	25.7	117	0.92
Acenaphthylene	ng/l	104 ± 5.36	98 ± 24	25	94.2	-0.24
Anthracene	ng/l	171 ± 9.03	176 ± 54	44.5	103	0.11
Benzo[a]anthracene	ng/l	109 ± 6.92	107 ± 31	22.9	98.1	-0.09
Benzo[a]pyrene	ng/l	109 ± 8.57	99 ± 41	26.1	91	-0.37
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	93 ± 18	16.1	98	-0.12
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	147 ± 64	44.4	106	0.19
Benzo[k]fluoranthene	ng/l	121 ± 6.99	124 ± 41	31.5	102	0.09
Chrysene	ng/l	141 ± 7.44	143 ± 31	31	101	0.07
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	133 ± 47	35.1	114	0.46

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0019

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	163 ± 38	26.4	111	0.61
Fluorene	ng/l	84.9 ± 4.59	104 ± 23	11.9	122	1.61
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	73 ± 32	10.7	95.5	-0.32
Naphthalene	ng/l	137 ± 8.6	173 ± 34	28.9	126	1.23
Phenanthrene	ng/l	144 ± 2.72	150 ± 31	21.6	104	0.28
Pyrene	ng/l	144 ± 7.27	141 ± 29	23.1	97.6	-0.15



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0019

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	12.7 ± 3.8	2.64	91.5	-0.15
Acenaphthylene	ng/l	10.8 ± 0.79	<10 (LOQ) ± -	2.59	-	-
Anthracene	ng/l	12.6 ± 0.723	13 ± 3.9	3.29	103	0.05
Benzo[a]anthracene	ng/l	16.1 ± 1.46	16 ± 4.6	3.37	99.7	-0.01
Benzo[a]pyrene	ng/l	12.6 ± 2.25	10 ± 4.1	3.03	79.1	-0.31
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	15 ± 2.9	2.64	96.6	-0.08
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	13 ± 5.7	4.5	92.4	-0.09
Benzo[k]fluoranthene	ng/l	15 ± 1.5	14 ± 4.6	3.91	93.1	-0.11
Chrysene	ng/l	12.9 ± 0.849	13 ± 2.8	2.84	101	0.02
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	14 ± 4.9	4.89	85.9	-0.23
Fluoranthene	ng/l	19.3 ± 1.32	19 ± 4.4	3.48	98.4	-0.04
Fluorene	ng/l	20.9 ± 1.69	21.1 ± 4.6	2.92	101	0.03
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	16 ± 7.1	3.17	106	0.06
Naphthalene	ng/l	22.7 ± 3.5	23.6 ± 4.7	4.77	104	0.09
Phenanthrene	ng/l	14.8 ± 0.953	14 ± 2.9	2.21	94.8	-0.13
Pyrene	ng/l	12.6 ± 0.683	13 ± 2.7	2.02	103	0.07

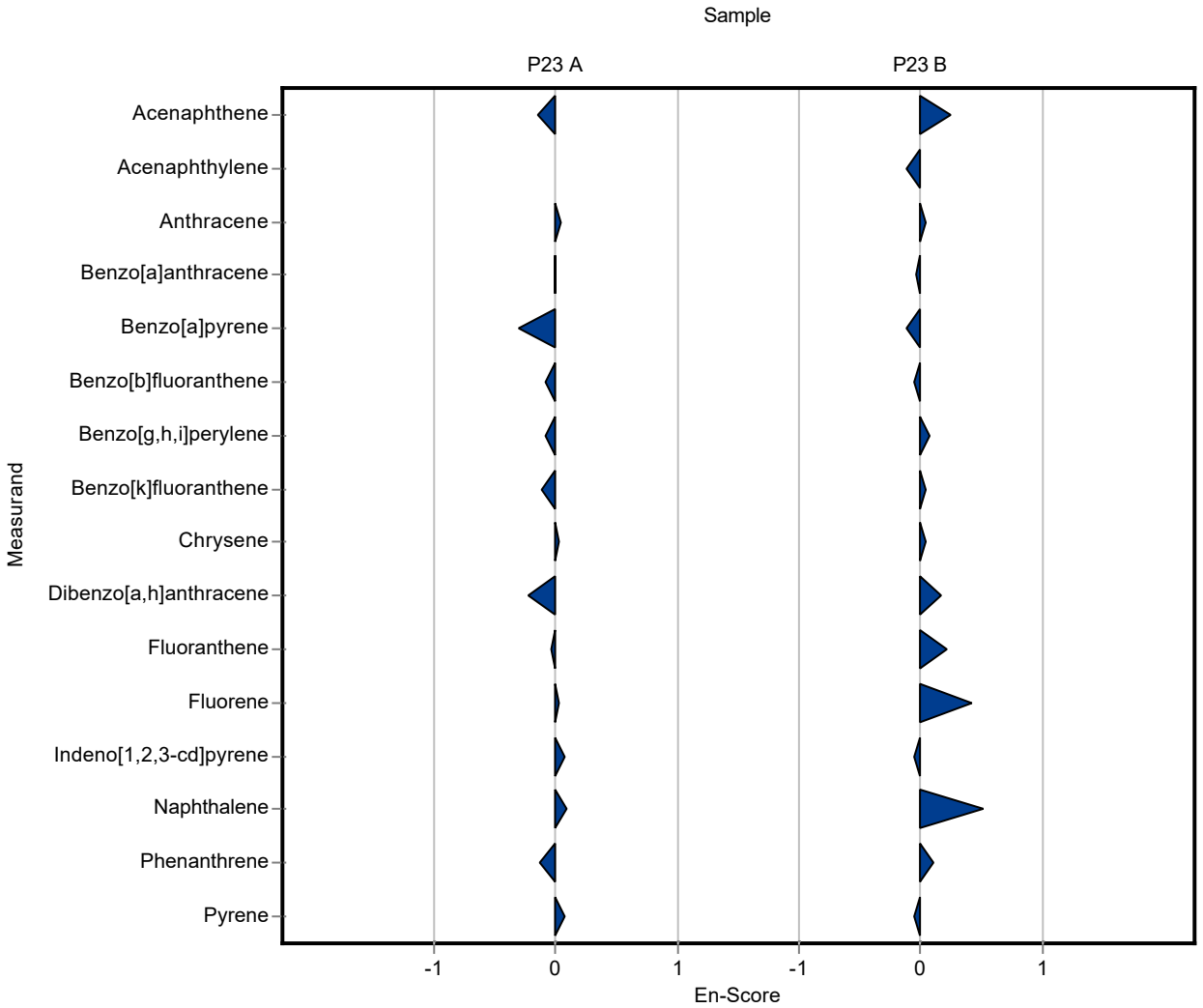
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	159 ± 47	25.7	117	0.25
Acenaphthylene	ng/l	104 ± 5.36	98 ± 24	25	94.2	-0.12
Anthracene	ng/l	171 ± 9.03	176 ± 54	44.5	103	0.04
Benzo[a]anthracene	ng/l	109 ± 6.92	107 ± 31	22.9	98.1	-0.03
Benzo[a]pyrene	ng/l	109 ± 8.57	99 ± 41	26.1	91	-0.12
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	93 ± 18	16.1	98	-0.05
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	147 ± 64	44.4	106	0.07
Benzo[k]fluoranthene	ng/l	121 ± 6.99	124 ± 41	31.5	102	0.03
Chrysene	ng/l	141 ± 7.44	143 ± 31	31	101	0.03
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	133 ± 47	35.1	114	0.17

