FLUXANA

Final Proficiency Test Report

FLX-CRM 113, FLX-CRM 114, FLX-CRM 115, FLX-CRM 116, FLX-CRM 117

Bedburg-Hau, 03.06.2014

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Statistics and Report
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Summary of test results

FLX-CRM 113	Mean %	U (95%)	s_r	s_R	Mean - 2*s_R	Mean + 2*s_R
Al2O3	5,039	±0,050	0,020	0,115	4,809	5,269
CaO	63,683	±0,269	0,119	0,618	62,447	64,920
Cr2O3	0,008	±0,001	0,001	0,002	0,004	0,012
Fe2O3	2,758	±0,027	0,013	0,062	2,635	2,882
K2O	0,586	±0,028	0,018	0,064	0,458	0,713
MgO	2,453	±0,029	0,012	0,066	2,321	2,585
Mn2O3	0,22	±0,019	0,002	0,035	0,149	0,290
Na2O	0,106	±0,031	0,008	0,060	-0,013	0,225
P2O5	0,137	±0,007	0,002	0,012	0,112	0,162
SiO2	21,098	±0,136	0,073	0,309	20,480	21,715
SrO	0,063	±0,010	0,001	0,017	0,030	0,097
Sulfate expressed as SO3	2,41	*	0,009	0,080	2,250	2,570
Sulfide expressed as S	0,137	±0,019	0,007	0,019	0,100	0,174
Total S expressed as SO3	2,55	±0,067	0,030	0,131	2,287	2,812
TiO2	0,231	±0,010	0,007	0,019	0,193	0,269
ZnO	0,028	±0,004	0,000	0,005	0,017	0,039
LOI (1h @ 950°C) observed	1,47	±0,055	0,034	0,127	1,216	1,725
Sum (SO3 wet chemistry)	100,63					
Sum (SO3 xrf)	100,43					
Total S (Sulfate+Sulfide) SO3	2,75					

FLX-CRM 114	Mean %	U (95%)	s_r	s_R	Mean - 2*s_R	Mean + 2*s_R
Al2O3	6,941	±0,086	0,029	0,197	6,548	7,335
CaO	51,188	±0,285	0,147	0,656	49,876	52,500
Cr2O3	0,009	±0,002	0,000	0,003	0,002	0,015
Fe2O3	1,438	±0,028	0,009	0,064	1,309	1,566
K2O	0,903	±0,031	0,017	0,070	0,764	1,042
MgO	4,84	±0,046	0,019	0,106	4,628	5,053
Mn2O3	0,148	±0,014	0,002	0,026	0,097	0,200
Na2O	0,26	±0,031	0,009	0,063	0,133	0,387
P2O5	0,024	±0,004	0,001	0,008	0,009	0,040
SiO2	28,702	±0,156	0,095	0,352	27,998	29,406
SrO	0,102	±0,013	0,001	0,022	0,058	0,146
Sulfate expressed as SO3	2,48	*	0,010	0,080	2,320	2,640
Sulfide expressed as S	0,676	±0,182	0,009	0,179	0,319	1,033
Total S expressed as SO3	4,067	±0,202	0,025	0,387	3,293	4,841
TiO2	0,518	±0,014	0,009	0,026	0,467	0,570
ZnO	0,022	±0,005	0,001	0,007	0,008	0,036
LOI (1h @ 950°C) observed	1,022	±0,063	0,026	0,147	0,729	1,315
Sum (SO3 wet chemistry)	100,29					
Sum (SO3 xrf)	100,18					
Total S (Sulfate+Sulfide) SO3	4,17					

FLX-CRM 115	Mean %	U (95%)	s_r	s_R	Mean - 2*s_R	Mean + 2*s_R
Al2O3	8,121	±0,080	0,031	0,185	7,752	8,491
CaO	53,777	±0,280	0,165	0,644	52,489	55,065
Cr2O3	0,008	±0,003	0,001	0,004	0,000	0,016
Fe2O3	1,06	±0,018	0,008	0,040	0,980	1,141
K2O	0,594	±0,028	0,010	0,064	0,465	0,722
MgO	2,874	±0,043	0,011	0,099	2,676	3,071
Mn2O3	0,2	±0,021	0,002	0,039	0,123	0,277
Na2O	0,179	±0,027	0,008	0,055	0,070	0,289
P2O5	0,071	±0,007	0,001	0,012	0,047	0,095
SiO2	27,319	±0,194	0,137	0,438	26,443	28,196
SrO	0,11	±0,013	0,004	0,021	0,067	0,152
Sulfate expressed as SO3	2,36	*	0,014	0,080	2,200	2,520
Sulfide expressed as S	0,611	±0,340	0,002	0,333	-0,055	1,276
Total S expressed as SO3	3,899	±0,263	0,025	0,504	2,891	4,908
TiO2	0,597	±0,016	0,003	0,029	0,539	0,655
ZnO	0,01	±0,002	0,000	0,003	0,004	0,015
LOI (1h @ 950°C) observed	1,315	±0,064	0,034	0,149	1,016	1,614
Sum (SO3 wet chemistry)	100,12					
Sum (SO3 xrf)	100,13					
Total S (Sulfate+Sulfide) SO3	3,89					

FLX-CRM 116	Mean %	U (95%)	s_r	s_R	Mean - 2*s_R	Mean + 2*s_R
Al2O3	9,064	±0,104	0,028	0,239	8,586	9,542
CaO	49,861	±0,323	0,100	0,741	48,378	51,343
Cr2O3	0,007	±0,003	0,001	0,004	0,000	0,014
Fe2O3	0,966	±0,023	0,008	0,054	0,858	1,074
K2O	0,662	±0,028	0,008	0,063	0,536	0,788
MgO	4,398	±0,047	0,020	0,108	4,183	4,614
Mn2O3	0,221	±0,023	0,005	0,043	0,135	0,307
Na2O	0,208	±0,036	0,008	0,073	0,063	0,354
P2O5	0,029	±0,004	0,001	0,007	0,015	0,043
SiO2	30,711	±0,175	0,090	0,395	29,921	31,501
SrO	0,081	±0,012	0,001	0,020	0,040	0,122
Sulfate expressed as SO3	1,21	*	0,008	0,080	1,050	1,370
Sulfide expressed as S	0,737	±0,249	0,006	0,244	0,249	1,225
Total S expressed as SO3	3,142	±0,235	0,033	0,461	2,220	4,063
TiO2	0,683	±0,018	0,008	0,033	0,616	0,750
ZnO	0,016	±0,003	0,001	0,004	0,007	0,024
LOI (1h @ 950°C) observed	-0,164	±0,175	0,015	0,343	-0,849	0,521
Sum (SO3 wet chemistry)	99,80					
Sum (SO3 xrf)	99,89					
Total S (Sulfate+Sulfide) SO3	3,05					

FLX-CRM 117	Mean %	U (95%)	s_r	s_R	Mean - 2*s_R	Mean + 2*s_R
Al2O3	7,684	±0,095	0,042	0,219	7,246	8,123
CaO	54,262	±0,300	0,100	0,690	52,882	55,642
Cr2O3	0,007	±0,003	0,000	0,004	0,000	0,014
Fe2O3	1,457	±0,021	0,009	0,048	1,361	1,552
K2O	0,871	±0,038	0,011	0,085	0,701	1,040
MgO	2,883	±0,046	0,019	0,106	2,671	3,095
Mn2O3	0,181	±0,017	0,001	0,033	0,115	0,246
Na2O	0,205	±0,025	0,009	0,050	0,105	0,306
P2O5	0,03	±0,005	0,001	0,009	0,012	0,048
SiO2	28,123	±0,145	0,062	0,328	27,468	28,779
SrO	0,092	±0,013	0,001	0,021	0,050	0,135
Sulfate expressed as SO3	1,82	*	0,008	0,080	1,660	1,980
Sulfide expressed as S	0,602	±0,395	0,007	0,387	-0,171	1,376
Total S expressed as SO3	3,494	±0,142	0,042	0,273	2,948	4,039
TiO2	0,556	±0,016	0,005	0,029	0,497	0,615
ZnO	0,023	±0,004	0,001	0,005	0,013	0,033
LOI (1h @ 950°C) observed	0,215	±0,097	0,026	0,213	-0,211	0,640
Sum (SO3 wet chemistry)	99,91					
Sum (SO3 xrf)	100,08					
Total S (Sulfate+Sulfide) SO3	3,33					

*value not used from PT because of use of reference value
All values are in mass % and are based on original sample material.

Mean	**calculated, for sulfate reference value**
U (95%)	**uncertainty calculated for a confidence interval of 95% (k=2)**
s_r	**Repeatability standard deviation**
s_R	**Reproducibility standard deviation**
Range of tolerance	**All labs within this range show satisfactory performance**

Interpretation of the results

The proficiency test shows a very good agreement between the participating laboratories. The reproducibility standard deviation determined corresponds very well to the reproducibility limit of ISO 29581-2:2010. For most of the xrf elements the 'expert' performance was achieved, for all xrf elements the 'normal' performance was achieved.
The repeatability standard deviation of the LOI is in agreement with the ISO 29581-2:2010 while the reproducibility standard deviation shows higher values than given in ISO 29581-2:2010.
Between the laboratories no agreement is seen for sulfate and sulfide determined by wet chemistry. There the reproducibility standard deviation calculated from the PT is at least 10 times worse than given by EN 196-2:2013-10. For sulfate we determined in FLUXANA a reference value independent of the PT. For sulfide the results can only be seen as information but cannot be used for lab performance evaluation.
Nevertheless the consensus value for sulfide and the reference value for sulfate do correspond well with the total sulfur value determined by xrf. Only CRM 113 shows a difference of 0.2 %.
The concentration values were not corrected for any sulfide contents.

Introduction

X-ray fluorescence analysis is a widely used technique for the analysis of oxidic materials. Different ISO methods like e.g. 12677:2013 or 29581-2:2010 describe the use in detail.

However for the calibration of xrf instruments dedicated standard material is needed. As a world wide supplier for xrf laboratories FLUXANA has developed a number of services to support xrf users. One of these services is the production of new reference materials and the organization of proficiency tests (PT).

From 2011 FLUXANA has introduced its own quality management.

In February 2014 FLUXANA has received accreditation from German DAKKS according DIN EN ISO/IEC 17025 for the test laboratory in Bedburg-Hau.

The production of reference materials and the performance of proficiency tests is not yet accredited. However FLUXANA has applied for the accreditation process at DAKKS.

All evaluations are performed in agreement with DIN EN ISO/IEC 17043:2010, ISO Guide 34:2009, ISO Guide 31:2000 and ISO Guide 35:2006.

Proficiency test provider

FLUXANA GmbH & CO.KG
Borschelstrasse 3
47551 Bedburg-Hau, Germany
Coordinator: Charlotte Winkels-Herding, QM
Reponsable for evaluation and data processing: Dr. Rainer Schramm, CEO
Reponsable for inhouse analytical tests: Dr. Barbara Schäfer, Head of test laboratory

Subcontractors

Delivery of material by Wilhelm Dyckerhoff Institut
Performing analysis by Participants of PT

Proficiency test items

The materials were delivered by:
Wilhelm Dyckerhoff Institut
Dyckerhoff Str.7
65203 Wiesbaden
Germany

From each material about 20kg were delivered and from FLUXANA homogeneously distributed into 50ml bottles. The bottles were then vacuum packed for storage.

Test item	Description
FLX-CRM 113	CEM II/A-S 42,5N
FLX-CRM 114	CEM III/A 42,5N-LH/NA
FLX-CRM 115	CEM III/A 42,5N
FLX-CRM 116	CEM III/B 42,5N LH/LS
FLX-CRM 117	CEM III/A 42,5N NA

Proficiency test

All laboratories which applied until 31.08.2013 for the participation of this proficiency test got their samples in September 2013 and sent in their results until end of October 2013.