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0019

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	163 ± 38	26.4	111	0.21
Fluorene	ng/l	84.9 ± 4.59	104 ± 23	11.9	122	0.41
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	73 ± 32	10.7	95.5	-0.05
Naphthalene	ng/l	137 ± 8.6	173 ± 34	28.9	126	0.52
Phenanthrene	ng/l	144 ± 2.72	150 ± 31	21.6	104	0.10
Pyrene	ng/l	144 ± 7.27	141 ± 29	23.1	97.6	-0.06



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	12.93 ± 2.59	2.64	93.2	-0.36
Acenaphthylene	ng/l	10.8 ± 0.79	10.63 ± 2.13	2.59	98.5	-0.06
Anthracene	ng/l	12.6 ± 0.723	10.68 ± 2.14	3.29	84.5	-0.59
Benzo[a]anthracene	ng/l	16.1 ± 1.46	14.72 ± 2.94	3.37	91.7	-0.40
Benzo[a]pyrene	ng/l	12.6 ± 2.25	9.85 ± 1.97	3.03	77.9	-0.92
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	16.3 ± 3.26	2.64	105	0.29
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	12.21 ± 3.54	4.5	86.8	-0.41
Benzo[k]fluoranthene	ng/l	15 ± 1.5	14.3 ± 2.86	3.91	95.1	-0.19
Chrysene	ng/l	12.9 ± 0.849	12.89 ± 2.58	2.84	99.9	0.00
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	14.06 ± 2.81	4.89	86.2	-0.46
Fluoranthene	ng/l	19.3 ± 1.32	17.95 ± 3.59	3.48	92.9	-0.39
Fluorene	ng/l	20.9 ± 1.69	19.34 ± 3.87	2.92	92.7	-0.52
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	13.12 ± 2.62	3.17	87	-0.62
Naphthalene	ng/l	22.7 ± 3.5	23.12 ± 4.62	4.77	102	0.08
Phenanthrene	ng/l	14.8 ± 0.953	14.02 ± 2.8	2.21	94.9	-0.34
Pyrene	ng/l	12.6 ± 0.683	12 ± 2.4	2.02	95.1	-0.30

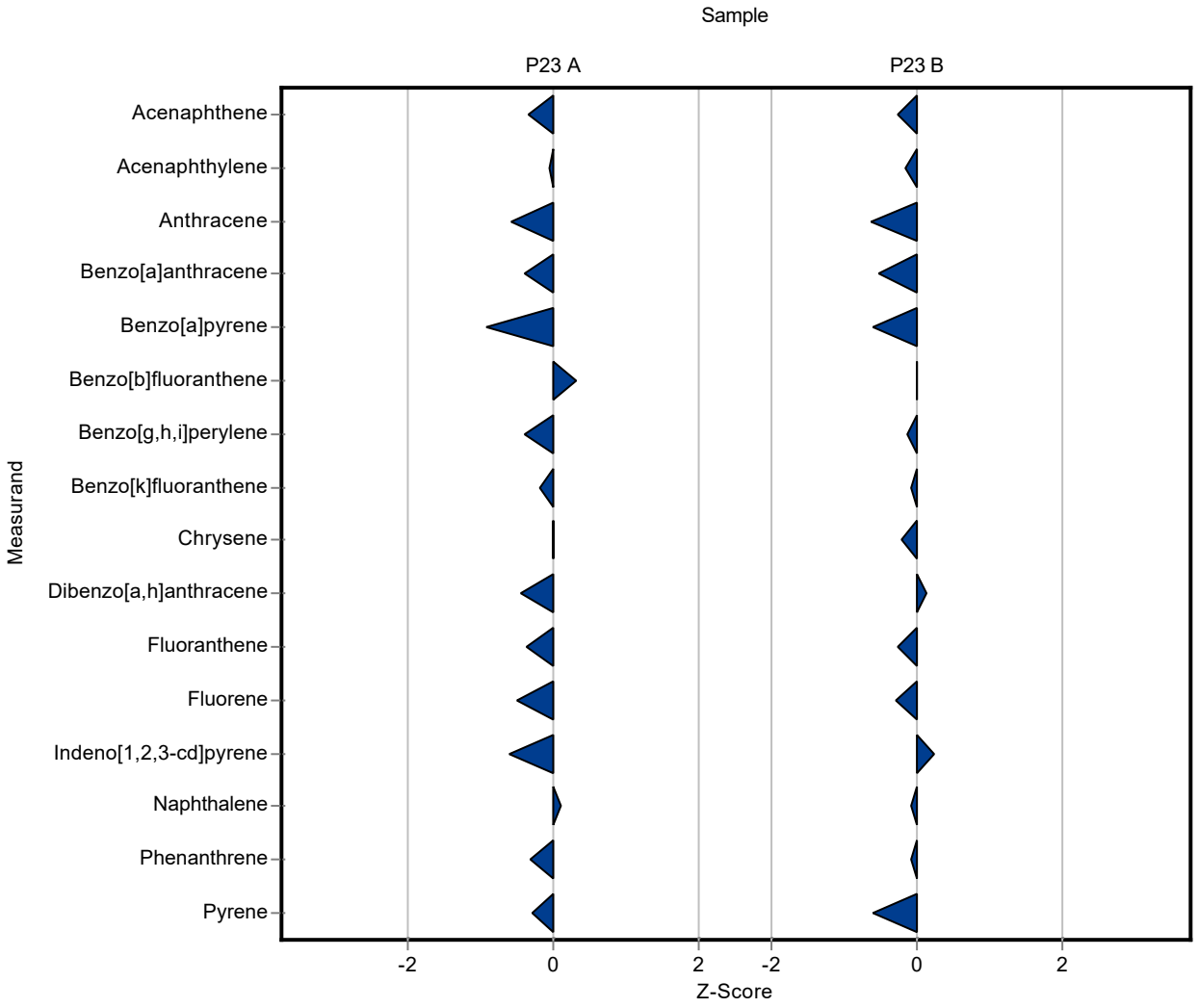
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	128.44 ± 25.69	25.7	94.8	-0.27
Acenaphthylene	ng/l	104 ± 5.36	99.5 ± 19.9	25	95.7	-0.18
Anthracene	ng/l	171 ± 9.03	142.93 ± 28.59	44.5	83.5	-0.64
Benzo[a]anthracene	ng/l	109 ± 6.92	96.44 ± 19.29	22.9	88.4	-0.55
Benzo[a]pyrene	ng/l	109 ± 8.57	92.77 ± 18.56	26.1	85.3	-0.61
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	94.75 ± 18.95	16.1	99.9	-0.01
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	131.72 ± 38.2	44.4	95	-0.16
Benzo[k]fluoranthene	ng/l	121 ± 6.99	118.27 ± 23.65	31.5	97.5	-0.09
Chrysene	ng/l	141 ± 7.44	133.73 ± 26.75	31	94.9	-0.23
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	120.98 ± 24.2	35.1	103	0.12

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0020

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	139.39 ± 27.88	26.4	94.9	-0.28
Fluorene	ng/l	84.9 ± 4.59	81.27 ± 16.25	11.9	95.7	-0.31
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	78.97 ± 15.8	10.7	103	0.24
Naphthalene	ng/l	137 ± 8.6	134.41 ± 26.88	28.9	97.8	-0.10
Phenanthrene	ng/l	144 ± 2.72	141.93 ± 28.39	21.6	98.6	-0.09
Pyrene	ng/l	144 ± 7.27	130.45 ± 26.09	23.1	90.3	-0.61