Certificate of Analysis

There is a certification process planned according ISO Guide 34:2009. This will be independent from this proficiency test.

Homogeneity and Stability

The material was used as delivered. Based on ISO Guide 35:2006 and DIN ISO 13528:2009-01
a homogeneity and stability study of the materials were performed.

Metrological traceability

The analysis methods used by the participants are based on international measurement standards like ISO 29581-2 (xrf fusion), EN 196-2, DIN EN 15169, ASTM D 6357 and ASTM D 4326 and are considered as traceable. Other methods like XRF (Pellet) or the standardless method are not seen as traceable. Values from these methods will not be taken into account for the calculation of the assigned values and the target standard deviation.

Measurement uncertainty

Measurement uncertainty includes components arising from systematic effects, such as components associated with corrections and the assigned quantity values of measurement standards, as well as the definitional uncertainty. The participants did not provide any uncertainty with the concentration values. For this proficiency test the measurement uncertainty for the final mean was calculated from the repeatability and reproducibility standard deviations.

Evaluation

Launching the process of accreditation according DIN EN ISO/IEC 17043:2010-05 FLUXANA has adapted the evaluation process to robust statistical methods.

The assigned values were determined as consensus values from the participants who used traceable methods. Additionally all statistical data were calculated using robust statistical methods according DIN ISO 13528:2009-01, ISO/TS 20612:2007 and DIN 38402-45:2014-06.
For sulfate there was no consensus between the participants using EN 196-2. Therefore the assigned value was determined independently in the FLUXANA laboratory according EN-196-2:2013-10. The reproducibility standard deviation to evaluate the participants was taken from EN-196-2:2013.

Advantages of using robust statistics

Statistical methods are robust in the sense that any outliers have only a limited effect on the overall result. Steps were taken to ensure that the results are still meaningful even if the proportion of outliers is 1/3. Robust statistics are also preferable for small populations.

Outliers

All data were used for the robust statistics after a check for obvious blunders. Outliers in the statistical sense are typically not detected when using robust statistical methods because the robust A+S algorithms were found to work better than the classical approach (which is outlier detection plus arithmetic mean and classical s.d. formula). Outlier shown in the table are only based on z-scores and marked with E or B.

Number of measurements

All participants were requested to perform two measurements. This is necessary to perform the repeatability standard deviation for the laboratories. Nevertheless a few participants who performed only one measurement were taken into account and were not excluded. Robust statistics can handle different number of measurements per participant.

Publication of the results

All participants will be informed about the results of the PT with this report. Which results were delivered by which laboratory will be kept confidential. All laboratories are encoded where the code is only known by the organizer and the individual laboratory. The final report will be published on the FLUXANA website. A preliminary report was sent out for verification by the participants.

Further information

In the following evaluation report all accepted laboratory data are listed. Also all used methods are specified. Laboratories which are working under DIN EN ISO/IEC 17025 accreditation are highlighted. Under Remark additional information is given.
The concentration values were not corrected for any sulfide contents.

Participants

Montanuniversität Leoben	Austria
Dorfner Anzaplan	Germany
Dyckerhoff AG	Germany
Geozentrum Nordbayern	Germany
Holcim (Deutschland) AG	Germany
NUTECH GmbH	Germany
Phoenix Zementwerke Krogbeumker GmbH & Co. KG	Germany
Quarzwerke GmbH	Germany
Terrachem GmbH	Germany
CMS Clinker Sdn Bhd	Malaysia
TASEK Corporation Berhad	Malaysia
Ohorongo Cement (PTY) LTD, Sargberg Plant	Namibia
SGS Nederland B.V.	Netherlands
Cimpor TEC	Portugal
Holcim (Srbjia) d.o.o.	Serbia
PPc Cement Group Lab Services	South Africa
FUNDACION ITMA	Spain
IK4-AZTERLAN	Spain
INSTITUTO NACIONAL DEL CARBÓN (INCAR-CSIC)	Spain
SSAB EMEA	Sweden
Holcim (Schweiz) AG	Switzerland
Thermo Fisher Scientific	Switzerland
Bursa Cement	Turkey
Cimentas Cement	Turkey
Cimko Cement	Turkey
Goltas Cement	Turkey
Votorantim Cement - Ankara Plant	Turkey
Votorantim Cement - Corum Plant	Turkey
Votorantim Cement - Samsun Plant	Turkey
Votorantim Cement - Sivas Plant	Turkey
Votorantim Cement - Yozgat Plant	Turkey
University of Kentucky	USA
Analytical and Experimental Center for Geology	Vietnam

Statistical Evaluation

Calculation of Mean m

The mean m for all laboratories was calculated using the Hampel estimator (ISO/TS 20612:2007 9.2.3) based on the laboratory means µ.

Calculation of reproducibility standard deviation s_R

The reproducibility standard deviation s_R was calculated using the Q-method (ISO/TS 20612:2007 9.2.3).

Calculation of repeatability standard deviation s_r

The repeatability standard deviation s_r was also calculated using the Q-method.

Uncertainty of Mean U

The uncertainty of mean U for k=2 (95% confidence level) was calculated from the reproducibility standard deviation s_R and the laboratories p with valid data according DIN ISO 13528:2009-01 and Nordtest TR 537 ed. 3.1:

(1) $$U = 2 * 1.25 * \frac{s_R}{\sqrt{p}}$$

Laboratory performance

Laboratory proficiency assessment was based on z-scores.

From all laboratory means µ the **z-score** z was calculated:

(2) $$z = \frac{|m - \mu|}{s_R}$$

m	Mean value of all laboratories (assigned value)
µ	Mean value of individual laboratory
s_R	Reproducibility standard deviation

Assessment on z-scores:

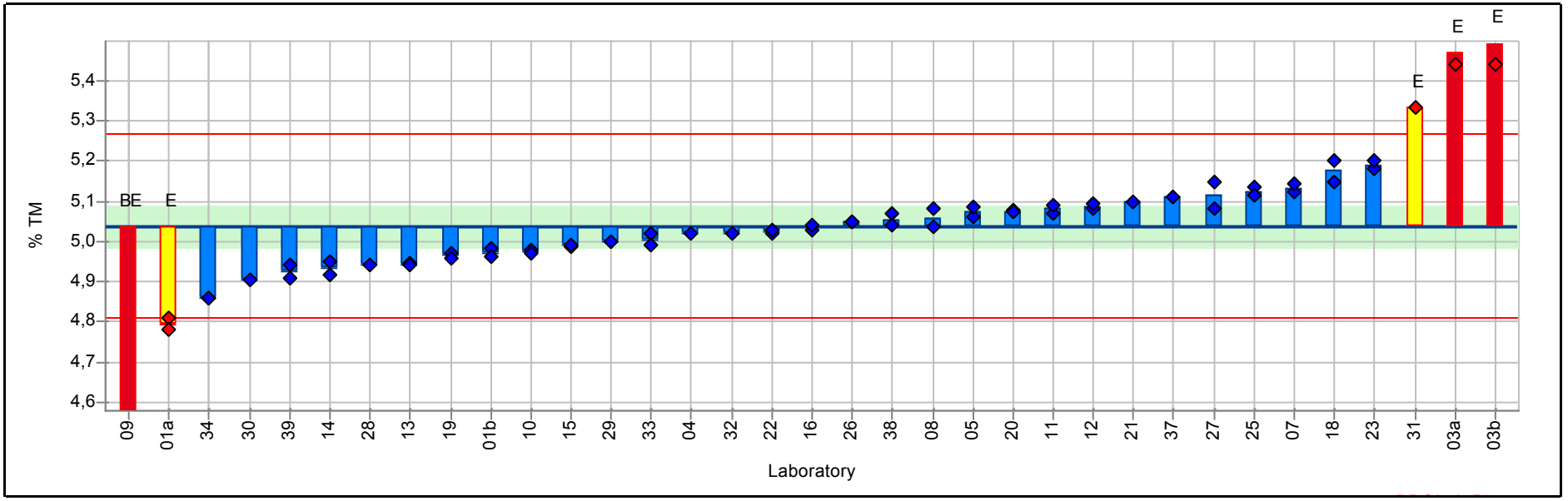
z <= 2.0	indicates ‚satisfactory' performance = generates no signal
2.0 < z < 3.0	indicates ‚questionable' performance = generates a warning signal
z >= 3.0	indicates ‚unsatisfactory' performance = generates an action signal

All laboratory means µ with z >= 2 were marked with an '**E**'. z-scores with 3 >= z >= 2 were highlighted with a yellow color, z-scores with z >= 3 were highlighted with a red color.

RV113

Summary results

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,115 % TM**
Measurand:	**Al2O3**	**Repeatability s.d.:**	**0,020 % TM**
Mean ± U(Mean):	**5,039 ± 0,050 % TM**	**Range of tolerance:**	**4,809 - 5,269 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**5,039 % TM (Empirical value)**	**Target s.d.:**	**0,115 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	4,795	0,021	-2,125	E	4,809	4,780		XRF (fusion)	Reconstitution Method
01b	4,971	0,014	-0,589		4,981	4,961		Standardless info only	fusion