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0020

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	12.93 ± 2.59	2.64	93.2	-0.18
Acenaphthylene	ng/l	10.8 ± 0.79	10.63 ± 2.13	2.59	98.5	-0.04
Anthracene	ng/l	12.6 ± 0.723	10.68 ± 2.14	3.29	84.5	-0.45
Benzo[a]anthracene	ng/l	16.1 ± 1.46	14.72 ± 2.94	3.37	91.7	-0.22
Benzo[a]pyrene	ng/l	12.6 ± 2.25	9.85 ± 1.97	3.03	77.9	-0.62
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	16.3 ± 3.26	2.64	105	0.11
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	12.21 ± 3.54	4.5	86.8	-0.26
Benzo[k]fluoranthene	ng/l	15 ± 1.5	14.3 ± 2.86	3.91	95.1	-0.13
Chrysene	ng/l	12.9 ± 0.849	12.89 ± 2.58	2.84	99.9	0.00
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	14.06 ± 2.81	4.89	86.2	-0.36
Fluoranthene	ng/l	19.3 ± 1.32	17.95 ± 3.59	3.48	92.9	-0.19
Fluorene	ng/l	20.9 ± 1.69	19.34 ± 3.87	2.92	92.7	-0.19
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	13.12 ± 2.62	3.17	87	-0.35
Naphthalene	ng/l	22.7 ± 3.5	23.12 ± 4.62	4.77	102	0.04
Phenanthrene	ng/l	14.8 ± 0.953	14.02 ± 2.8	2.21	94.9	-0.13
Pyrene	ng/l	12.6 ± 0.683	12 ± 2.4	2.02	95.1	-0.13

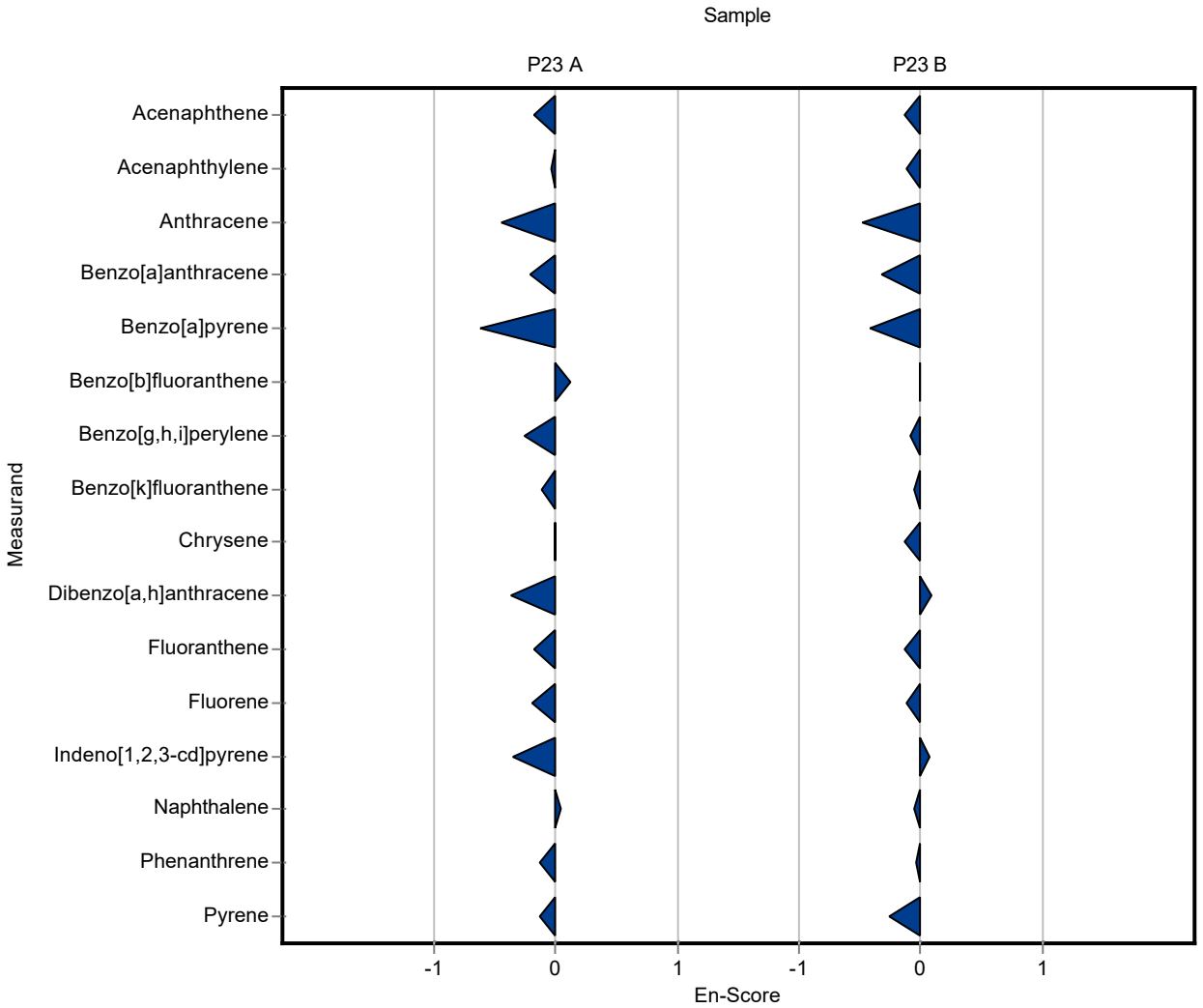
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	128.44 ± 25.69	25.7	94.8	-0.14
Acenaphthylene	ng/l	104 ± 5.36	99.5 ± 19.9	25	95.7	-0.11
Anthracene	ng/l	171 ± 9.03	142.93 ± 28.59	44.5	83.5	-0.49
Benzo[a]anthracene	ng/l	109 ± 6.92	96.44 ± 19.29	22.9	88.4	-0.32
Benzo[a]pyrene	ng/l	109 ± 8.57	92.77 ± 18.56	26.1	85.3	-0.42
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	94.75 ± 18.95	16.1	99.9	0.00
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	131.72 ± 38.2	44.4	95	-0.09
Benzo[k]fluoranthene	ng/l	121 ± 6.99	118.27 ± 23.65	31.5	97.5	-0.06
Chrysene	ng/l	141 ± 7.44	133.73 ± 26.75	31	94.9	-0.13
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	120.98 ± 24.2	35.1	103	0.08