RV113

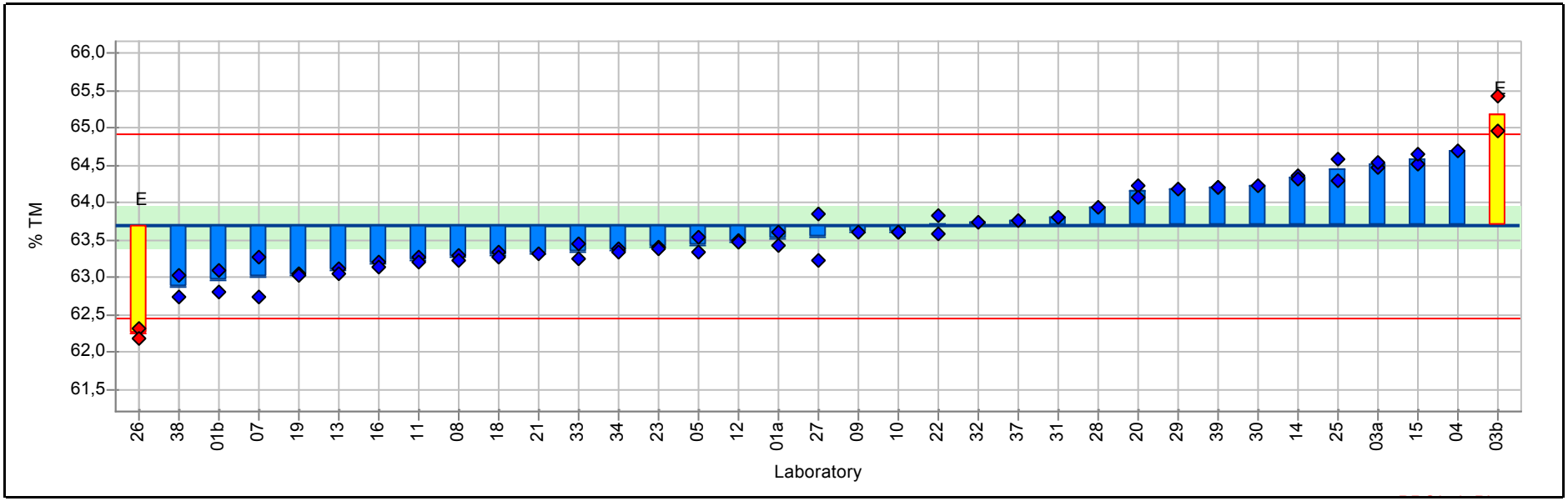
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
03a	5,470	0,042	3,753	E	5,500	5,440		ICP-OES	ASTM D 6357
03b	5,495	0,078	3,971	E	5,550	5,440		XRF (fusion)	ASTM D 4326
04	5,020		-0,163		5,020			XRF (fusion)	
05	5,075	0,019	0,312		5,061	5,088	ISO 17025	XRF (fusion)	
07	5,132	0,014	0,812		5,122	5,142	ISO 17025	XRF (fusion)	
08	5,059	0,034	0,177		5,035	5,083		XRF (fusion)	
09	4,100		-8,168	BE	4,100		ISO 17025	XRF (Pellet) info only	
10	4,975	0,007	-0,554		4,980	4,970	ISO 17025	XRF (fusion)	
11	5,080	0,014	0,359		5,070	5,090	ISO 17025	XRF (fusion)	
12	5,088	0,010	0,427		5,081	5,095		XRF (fusion)	
13	4,944	0,001	-0,828		4,944	4,943		XRF (fusion)	
14	4,934	0,025	-0,915		4,916	4,951		XRF (fusion)	
15	4,989	0,001	-0,429		4,988	4,990		XRF (fusion)	
16	5,035	0,007	-0,032		5,030	5,040	ISO 17025	XRF (fusion)	
18	5,175	0,035	1,186		5,150	5,200		XRF (fusion)	
19	4,965	0,007	-0,641		4,970	4,960	ISO 17025	XRF (fusion)	
20	5,075	0,004	0,315		5,077	5,072		XRF (fusion)	
21	5,100		0,533		5,100			XRF (fusion)	
22	5,025	0,007	-0,119		5,020	5,030		XRF (fusion)	
23	5,190	0,014	1,317		5,180	5,200		XRF (fusion)	
25	5,125	0,013	0,751		5,134	5,116		XRF (fusion)	
26	5,048	0,002	0,085		5,050	5,047		XRF (fusion)	
27	5,115	0,049	0,664		5,080	5,150		XRF (fusion)	
28	4,940		-0,859		4,940			XRF (fusion)	
29	5,000		-0,337		5,000			XRF (fusion)	
30	4,905		-1,163		4,905			XRF (fusion)	
31	5,335		2,578	E	5,335			XRF (fusion)	
32	5,020		-0,163		5,020			XRF (fusion)	
33	5,005	0,021	-0,293		5,020	4,990	ISO 17025	XRF (fusion)	
34	4,860	0,000	-1,555		4,860	4,860		XRF (fusion)	
37	5,110		0,620		5,110			XRF (fusion)	
38	5,055	0,021	0,142		5,070	5,040		XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
39	4,926	0,023	-0,981		4,910	4,942	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,618 % TM**
Measurand:	**CaO**	**Repeatability s.d.:**	**0,119 % TM**
Mean ± U(Mean):	**63,683 ± 0,269 % TM**	**Range of tolerance:**	**62,447 - 64,920 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**63,683 % TM (Empirical value)**	**Target s.d.:**	**0,618 % TM (Empirical value)**



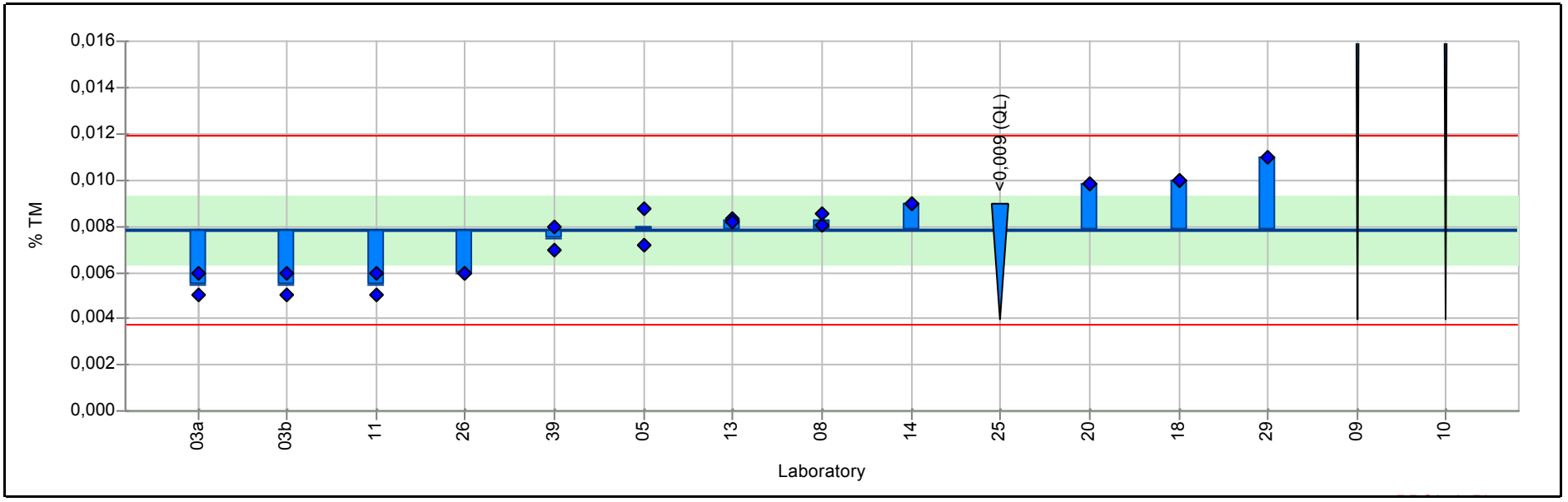
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	63,525	0,129	-0,256		63,434	63,616		XRF (fusion)	Reconstitution Method
01b	62,954	0,192	-1,179		62,818	63,090		Standardless info only	fusion
03a	64,505	0,035	1,329		64,480	64,530		ICP-OES	ASTM D 6357
03b	65,190	0,325	2,437	E	64,960	65,420		XRF (fusion)	ASTM D 4326
04	64,690		1,629		64,690			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	63,439	0,139	-0,395		63,341	63,537	ISO 17025	XRF (fusion)	
07	63,004	0,378	-1,098		62,737	63,271	ISO 17025	XRF (fusion)	
08	63,268	0,053	-0,672		63,305	63,230		XRF (fusion)	
09	63,600		-0,134		63,600		ISO 17025	XRF (Pellet) info only	
10	63,600	0,000	-0,134		63,600	63,600	ISO 17025	XRF (fusion)	
11	63,235	0,049	-0,725		63,270	63,200	ISO 17025	XRF (fusion)	
12	63,477	0,015	-0,334		63,487	63,466		XRF (fusion)	
13	63,085	0,049	-0,967		63,120	63,050		XRF (fusion)	
14	64,335	0,036	1,055		64,361	64,310		XRF (fusion)	
15	64,586	0,088	1,461		64,524	64,649		XRF (fusion)	
16	63,175	0,035	-0,822		63,200	63,150	ISO 17025	XRF (fusion)	
18	63,305	0,049	-0,612		63,340	63,270		XRF (fusion)	
19	63,035	0,007	-1,048		63,040	63,030	ISO 17025	XRF (fusion)	
20	64,159	0,109	0,769		64,236	64,082		XRF (fusion)	
21	63,310		-0,603		63,310			XRF (fusion)	
22	63,710	0,170	0,044		63,590	63,830		XRF (fusion)	
23	63,400	0,014	-0,458		63,410	63,390		XRF (fusion)	
25	64,438	0,199	1,220		64,297	64,578		XRF (fusion)	
26	62,249	0,101	-2,319	E	62,321	62,178		XRF (fusion)	
27	63,530	0,438	-0,248		63,840	63,220		XRF (fusion)	
28	63,940		0,416		63,940			XRF (fusion)	
29	64,175		0,796		64,175			XRF (fusion)	
30	64,225		0,876		64,225			XRF (fusion)	
31	63,815		0,213		63,815			XRF (fusion)	
32	63,735		0,084		63,735			XRF (fusion)	
33	63,345	0,148	-0,547		63,450	63,240	ISO 17025	XRF (fusion)	
34	63,360	0,028	-0,523		63,380	63,340		XRF (fusion)	
37	63,770		0,141		63,770			XRF (fusion)	
38	62,880	0,198	-1,299		63,020	62,740		XRF (fusion)	
39	64,200	0,000	0,836		64,200	64,200	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,002 % TM**
Measurand:	**Cr2O3**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,008 ± 0,001 % TM**	**Range of tolerance:**	**0,004 - 0,012 % TM (|z-score| <= 2,00)**
No. of laboratories:	**12**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,008 % TM (Empirical value)**	**Target s.d.:**	**0,002 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,005	0,001	-1,154		0,006	0,005		ICP-OES	ASTM D 6357
03b	0,005	0,001	-1,154		0,005	0,006		XRF (fusion)	ASTM D 4326
04								XRF (fusion)	

RV113

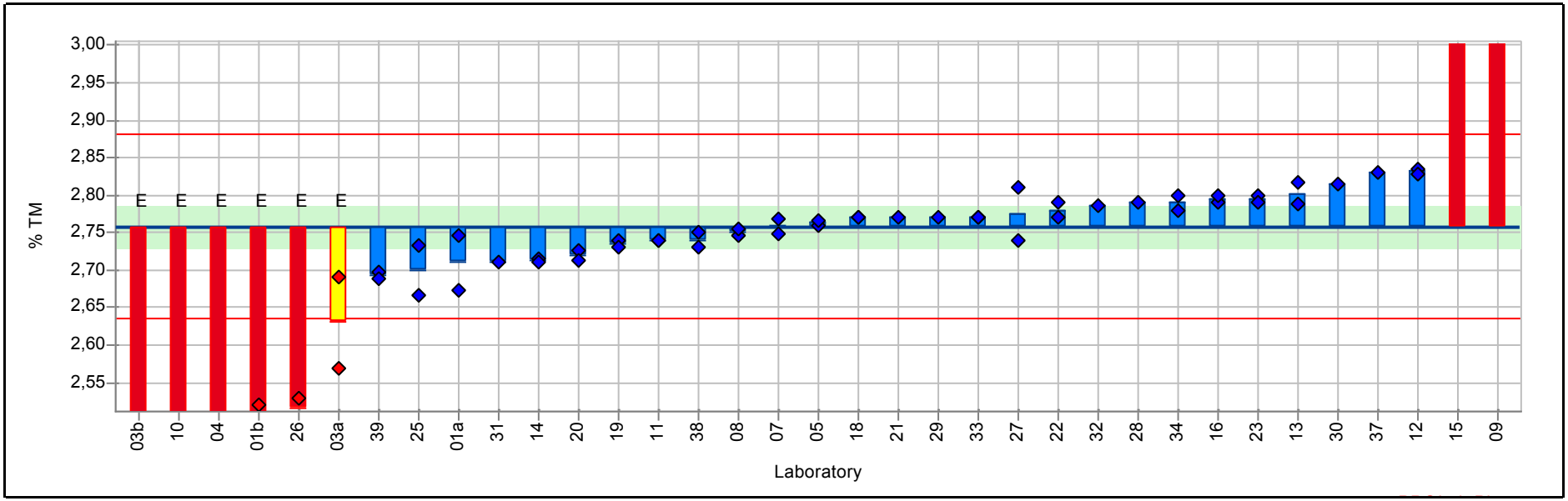
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,008	0,001	0,064		0,007	0,009	ISO 17025	XRF (fusion)	
07									
08	0,008	0,000	0,212		0,008	0,009		XRF (fusion)	
09					<0,100		ISO 17025	XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,005	0,001	-1,154		0,006	0,005	ISO 17025	XRF (fusion)	
12									
13	0,008	0,000	0,199		0,008	0,008		XRF (fusion)	
14	0,009	0,000	0,558		0,009	0,009		XRF (fusion)	
15								XRF (fusion)	
16									
18	0,010	0,000	1,048		0,010	0,010		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,010	0,000	0,967		0,010	0,010		XRF (fusion)	
21								XRF (fusion)	
22									
23									
25					<0,009	<0,009		XRF (fusion)	
26	0,006	0,000	-0,910		0,006	0,006		XRF (fusion)	
27									
28									
29	0,011		1,537		0,011			XRF (fusion)	
30									
31									
32									
33									
34									
37								XRF (fusion)	
38									
39	0,007	0,001	-0,176		0,007	0,008	ISO 17025	XRF (fusion)	ISO 29581-2:2010

E

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,062 % TM**
Measurand:	**Fe2O3**	**Repeatability s.d.:**	**0,013 % TM**
Mean ± U(Mean):	**2,758 ± 0,027 % TM**	**Range of tolerance:**	**2,635 - 2,882 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,758 % TM (Empirical value)**	**Target s.d.:**	**0,062 % TM (Empirical value)**

E



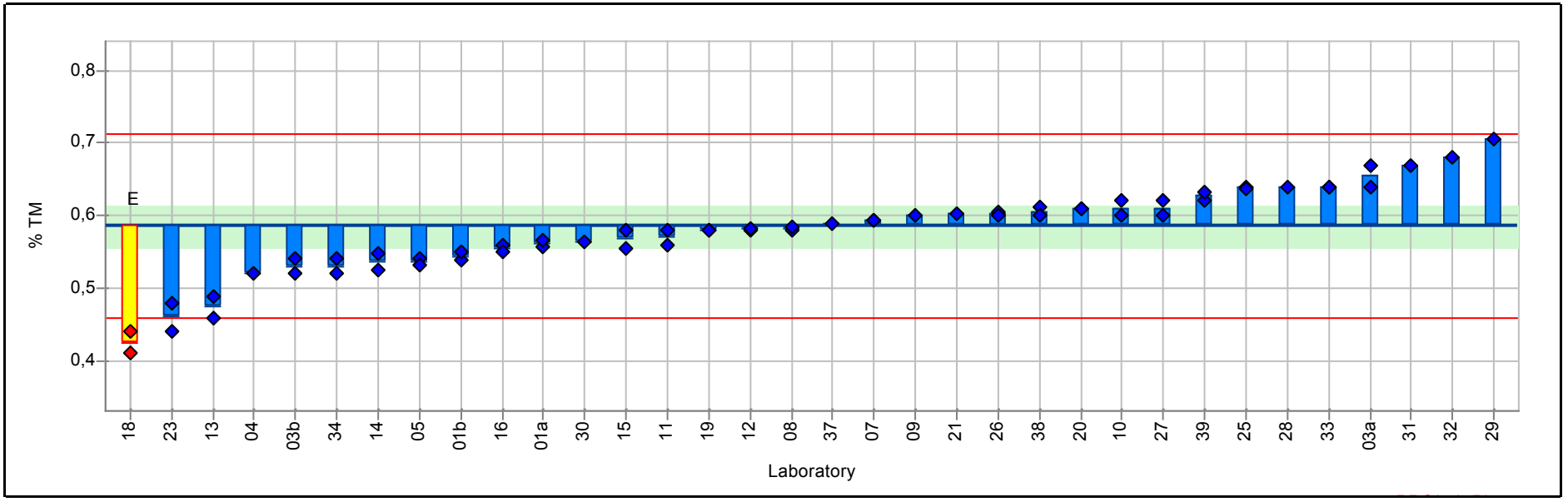
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	2,710	0,052	-0,782		2,673	2,747		XRF (fusion)	Reconstitution Method
01b	2,481	0,056	-4,499	E	2,441	2,520		Standardless info only	fusion
03a	2,630	0,085	-2,078	E	2,570	2,690		ICP-OES	ASTM D 6357
03b	2,120	0,042	-10,337	E	2,090	2,150		XRF (fusion)	ASTM D 4326
04	2,359		-6,467	E	2,359			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	2,764	0,005	0,088		2,760	2,767	ISO 17025	XRF (fusion)	
07	2,759	0,014	0,011		2,749	2,769	ISO 17025	XRF (fusion)	
08	2,750	0,007	-0,134		2,745	2,755		XRF (fusion)	
09	3,400		10,393	E	3,400		ISO 17025	XRF (Pellet) info only	
10	2,145	0,007	-9,933	E	2,150	2,140	ISO 17025	XRF (fusion)	
11	2,740	0,000	-0,296		2,740	2,740	ISO 17025	XRF (fusion)	
12	2,832	0,005	1,194		2,836	2,828		XRF (fusion)	
13	2,803	0,021	0,716		2,817	2,788		XRF (fusion)	
14	2,713	0,004	-0,734		2,716	2,710		XRF (fusion)	
15	3,120	0,001	5,851	E	3,119	3,120		XRF (fusion)	
16	2,795	0,007	0,594		2,790	2,800	ISO 17025	XRF (fusion)	
18	2,770	0,000	0,190		2,770	2,770		XRF (fusion)	
19	2,735	0,007	-0,377		2,740	2,730	ISO 17025	XRF (fusion)	
20	2,719	0,009	-0,630		2,726	2,713		XRF (fusion)	
21	2,770		0,190		2,770			XRF (fusion)	
22	2,780	0,014	0,352		2,770	2,790		XRF (fusion)	
23	2,795	0,007	0,594		2,800	2,790		XRF (fusion)	
25	2,699	0,047	-0,960		2,732	2,666		XRF (fusion)	
26	2,515	0,021	-3,940	E	2,530	2,500		XRF (fusion)	
27	2,775	0,049	0,271		2,740	2,810		XRF (fusion)	
28	2,790		0,513		2,790			XRF (fusion)	
29	2,770		0,190		2,770			XRF (fusion)	
30	2,815		0,918		2,815			XRF (fusion)	
31	2,710		-0,782		2,710			XRF (fusion)	
32	2,785		0,432		2,785			XRF (fusion)	
33	2,770	0,000	0,190		2,770	2,770	ISO 17025	XRF (fusion)	
34	2,790	0,014	0,513		2,800	2,780		XRF (fusion)	
37	2,830		1,161		2,830			XRF (fusion)	
38	2,740	0,014	-0,296		2,750	2,730		XRF (fusion)	
39	2,692	0,006	-1,066		2,697	2,688	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,064 % TM**
Measurand:	**K2O**	**Repeatability s.d.:**	**0,018 % TM**
Mean ± U(Mean):	**0,586 ± 0,028 % TM**	**Range of tolerance:**	**0,458 - 0,713 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,586 % TM (Empirical value)**	**Target s.d.:**	**0,064 % TM (Empirical value)**



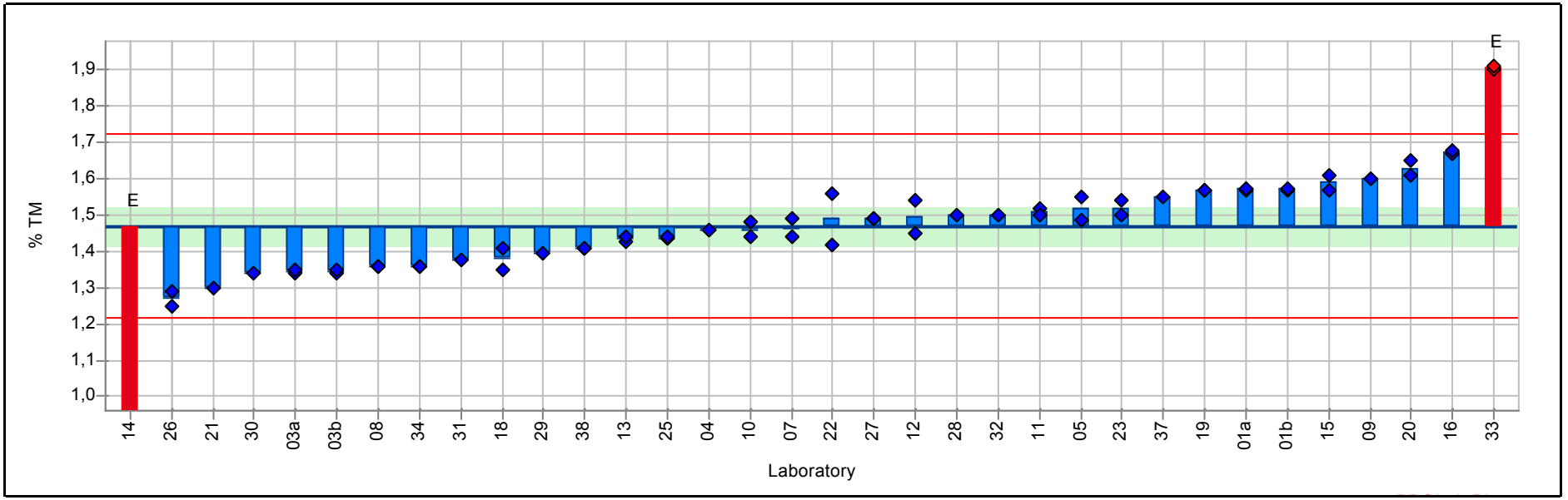
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,561	0,007	-0,387		0,556	0,566		XRF (fusion)	Reconstitution Method
01b	0,544	0,008	-0,646		0,539	0,550		Standardless info only	fusion
03a	0,655	0,021	1,090		0,670	0,640		ICP-OES	ASTM D 6357
03b	0,530	0,014	-0,873		0,540	0,520		XRF (fusion)	ASTM D 4326
04	0,520		-1,031		0,520			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,537	0,007	-0,767		0,542	0,532	ISO 17025	XRF (fusion)	
07	0,593	0,000	0,116		0,593	0,593	ISO 17025	XRF (fusion)	
08	0,582	0,003	-0,059		0,580	0,584		XRF (fusion)	
09	0,600		0,226		0,600		ISO 17025	XRF (Pellet) info only	
10	0,610	0,014	0,383		0,600	0,620	ISO 17025	XRF (fusion)	
11	0,570	0,014	-0,245		0,560	0,580	ISO 17025	XRF (fusion)	
12	0,581	0,000	-0,070		0,581	0,581		XRF (fusion)	
13	0,474	0,021	-1,748		0,460	0,489		XRF (fusion)	
14	0,536	0,016	-0,779		0,547	0,525		XRF (fusion)	
15	0,568	0,018	-0,280		0,581	0,555		XRF (fusion)	
16	0,555	0,007	-0,481		0,560	0,550	ISO 17025	XRF (fusion)	
18	0,425	0,021	-2,522	E	0,440	0,410		XRF (fusion)	
19	0,580	0,000	-0,088		0,580	0,580	ISO 17025	XRF (fusion)	
20	0,610	0,000	0,379		0,610	0,609		XRF (fusion)	
21	0,602		0,257		0,602			XRF (fusion)	
22									
23	0,460	0,028	-1,973		0,440	0,480		XRF (fusion)	
25	0,639	0,002	0,830		0,640	0,637		ICP-OES	
26	0,602	0,003	0,257		0,604	0,600		XRF (fusion)	
27	0,610	0,014	0,383		0,620	0,600		XRF (fusion)	
28	0,640		0,854		0,640			XRF (fusion)	
29	0,705		1,875		0,705			XRF (fusion)	
30	0,565		-0,324		0,565			XRF (fusion)	
31	0,670		1,325		0,670			XRF (fusion)	
32	0,680		1,482		0,680			XRF (fusion)	
33	0,640	0,000	0,854		0,640	0,640	ISO 17025	XRF (fusion)	
34	0,530	0,014	-0,873		0,520	0,540		XRF (fusion)	
37	0,590		0,069		0,590			XRF (fusion)	
38	0,606	0,007	0,320		0,611	0,601		XRF (fusion)	
39	0,627	0,008	0,658		0,622	0,633	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,127 % TM**
Measurand:	**LOI (1h @ 950°C) observed**	**Repeatability s.d.:**	**0,034 % TM**
Mean ± U(Mean):	**1,470 ± 0,055 % TM**	**Range of tolerance:**	**1,216 - 1,725 % TM (|z-score| <= 2,00)**
No. of laboratories:	**34**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,470 % TM (Empirical value)**	**Target s.d.:**	**0,127 % TM (Empirical value)**