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0020

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	139.39 ± 27.88	26.4	94.9	-0.13
Fluorene	ng/l	84.9 ± 4.59	81.27 ± 16.25	11.9	95.7	-0.11
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	78.97 ± 15.8	10.7	103	0.08
Naphthalene	ng/l	137 ± 8.6	134.41 ± 26.88	28.9	97.8	-0.05
Phenanthrene	ng/l	144 ± 2.72	141.93 ± 28.39	21.6	98.6	-0.03
Pyrene	ng/l	144 ± 7.27	130.45 ± 26.09	23.1	90.3	-0.27



Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	13.9 ± 0.552	13.6 ± 1.15	2.64	98	-0.10
Acenaphthylene	ng/l	10.8 ± 0.79	8.58 ± 1.32	2.59	79.5	-0.85
Anthracene	ng/l	12.6 ± 0.723	13.6 ± 1.26	3.29	108	0.29
Benzo[a]anthracene	ng/l	16.1 ± 1.46	14.2 ± 1.52	3.37	88.5	-0.55
Benzo[a]pyrene	ng/l	12.6 ± 2.25	12.9 ± 1.55	3.03	102	0.08
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	14.8 ± 1.41	2.64	95.4	-0.27
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	12.8 ± 1.51	4.5	91	-0.28
Benzo[k]fluoranthene	ng/l	15 ± 1.5	13.4 ± 1.35	3.91	89.1	-0.42
Chrysene	ng/l	12.9 ± 0.849	11.9 ± 1.39	2.84	92.3	-0.35
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	14.7 ± 1.13	4.89	90.2	-0.33
Fluoranthene	ng/l	19.3 ± 1.32	17.8 ± 1.58	3.48	92.2	-0.43
Fluorene	ng/l	20.9 ± 1.69	22.5 ± 1.21	2.92	108	0.56
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	11.5 ± 1.23	3.17	76.2	-1.13
Naphthalene	ng/l	22.7 ± 3.5	27.5 ± 1.28	4.77	121	1.00
Phenanthrene	ng/l	14.8 ± 0.953	17 ± 1.39	2.21	115	1.01
Pyrene	ng/l	12.6 ± 0.683	13.5 ± 1.46	2.02	107	0.44