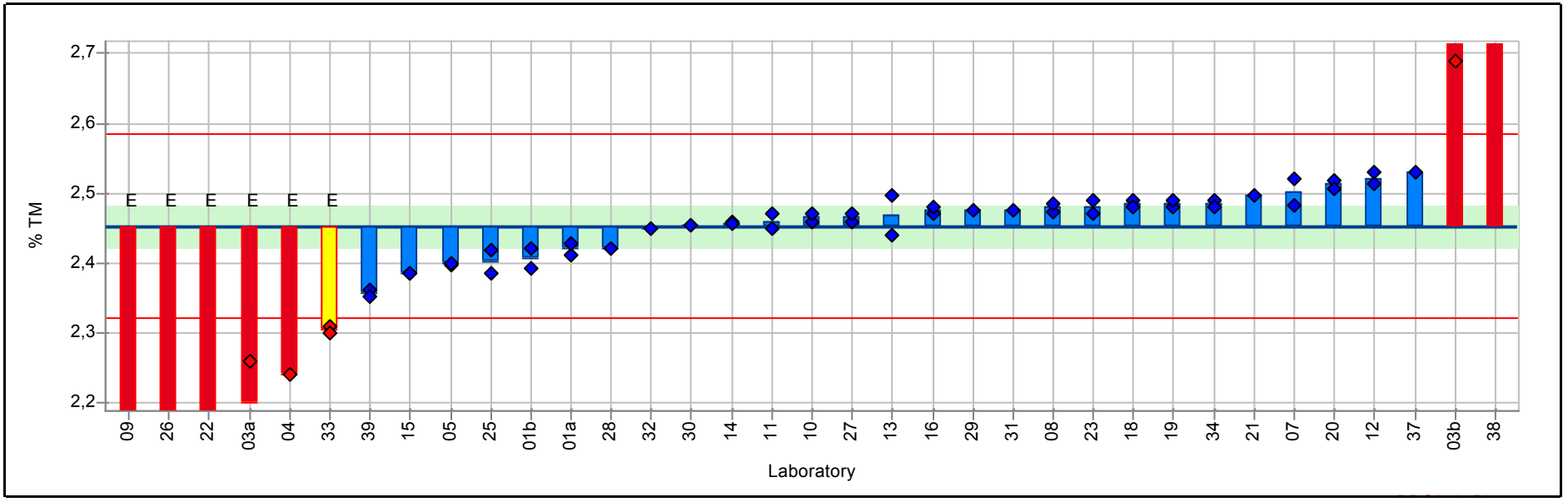
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	1,573	0,004	0,803		1,570	1,575		1h@950°C	Gravimetry
01b	1,573	0,004	0,803		1,570	1,575		1h@950°C	Gravimetry
03a	1,345	0,007	-0,984		1,340	1,350		1h@950°C	
03b	1,345	0,007	-0,984		1,340	1,350		1h@950°C	
04	1,460		-0,081		1,460			1h@950°C	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	1,518	0,047	0,372		1,551	1,484	ISO 17025	DIN EN 15169	
07	1,465	0,035	-0,042		1,490	1,440	ISO 17025	1h@950°C	
08	1,359	0,000	-0,873		1,359	1,359		1h@950°C	
09	1,600		1,019		1,600		ISO 17025	DIN 51719	
10	1,460	0,028	-0,081		1,480	1,440	ISO 17025	1h@950°C	Thermogravimetric analyzer
11	1,510	0,014	0,312		1,520	1,500	ISO 17025	Wet chemistry EN196-2	
12	1,495	0,064	0,194		1,540	1,450		1h@950°C	
13	1,434	0,007	-0,285		1,429	1,439		1h@950°C	gravimetric
14	0,830	0,028	-5,029	E	0,810	0,850		1h@950°C	
15	1,590	0,028	0,940		1,610	1,570		1h@950°C	
16	1,675	0,007	1,608		1,670	1,680	ISO 17025	Wet chemistry EN196-2	
18	1,380	0,042	-0,709		1,410	1,350		1h@950°C	
19	1,570	0,000	0,783		1,570	1,570	ISO 17025	TGA	TGA - not corrected -
20	1,630	0,028	1,254		1,610	1,650		Wet chemistry EN196-2	
21	1,300		-1,337		1,300			1h@950°C	
22	1,490	0,099	0,155		1,560	1,420		1h@950°C	
23	1,520	0,028	0,390		1,500	1,540		1h@950°C	
25	1,438	0,004	-0,258		1,435	1,440		1h@950°C	
26	1,270	0,028	-1,573		1,290	1,250		1h@950°C	
27	1,490	0,000	0,155		1,490	1,490		1h@950°C	
28	1,500		0,233		1,500			Wet chemistry EN196-2	
29	1,395		-0,591		1,395			Wet chemistry EN196-2	
30	1,340		-1,023		1,340			Wet chemistry EN196-2	
31	1,375		-0,748		1,375			Wet chemistry EN196-2	
32	1,500		0,233		1,500			Wet chemistry EN196-2	
33	1,908	0,006	3,438	E	1,904	1,912		1h@950°C	
34	1,360	0,000	-0,866		1,360	1,360		1h@950°C	
37	1,550		0,626		1,550			1h@950°C	
38	1,410	0,000	-0,474		1,410	1,410		1h@950°C	
39									

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,066 % TM**
Measurand:	**MgO**	**Repeatability s.d.:**	**0,012 % TM**
Mean ± U(Mean):	**2,453 ± 0,029 % TM**	**Range of tolerance:**	**2,321 - 2,585 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,453 % TM (Empirical value)**	**Target s.d.:**	**0,066 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	2,420	0,011	-0,499		2,412	2,428		XRF (fusion)	Reconstitution Method
01b	2,406	0,021	-0,703		2,392	2,421		Standardless info only	fusion
03a	2,200	0,085	-3,824	E	2,140	2,260		ICP-OES	ASTM D 6357
03b	2,845	0,219	5,925	E	2,690	3,000		XRF (fusion)	ASTM D 4326
04	2,240		-3,220	E	2,240			XRF (fusion)	

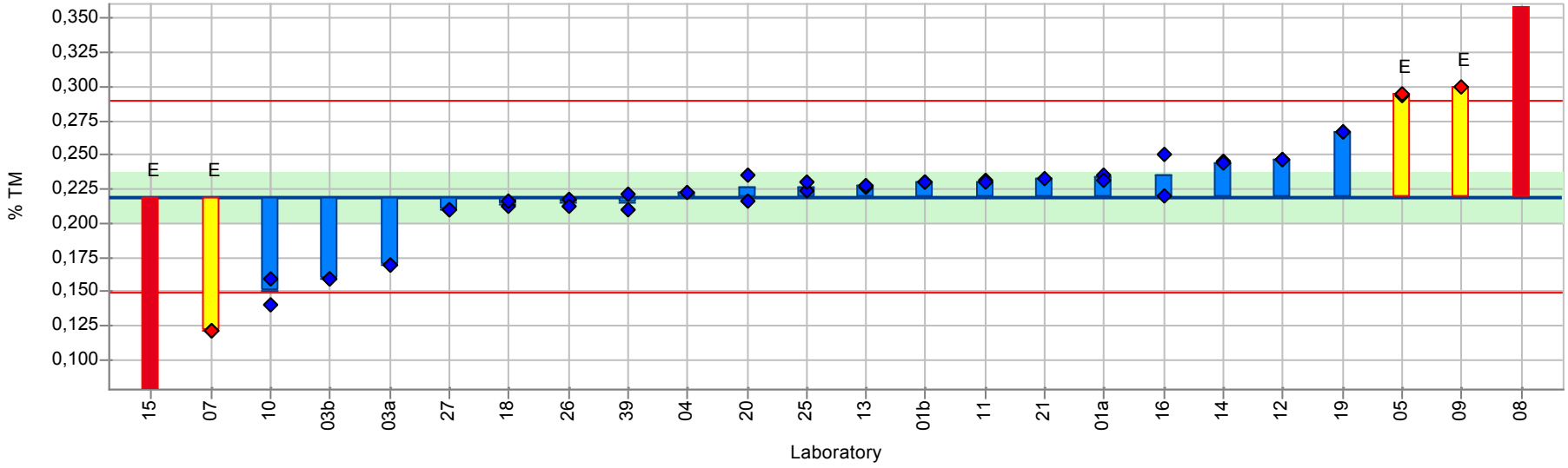
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	2,399	0,002	-0,821		2,398	2,400	ISO 17025	XRF (fusion)	
07	2,502	0,028	0,733		2,482	2,521	ISO 17025	XRF (fusion)	
08	2,480	0,008	0,404		2,474	2,485		XRF (fusion)	
09	2,100		-5,336	E	2,100		ISO 17025	XRF (Pellet) info only	
10	2,465	0,007	0,181		2,460	2,470	ISO 17025	XRF (fusion)	
11	2,460	0,014	0,105		2,470	2,450	ISO 17025	XRF (fusion)	
12	2,522	0,012	1,038		2,530	2,513		XRF (fusion)	
13	2,470	0,040	0,249		2,441	2,498		XRF (fusion)	
14	2,457	0,001	0,060		2,458	2,456		XRF (fusion)	
15	2,385	0,001	-1,021		2,386	2,385		XRF (fusion)	
16	2,475	0,007	0,332		2,470	2,480	ISO 17025	XRF (fusion)	
18	2,485	0,007	0,483		2,490	2,480		XRF (fusion)	
19	2,485	0,007	0,483		2,480	2,490	ISO 17025	XRF (fusion)	
20	2,513	0,009	0,904		2,519	2,507		XRF (fusion)	
21	2,497		0,665		2,497			XRF (fusion)	
22	2,140	0,014	-4,731	E	2,150	2,130		XRF (fusion)	
23	2,480	0,014	0,408		2,490	2,470		XRF (fusion)	
25	2,402	0,024	-0,766		2,386	2,419		XRF (fusion)	
26	2,107	0,008	-5,238	E	2,101	2,112		XRF (fusion)	
27	2,465	0,007	0,181		2,460	2,470		XRF (fusion)	
28	2,420		-0,499		2,420			XRF (fusion)	
29	2,475		0,332		2,475			XRF (fusion)	
30	2,455		0,030		2,455			XRF (fusion)	
31	2,475		0,332		2,475			XRF (fusion)	
32	2,450		-0,046		2,450			XRF (fusion)	
33	2,305	0,007	-2,237	E	2,310	2,300	ISO 17025	XRF (fusion)	
34	2,485	0,007	0,483		2,490	2,480		XRF (fusion)	
37	2,530		1,163		2,530			XRF (fusion)	
38	2,997	0,028	8,214	E	3,016	2,977		XRF (fusion)	
39	2,357	0,006	-1,459		2,361	2,352	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,035 % TM**
Measurand:	**Mn2O3**	**Repeatability s.d.:**	**0,002 % TM**
Mean ± U(Mean):	**0,220 ± 0,019 % TM**	**Range of tolerance:**	**0,149 - 0,290 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,220 % TM (Empirical value)**	**Target s.d.:**	**0,035 % TM (Empirical value)**