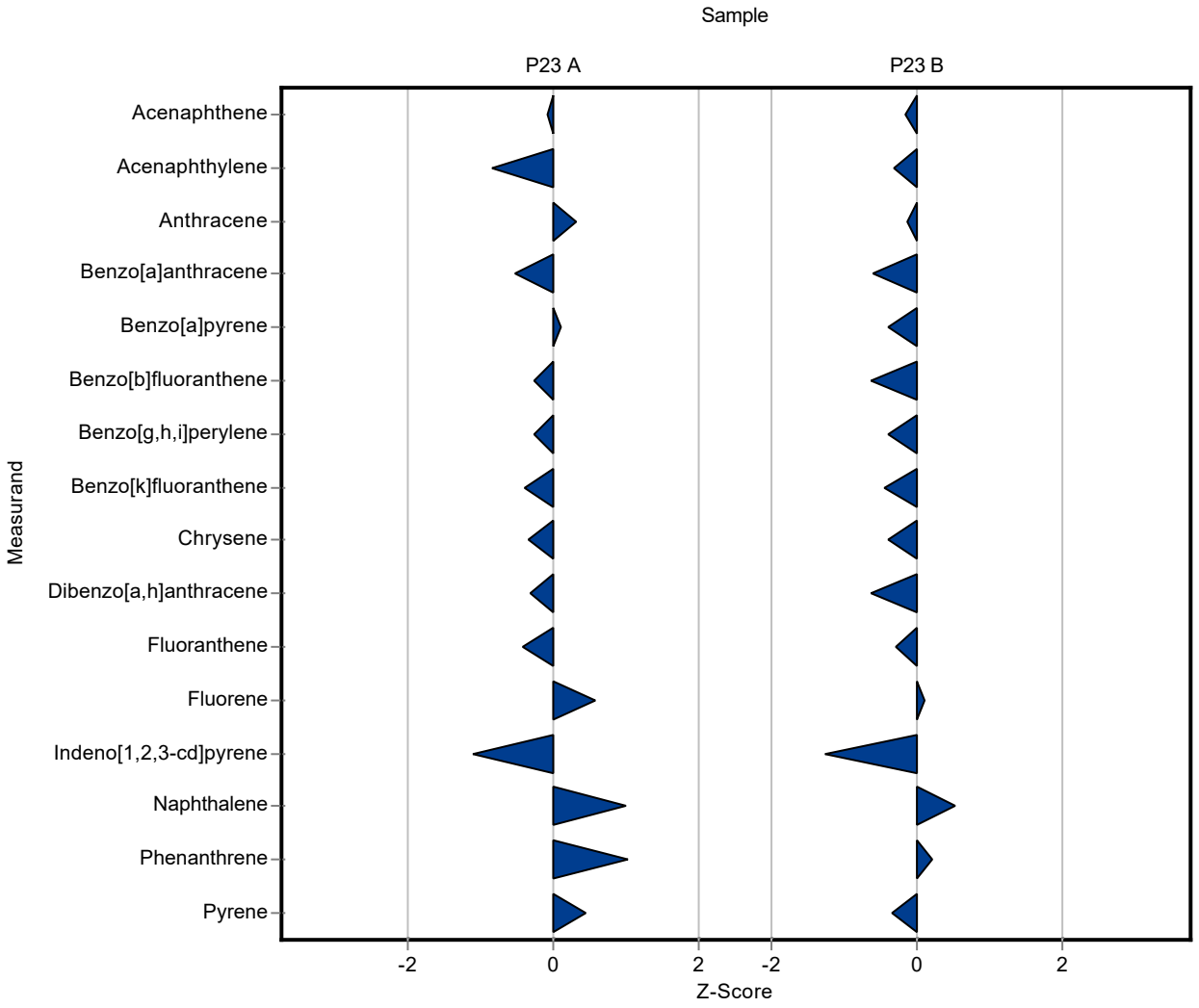
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Acenaphthene	ng/l	135 ± 6.22	131 ± 2.32	25.7	96.7	-0.17
Acenaphthylene	ng/l	104 ± 5.36	95.9 ± 2.64	25	92.2	-0.32
Anthracene	ng/l	171 ± 9.03	165 ± 3.36	44.5	96.4	-0.14
Benzo[a]anthracene	ng/l	109 ± 6.92	94.9 ± 3.02	22.9	87	-0.62
Benzo[a]pyrene	ng/l	109 ± 8.57	98.1 ± 3.04	26.1	90.2	-0.41
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	84.5 ± 2.79	16.1	89.1	-0.64
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	120 ± 3.01	44.4	86.5	-0.42
Benzo[k]fluoranthene	ng/l	121 ± 6.99	107 ± 2.71	31.5	88.2	-0.45
Chrysene	ng/l	141 ± 7.44	128 ± 2.87	31	90.8	-0.42
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	94.4 ± 2.26	35.1	80.7	-0.64

Summary of results Polycyclic Aromatic Hydrocarbons P23

Labcode: LC0021

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Fluoranthene	ng/l	147 ± 7.76	139 ± 3.24	26.4	94.6	-0.30
Fluorene	ng/l	84.9 ± 4.59	85.9 ± 2.41	11.9	101	0.08
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	62.8 ± 2.4	10.7	82.2	-1.27
Naphthalene	ng/l	137 ± 8.6	152 ± 2.9	28.9	111	0.51
Phenanthrene	ng/l	144 ± 2.72	148 ± 3	21.6	103	0.19
Pyrene	ng/l	144 ± 7.27	136 ± 3.06	23.1	94.1	-0.37



Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0021

Sample: P23A

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	13.9 ± 0.552	13.6 ± 1.15	2.64	98	-0.12
Acenaphthylene	ng/l	10.8 ± 0.79	8.58 ± 1.32	2.59	79.5	-0.80
Anthracene	ng/l	12.6 ± 0.723	13.6 ± 1.26	3.29	108	0.37
Benzo[a]anthracene	ng/l	16.1 ± 1.46	14.2 ± 1.52	3.37	88.5	-0.55
Benzo[a]pyrene	ng/l	12.6 ± 2.25	12.9 ± 1.55	3.03	102	0.07
Benzo[b]fluoranthene	ng/l	15.5 ± 2.12	14.8 ± 1.41	2.64	95.4	-0.20
Benzo[g,h,i]perylene	ng/l	14.1 ± 1.46	12.8 ± 1.51	4.5	91	-0.38
Benzo[k]fluoranthene	ng/l	15 ± 1.5	13.4 ± 1.35	3.91	89.1	-0.53
Chrysene	ng/l	12.9 ± 0.849	11.9 ± 1.39	2.84	92.3	-0.34
Dibenzo[a,h]anthracene	ng/l	16.3 ± 2.56	14.7 ± 1.13	4.89	90.2	-0.47
Fluoranthene	ng/l	19.3 ± 1.32	17.8 ± 1.58	3.48	92.2	-0.44
Fluorene	ng/l	20.9 ± 1.69	22.5 ± 1.21	2.92	108	0.56
Indeno[1,2,3-cd]pyrene	ng/l	15.1 ± 1.86	11.5 ± 1.23	3.17	76.2	-1.16
Naphthalene	ng/l	22.7 ± 3.5	27.5 ± 1.28	4.77	121	1.10
Phenanthrene	ng/l	14.8 ± 0.953	17 ± 1.39	2.21	115	0.76
Pyrene	ng/l	12.6 ± 0.683	13.5 ± 1.46	2.02	107	0.30