E



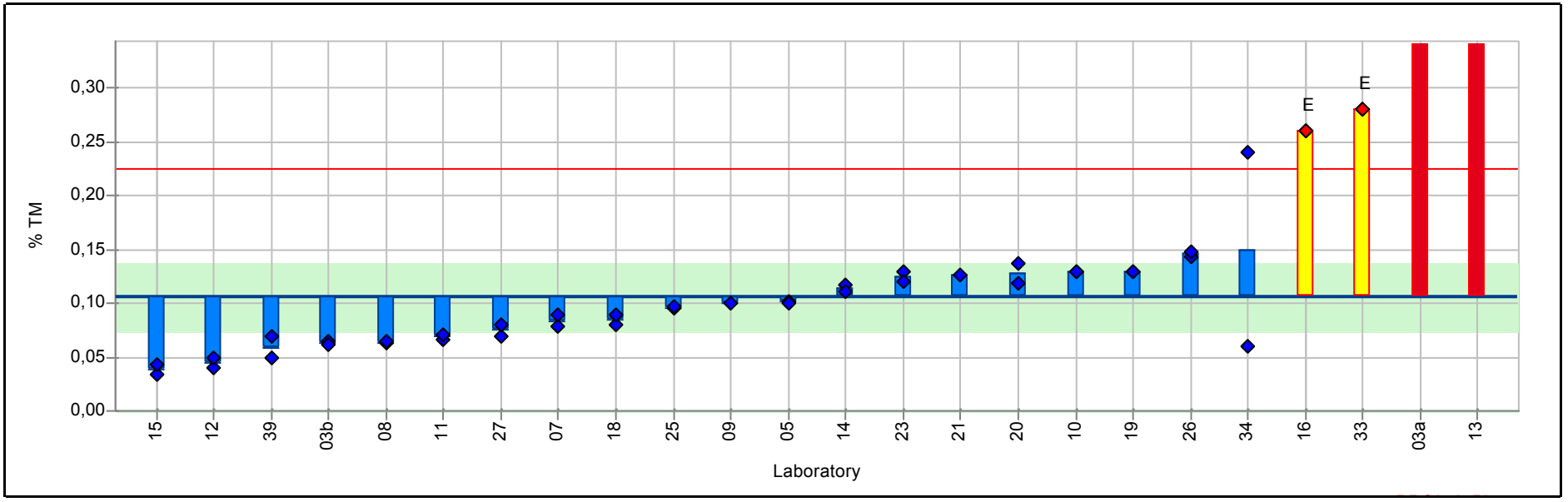
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,233	0,002	0,397		0,235	0,232		XRF (fusion)	Reconstitution Method
01b	0,230	0,000	0,298		0,230	0,230		Standardless info only	fusion
03a	0,170	0,000	-1,405		0,170	0,170		ICP-OES	ASTM D 6357
03b	0,160	0,000	-1,689		0,160	0,160		XRF (fusion)	ASTM D 4326
04	0,223		0,099		0,223			XRF (fusion)	RS:MnO in Mn2O3

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,294	0,000	2,119	E	0,294	0,294	ISO 17025	XRF (fusion)	
07	0,121	0,000	-2,796	E	0,121	0,121		XRF (fusion)	
08	0,471	0,002	7,142	E	0,472	0,470		XRF (fusion)	
09	0,300		2,285	E	0,300		ISO 17025	XRF (Pellet) info only	
10	0,150	0,014	-1,973		0,140	0,160	ISO 17025	XRF (fusion)	
11	0,231	0,001	0,312		0,231	0,230	ISO 17025	XRF (fusion)	
12	0,246	0,000	0,760		0,246	0,246		XRF (fusion)	
13	0,227	0,001	0,223		0,227	0,228		XRF (fusion)	
14	0,244	0,001	0,710		0,245	0,244		XRF (fusion)	
15	0,061	0,002	-4,513	E	0,062	0,059		XRF (fusion)	
16	0,235	0,021	0,440		0,250	0,220	ISO 17025	XRF (fusion)	
18	0,214	0,003	-0,156		0,212	0,216		XRF (fusion)	
19	0,267	0,000	1,350		0,267	0,267		XRF (fusion)	
20	0,226	0,014	0,190		0,216	0,236		XRF (fusion)	
21	0,233		0,383		0,233			XRF (fusion)	
22									
23									
25	0,227	0,004	0,209		0,224	0,230		XRF (fusion)	
26	0,215	0,003	-0,128		0,217	0,213		XRF (fusion)	
27	0,210	0,000	-0,270		0,210	0,210		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,215	0,008	-0,114		0,221	0,210	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,060 % TM**
Measurand:	**Na2O**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**0,106 ± 0,031 % TM**	**Range of tolerance:**	**-0,013 - 0,225 % TM (|z-score| <= 2,00)**
No. of laboratories:	**23**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,106 % TM (Empirical value)**	**Target s.d.:**	**0,060 % TM (Empirical value)**



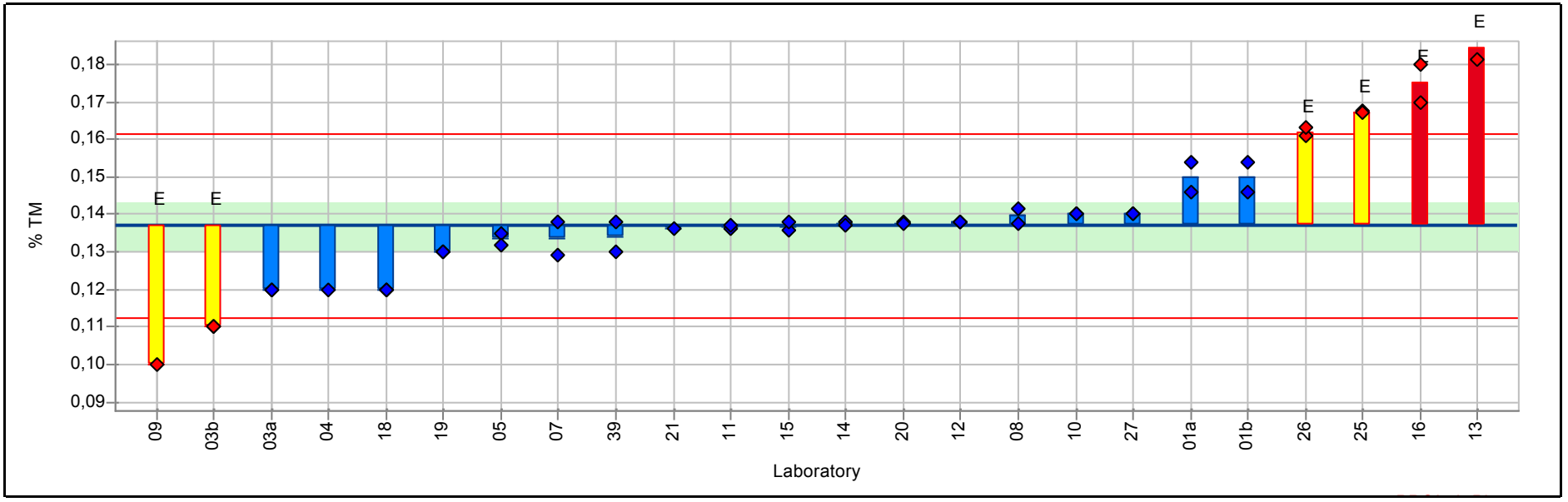
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,480	0,028	6,289	E	0,460	0,500		ICP-OES	ASTM D 6357
03b	0,063	0,002	-0,724		0,064	0,061		XRF (fusion)	ASTM D 4326
04								XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,101	0,001	-0,072		0,102	0,100	ISO 17025	XRF (fusion)	
07	0,084	0,007	-0,363		0,079	0,089	ISO 17025	ICP-OES	
08	0,063	0,001	-0,708		0,063	0,064		XRF (fusion)	
09	0,100		-0,094		0,100		ISO 17025	XRF (Pellet) info only	
10	0,130	0,000	0,410		0,130	0,130		ICP-OES	
11	0,069	0,003	-0,615		0,067	0,071	ISO 17025	XRF (fusion)	
12	0,044	0,007	-1,030		0,039	0,049		XRF (fusion)	
13	0,491	0,028	6,483	E	0,511	0,472		XRF (fusion)	
14	0,114	0,004	0,141		0,117	0,111		XRF (fusion)	
15	0,038	0,007	-1,130		0,033	0,043		XRF (fusion)	
16	0,260	0,000	2,594	E	0,260	0,260	ISO 17025	XRF (fusion)	
18	0,085	0,007	-0,346		0,080	0,090		XRF (fusion)	
19	0,130	0,000	0,410		0,130	0,130		XRF (fusion)	
20	0,128	0,014	0,373		0,118	0,138		XRF (fusion)	
21	0,127		0,359		0,127			XRF (fusion)	
22									
23	0,125	0,007	0,326		0,130	0,120		XRF (fusion)	
25	0,096	0,001	-0,157		0,096	0,097		ICP-OES	
26	0,146	0,003	0,678		0,144	0,148		XRF (fusion)	
27	0,075	0,007	-0,514		0,070	0,080		XRF (fusion)	
28									
29									
30									
31									
32									
33	0,280	0,000	2,930	E	0,280	0,280	ISO 17025	XRF (fusion)	
34	0,150	0,127	0,746		0,060	0,240		XRF (fusion)	
37									
38								XRF (fusion)	
39	0,059	0,014	-0,783		0,049	0,069	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,012 % TM**
Measurand:	**P2O5**	**Repeatability s.d.:**	**0,002 % TM**
Mean ± U(Mean):	**0,137 ± 0,007 % TM**	**Range of tolerance:**	**0,112 - 0,162 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,137 % TM (Empirical value)**	**Target s.d.:**	**0,012 % TM (Empirical value)**



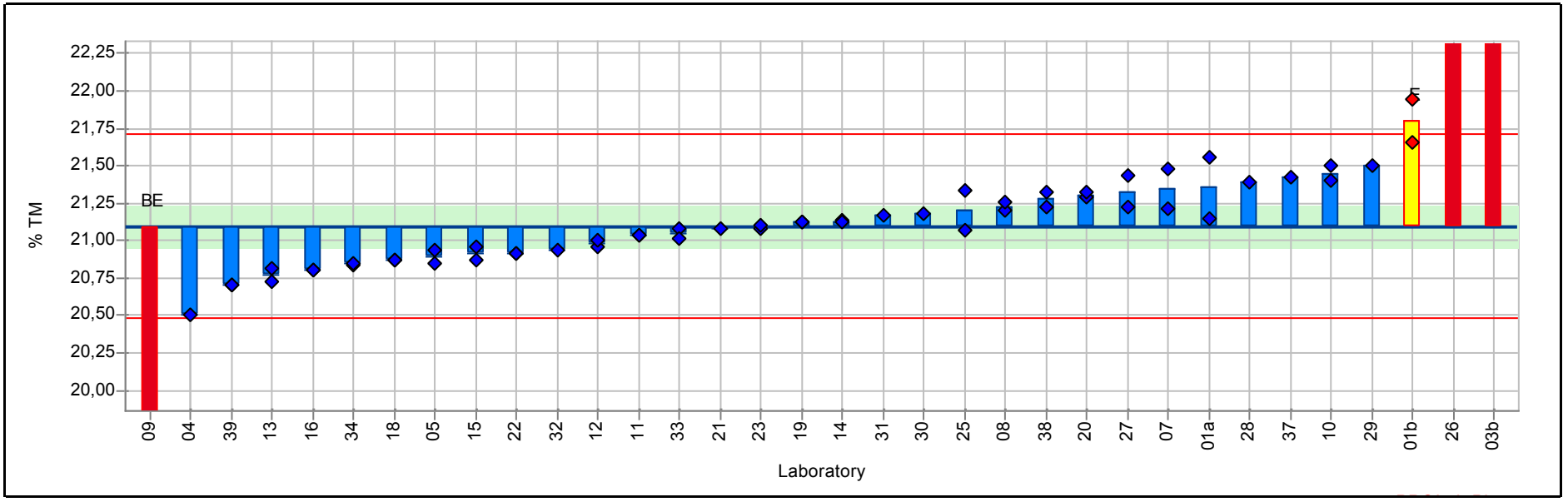
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,150	0,006	1,066		0,154	0,146		XRF (fusion)	
01b	0,150	0,006	1,066		0,154	0,146		Standardless info only	fusion
03a	0,120	0,000	-1,369		0,120	0,120		ICP-OES	ASTM D 6357
03b	0,110	0,000	-2,181	E	0,110	0,110		XRF (fusion)	ASTM D 4326
04	0,120		-1,369		0,120			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,133	0,002	-0,282		0,135	0,132	ISO 17025	XRF (fusion)	
07	0,134	0,006	-0,273		0,138	0,129	ISO 17025	XRF (fusion)	
08	0,140	0,003	0,224		0,138	0,142		XRF (fusion)	
09	0,100		-2,993	E	0,100		ISO 17025	XRF (Pellet) info only	
10	0,140	0,000	0,254		0,140	0,140	ISO 17025	XRF (fusion)	
11	0,137	0,001	-0,030		0,136	0,137	ISO 17025	XRF (fusion)	
12	0,138	0,000	0,084		0,138	0,138		XRF (fusion)	
13	0,184	0,004	3,847	E	0,181	0,187		XRF (fusion)	
14	0,138	0,001	0,051		0,138	0,137		XRF (fusion)	
15	0,137	0,001	-0,006		0,136	0,138		XRF (fusion)	
16	0,175	0,007	3,096	E	0,170	0,180	ISO 17025	XRF (fusion)	
18	0,120	0,000	-1,369		0,120	0,120		XRF (fusion)	
19	0,130	0,000	-0,557		0,130	0,130		XRF (fusion)	
20	0,138	0,000	0,067		0,138	0,138		XRF (fusion)	
21	0,136		-0,070		0,136			XRF (fusion)	
22									
23									
25	0,167	0,000	2,469	E	0,168	0,167		XRF (fusion)	
26	0,162	0,001	2,040	E	0,161	0,163		XRF (fusion)	
27	0,140	0,000	0,254		0,140	0,140		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,134	0,006	-0,233		0,130	0,138	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,309 % TM**
Measurand:	**SiO2**	**Repeatability s.d.:**	**0,073 % TM**
Mean ± U(Mean):	**21,098 ± 0,136 % TM**	**Range of tolerance:**	**20,480 - 21,715 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**21,098 % TM (Empirical value)**	**Target s.d.:**	**0,309 % TM (Empirical value)**



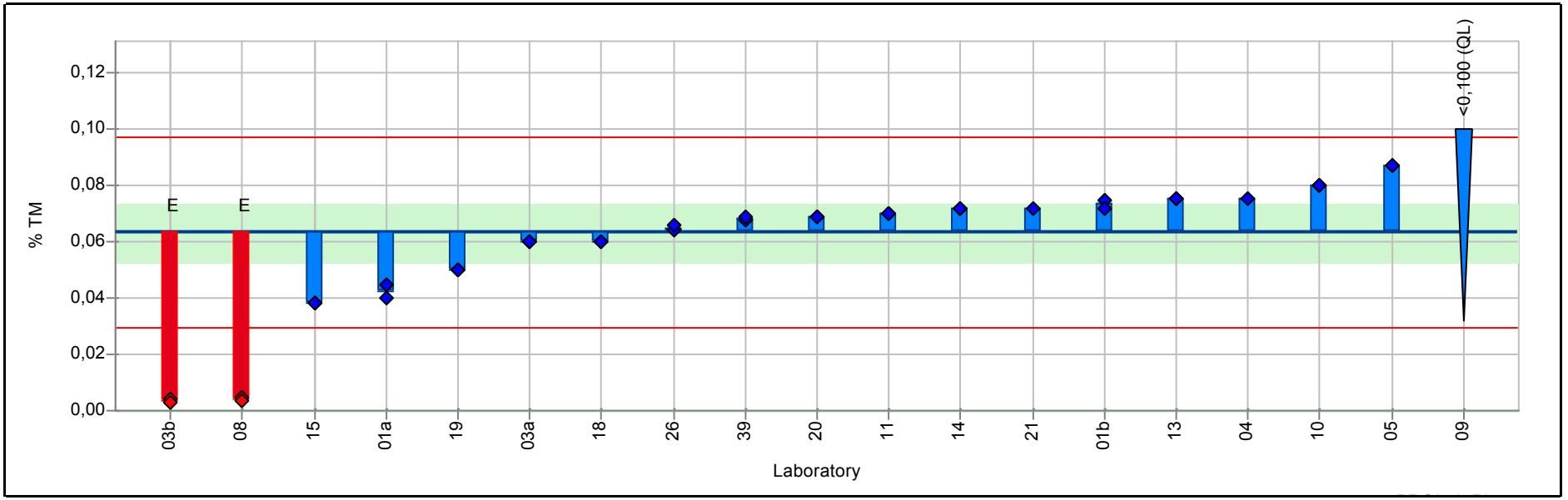
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	21,354	0,288	0,830		21,558	21,150		XRF (fusion)	Reconstitution Method
01b	21,802	0,209	2,281	E	21,950	21,654		Standardless info only	fusion
03a									
03b	22,915	0,205	5,886	E	23,060	22,770		XRF (fusion)	ASTM D 4326
04	20,500		-1,936		20,500			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	20,892	0,067	-0,667		20,939	20,845	ISO 17025	XRF (fusion)	
07	21,343	0,189	0,792		21,209	21,476	ISO 17025	XRF (fusion)	
08	21,229	0,044	0,426		21,198	21,261		XRF (fusion)	
09	18,500		-8,414	BE	18,500		ISO 17025	XRF (Pellet) info only	
10	21,450	0,071	1,141		21,500	21,400	ISO 17025	XRF (fusion)	
11	21,040	0,000	-0,187		21,040	21,040	ISO 17025	XRF (fusion)	
12	20,982	0,027	-0,377		20,962	21,001		XRF (fusion)	
13	20,775	0,064	-1,046		20,820	20,730		XRF (fusion)	
14	21,130	0,004	0,104		21,133	21,127		XRF (fusion)	
15	20,912	0,062	-0,601		20,869	20,956		XRF (fusion)	
16	20,800	0,000	-0,965		20,800	20,800	ISO 17025	XRF (fusion)	
18	20,870	0,000	-0,738		20,870	20,870		XRF (fusion)	
19	21,120	0,000	0,072		21,120	21,120	ISO 17025	XRF (fusion)	
20	21,308	0,019	0,679		21,294	21,321		XRF (fusion)	
21	21,080		-0,058		21,080			XRF (fusion)	
22	20,915	0,007	-0,592		20,920	20,910		XRF (fusion)	
23	21,090	0,014	-0,025		21,080	21,100		XRF (fusion)	
25	21,201	0,188	0,334		21,068	21,334		XRF (fusion)	
26	22,732	0,060	5,291	E	22,774	22,689		XRF (fusion)	
27	21,330	0,156	0,752		21,220	21,440		XRF (fusion)	
28	21,390		0,946		21,390			XRF (fusion)	
29	21,505		1,319		21,505			XRF (fusion)	
30	21,185		0,282		21,185			XRF (fusion)	
31	21,165		0,218		21,165			XRF (fusion)	
32	20,940		-0,511		20,940			XRF (fusion)	
33	21,050	0,042	-0,155		21,080	21,020	ISO 17025	XRF (fusion)	
34	20,845	0,007	-0,819		20,840	20,850		XRF (fusion)	
37	21,420		1,043		21,420			XRF (fusion)	
38	21,280	0,071	0,590		21,330	21,230		XRF (fusion)	
39	20,700	0,000	-1,288		20,700	20,700	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,017 % TM**
Measurand:	**SrO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,063 ± 0,010 % TM**	**Range of tolerance:**	**0,030 - 0,097 % TM (|z-score| <= 2,00)**
No. of laboratories:	**17**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,063 % TM (Empirical value)**	**Target s.d.:**	**0,017 % TM (Empirical value)**



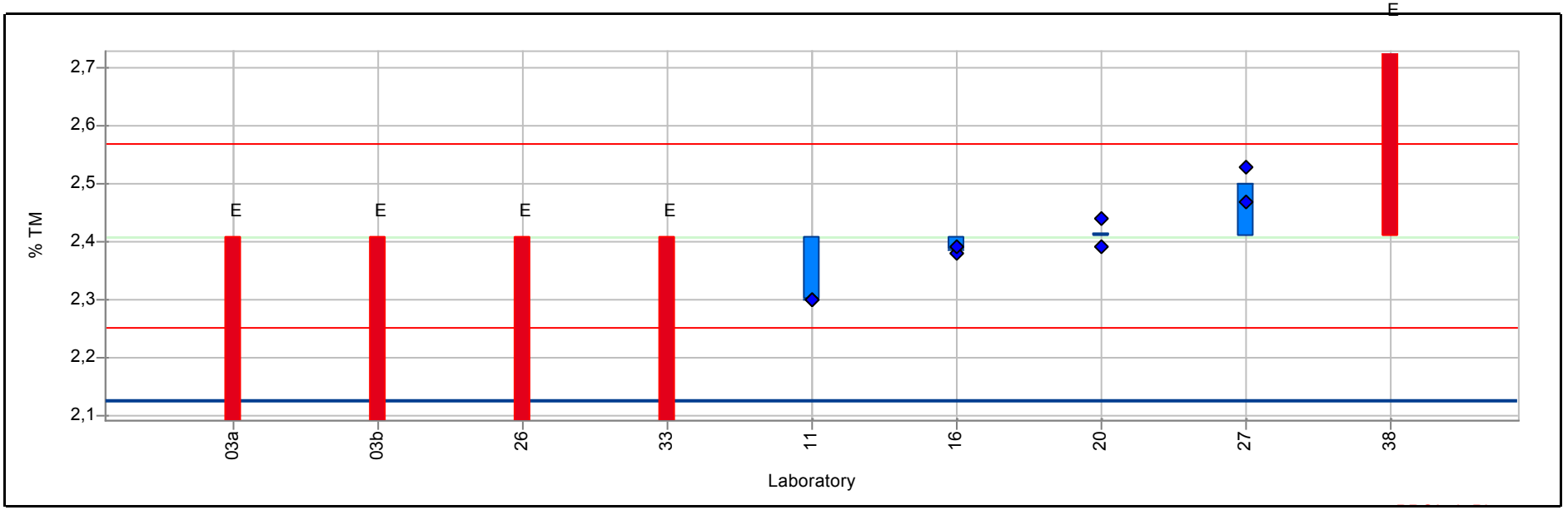
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,042	0,004	-1,234		0,045	0,040		XRF (fusion)	Reconstitution Method
01b	0,073	0,002	0,592		0,075	0,072		Standardless info only	fusion
03a	0,060	0,000	-0,204		0,060	0,060		ICP-OES	ASTM D 6357
03b	0,004	0,001	-3,532	E	0,004	0,003		XRF (fusion)	ASTM D 4326
04	0,076		0,715		0,076			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,087	0,000	1,400		0,087	0,087	ISO 17025	XRF (fusion)	
07									
08	0,004	0,001	-3,499	E	0,005	0,004		XRF (fusion)	
09					<0,100		ISO 17025	XRF (Pellet) info only	
10	0,080	0,000	0,974		0,080	0,080		ICP-OES	
11	0,070	0,000	0,385		0,070	0,070	ISO 17025	XRF (fusion)	
12									
13	0,075	0,000	0,693		0,075	0,075		XRF (fusion)	
14	0,072	0,000	0,503		0,072	0,072		XRF (fusion)	
15	0,038	0,000	-1,477		0,038	0,038		XRF (fusion)	
16									
18	0,060	0,000	-0,204		0,060	0,060		XRF (fusion)	
19	0,050	0,000	-0,793		0,050	0,050		XRF (fusion)	
20	0,069	0,000	0,317		0,069	0,069		XRF (fusion)	
21	0,072		0,503		0,072			XRF (fusion)	
22									
23									
25									
26	0,065	0,001	0,091		0,064	0,066		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37								XRF (fusion)	
38									
39	0,069	0,001	0,297		0,068	0,069	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,604 % TM**
Measurand:	**Sulfate expressed as SO3**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**2,123 ± 0,503 % TM**	**Range of tolerance:**	**2,250 - 2,570 % TM (|z-score| <= 2,00)**
No. of laboratories:	**9**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,410 % TM (Reference value)**	**Target s.d.:**	**0,080 % TM (Reference value)**