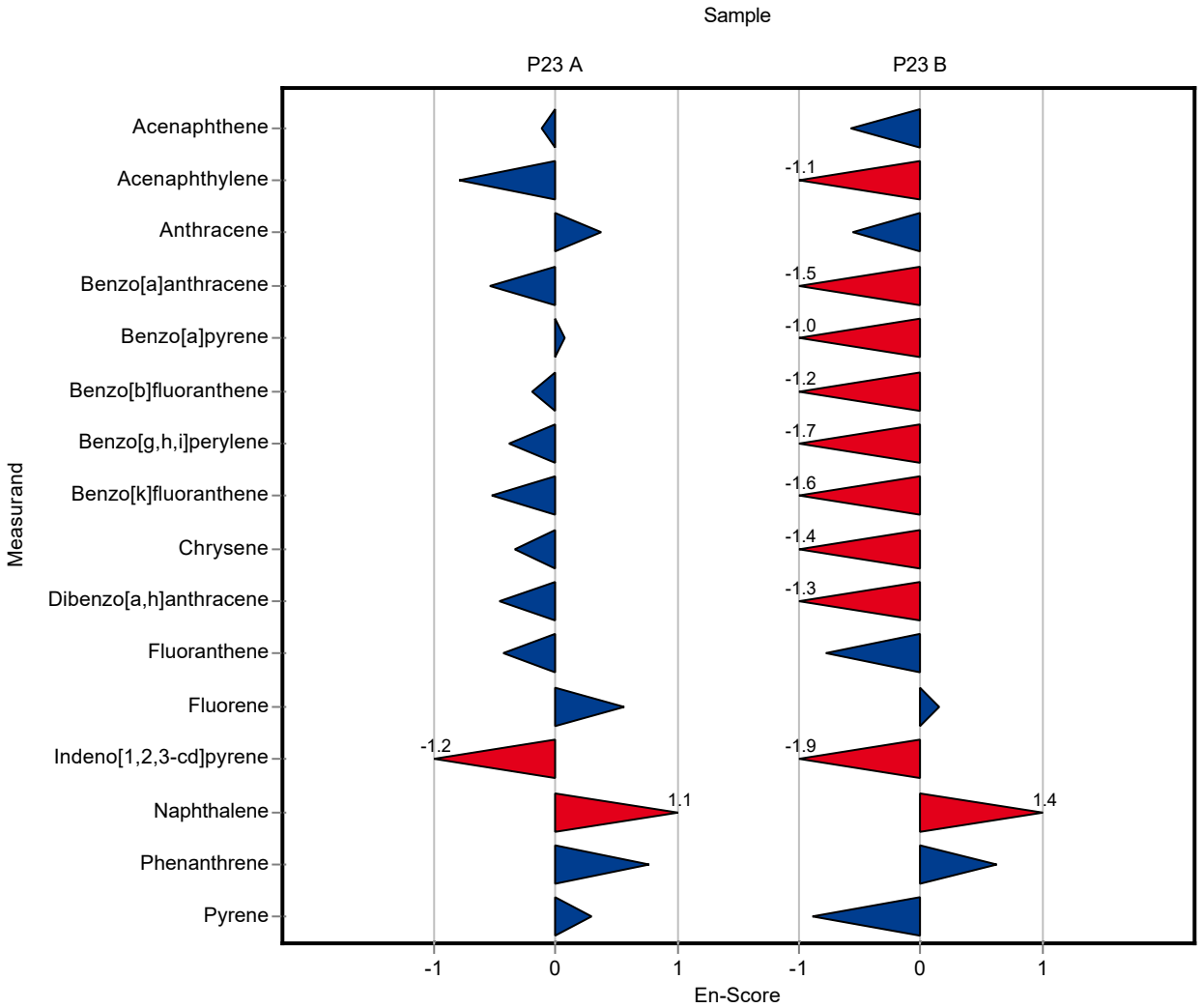
Sample: P23B

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Acenaphthene	ng/l	135 ± 6.22	131 ± 2.32	25.7	96.7	-0.57
Acenaphthylene	ng/l	104 ± 5.36	95.9 ± 2.64	25	92.2	-1.07
Anthracene	ng/l	171 ± 9.03	165 ± 3.36	44.5	96.4	-0.55
Benzo[a]anthracene	ng/l	109 ± 6.92	94.9 ± 3.02	22.9	87	-1.54
Benzo[a]pyrene	ng/l	109 ± 8.57	98.1 ± 3.04	26.1	90.2	-1.01
Benzo[b]fluoranthene	ng/l	94.9 ± 7.06	84.5 ± 2.79	16.1	89.1	-1.15
Benzo[g,h,i]perylene	ng/l	139 ± 8.96	120 ± 3.01	44.4	86.5	-1.73
Benzo[k]fluoranthene	ng/l	121 ± 6.99	107 ± 2.71	31.5	88.2	-1.61
Chrysene	ng/l	141 ± 7.44	128 ± 2.87	31	90.8	-1.38
Dibenzo[a,h]anthracene	ng/l	117 ± 16.8	94.4 ± 2.26	35.1	80.7	-1.29

Summary of results Polycyclic Aromatic Hydrocarbons P23 - En-Score

Labcode: LC0021

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Fluoranthene	ng/l	147 ± 7.76	139 ± 3.24	26.4	94.6	-0.78
Fluorene	ng/l	84.9 ± 4.59	85.9 ± 2.41	11.9	101	0.15
Indeno[1,2,3-cd]pyrene	ng/l	76.4 ± 5.56	62.8 ± 2.4	10.7	82.2	-1.86
Naphthalene	ng/l	137 ± 8.6	152 ± 2.9	28.9	111	1.41
Phenanthrene	ng/l	144 ± 2.72	148 ± 3	21.6	103	0.62
Pyrene	ng/l	144 ± 7.27	136 ± 3.06	23.1	94.1	-0.89



E9. Methodenübersicht / Overview of methods

LabCode	Sample	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene
LC0001	P23A	GC-MS; house method	GC-MS; house method	GC-MS; house method	GC-MS; house method	GC-MS (Screening); Screening BAFU	GC-MS; house method
LC0002	P23A	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540
LC0003	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0004	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0005	P23A	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)
LC0006	P23A					GC-MS; EPA 525.2	GC-MS; EPA 525.2
LC0007	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0008	P23A						
LC0009	P23A	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0010	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0011	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0012	P23A	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0013	P23A	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction
LC0014	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0015	P23A	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980
LC0016	P23A	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039
LC0017	P23A						
LC0018	P23A						
LC0019	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0020	P23A	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;
LC0021	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993

LabCode	Sample	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenzo[a,h]anthracene	Fluoranthene
LC0001	P23A		GC-MS; house method	GC-MS; house method		GC-MS; house method
LC0002	P23A	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540
LC0003	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0004	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0005	P23A	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)
LC0006	P23A	GC-MS; EPA 525.2	GC-MS; EPA 525.2			
LC0007	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0008	P23A					
LC0009	P23A	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0010	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0011	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0012	P23A	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0013	P23A	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction
LC0014	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0015	P23A	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980
LC0016	P23A	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039
LC0017	P23A					
LC0018	P23A					
LC0019	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0020	P23A	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;
LC0021	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993

LabCode	Sample	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
LC0001	P23A	GC-MS; house method		GC-MS; house method	GC-MS; house method	GC-MS; house method
LC0002	P23A	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540
LC0003	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0004	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0005	P23A	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)
LC0006	P23A		GC-MS; EPA 525.2			
LC0007	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0008	P23A					
LC0009	P23A	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0010	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0011	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0012	P23A	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0013	P23A	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction
LC0014	P23A	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0015	P23A	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980
LC0016	P23A	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039		GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039
LC0017	P23A					
LC0018	P23A					
LC0019	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0020	P23A	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;
LC0021	P23A	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993

LabCode	Sample	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene
LC0001	P23B	GC-MS; house method	GC-MS; house method	GC-MS; house method	GC-MS; house method	GC-MS (Screening); Screening BAFU	GC-MS; house method
LC0002	P23B	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540
LC0003	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0004	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0005	P23B	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)
LC0006	P23B					GC-MS; EPA 525.2	GC-MS; EPA 525.2
LC0007	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0008	P23B						
LC0009	P23B	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0010	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0011	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0012	P23B	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0013	P23B	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction
LC0014	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0015	P23B	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980
LC0016	P23B	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039
LC0017	P23B						
LC0018	P23B						
LC0019	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0020	P23B	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;
LC0021	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993

LabCode	Sample	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenzo[a,h]anthracene	Fluoranthene
LC0001	P23B		GC-MS; house method	GC-MS; house method		GC-MS; house method
LC0002	P23B	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540
LC0003	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0004	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0005	P23B	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)
LC0006	P23B	GC-MS; EPA 525.2	GC-MS; EPA 525.2			
LC0007	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0008	P23B					
LC0009	P23B	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0010	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0011	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0012	P23B	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0013	P23B	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction
LC0014	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0015	P23B	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980
LC0016	P23B	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039
LC0017	P23B					
LC0018	P23B					
LC0019	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0020	P23B	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;
LC0021	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993

LabCode	Sample	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
LC0001	P23B	GC-MS; house method		GC-MS; house method	GC-MS; house method	GC-MS; house method
LC0002	P23B	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540	GC-MS; ISO 28540
LC0003	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0004	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0005	P23B	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)	GC-MS; ISO 28540 (F40)
LC0006	P23B		GC-MS; EPA 525.2			
LC0007	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0008	P23B					
LC0009	P23B	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0010	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0011	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0012	P23B	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)	HPLC-FLD; EN ISO 17993 (F18)
LC0013	P23B	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction	GC-MS; liquid-liquid extraction
LC0014	P23B	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39	GC-MS; DIN 38407-39
LC0015	P23B	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980	GC-MS; DIN EN 15980
LC0016	P23B	GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039		GC-MS (SPME); ISS.CAB.039	GC-MS (SPME); ISS.CAB.039
LC0017	P23B					
LC0018	P23B					
LC0019	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993
LC0020	P23B	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;	GC-MS/MS;
LC0021	P23B	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993	HPLC-FLD; EN ISO 17993