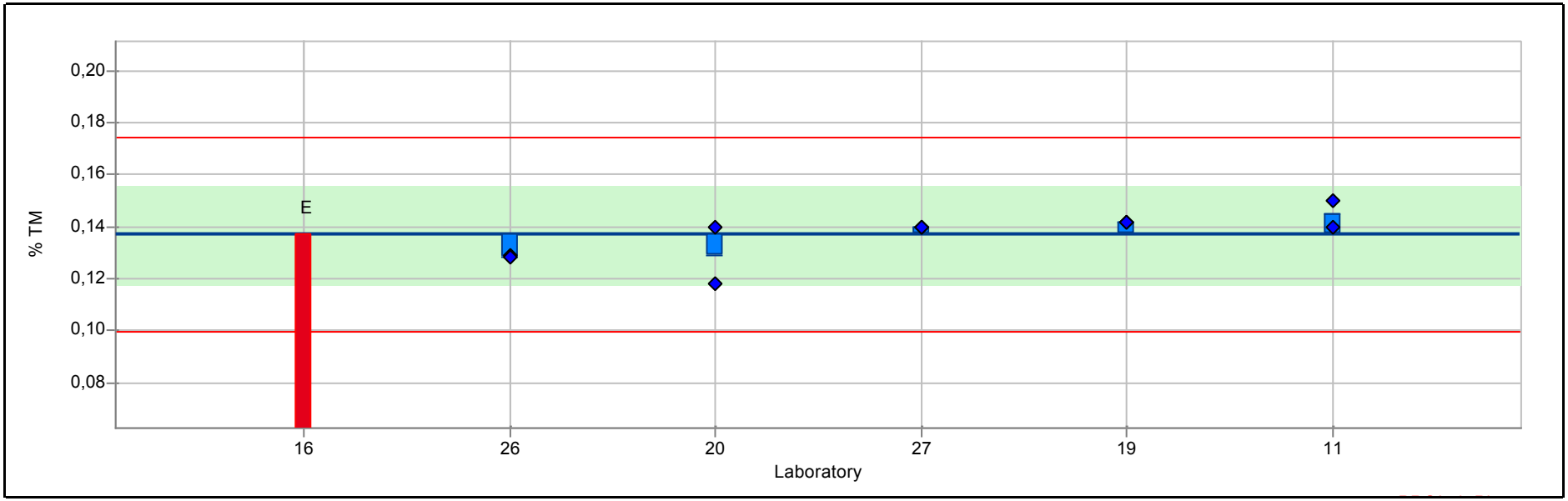
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,035	0,002	-29,694	E	0,033	0,036		Wet chemistry EN196-2	
03b	0,035	0,002	-29,694	E	0,033	0,036		Wet chemistry EN196-2	
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	2,300	0,000	-1,375		2,300	2,300		Wet chemistry EN196-2	
12									
13									
14									
15									
16	2,385	0,007	-0,313		2,380	2,390	ISO 17025	Wet chemistry EN196-2	
18									
19									
20	2,415	0,035	0,062		2,440	2,390		Wet chemistry EN196-2	
21									
22									
23									
25									
26	1,740	0,002	-8,381	E	1,738	1,741		Wet chemistry EN196-2	
27	2,500	0,042	1,125		2,530	2,470		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33	2,025	0,007	-4,813	E	2,020	2,030	ISO 17025	Wet chemistry EN196-2	
34									
37									
38	2,755	0,007	4,312	E	2,760	2,750		Wet chemistry EN196-2	
39									

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,019 % TM**
Measurand:	**Sulfide expressed as S**	**Repeatability s.d.:**	**0,007 % TM**
Mean ± U(Mean):	**0,137 ± 0,019 % TM**	**Range of tolerance:**	**0,100 - 0,174 % TM (|z-score| <= 2,00)**
No. of laboratories:	**6**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,137 % TM (Empirical value)**	**Target s.d.:**	**0,019 % TM (Empirical value)**



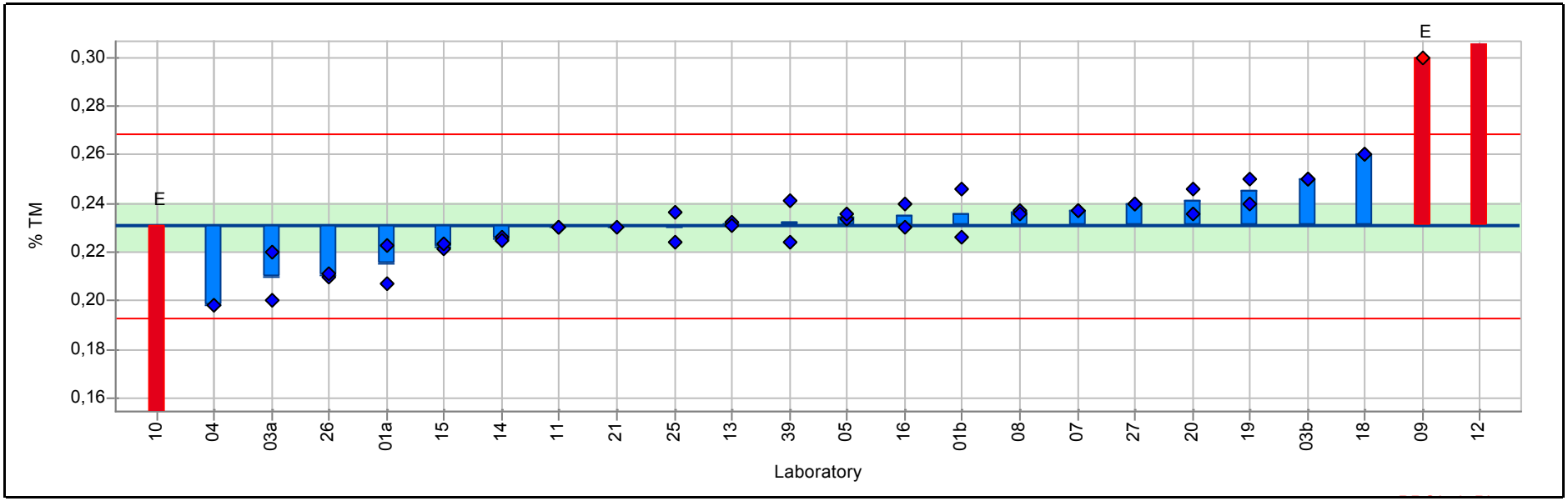
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a									
03b									
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09								XRF (Pellet) info only	
10									
11	0,145	0,007	0,435		0,140	0,150		Wet chemistry EN196-2	
12									
13									
14									
15									
16	0,035	0,007	-5,482	E	0,030	0,040	ISO 17025	Wet chemistry EN196-2	
18									
19	0,142	0,000	0,274		0,142	0,142	ISO 17025	Wet chemistry EN196-2	
20	0,129	0,015	-0,423		0,118	0,140		Wet chemistry EN196-2	
21									
22									
23									
25									
26	0,129	0,001	-0,452		0,129	0,128		Wet chemistry EN196-2	
27	0,140	0,000	0,166		0,140	0,140		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39									

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,019 % TM**
Measurand:	**TiO2**	**Repeatability s.d.:**	**0,007 % TM**
Mean ± U(Mean):	**0,231 ± 0,010 % TM**	**Range of tolerance:**	**0,193 - 0,269 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,231 % TM (Empirical value)**	**Target s.d.:**	**0,019 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,215	0,011	-0,822		0,207	0,223		XRF (fusion)	Reconstitution Method
01b	0,236	0,014	0,282		0,226	0,246		Standardless info only	fusion
03a	0,210	0,014	-1,085		0,200	0,220		ICP-OES	ASTM D 6357
03b	0,250	0,000	1,019		0,250	0,250		XRF (fusion)	ASTM D 4326
04	0,198		-1,716		0,198			XRF (fusion)	

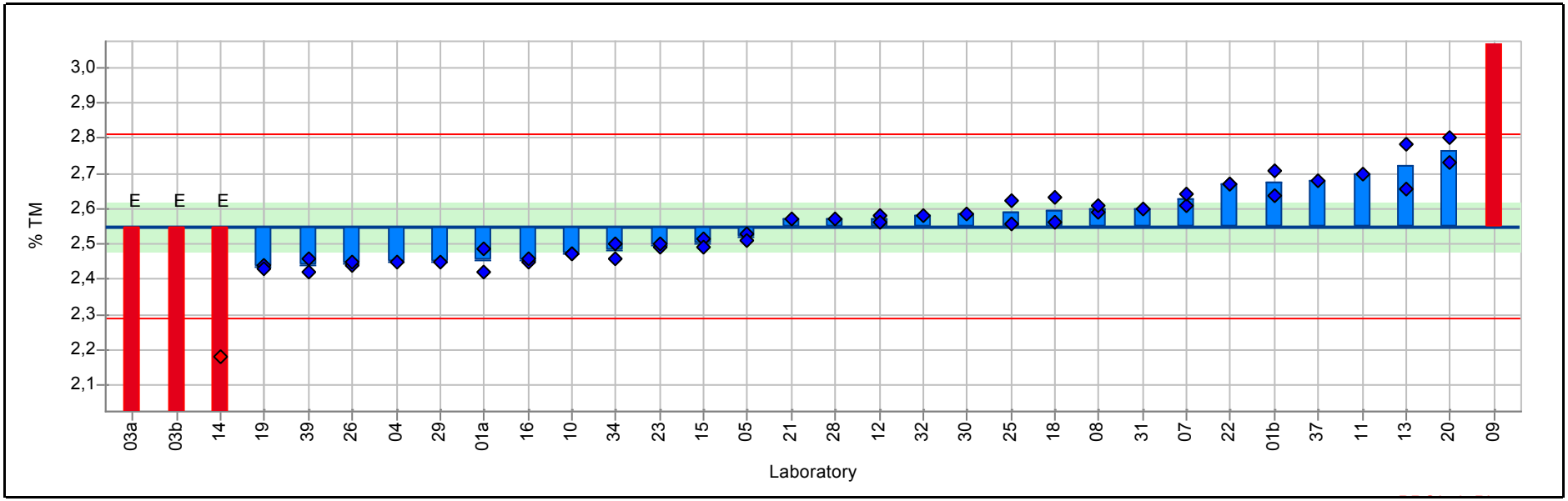
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,234	0,002	0,203		0,233	0,236	ISO 17025	XRF (fusion)	
07	0,237	0,000	0,335		0,237	0,237	ISO 17025	XRF (fusion)	
08	0,236	0,001	0,293		0,237	0,236		XRF (fusion)	
09	0,300		3,649	E	0,300		ISO 17025	XRF (Pellet) info only	
10	0,150	0,000	-4,241	E	0,150	0,150	ISO 17025	XRF (fusion)	
11	0,230	0,000	-0,033		0,230	0,230	ISO 17025	XRF (fusion)	
12	0,527	0,007	15,588	E	0,532	0,522		XRF (fusion)	
13	0,232	0,001	0,054		0,233	0,231		XRF (fusion)	
14	0,226	0,001	-0,270		0,226	0,225		XRF (fusion)	
15	0,222	0,001	-0,433		0,221	0,223		XRF (fusion)	
16	0,235	0,007	0,230		0,240	0,230		XRF (fusion)	
18	0,260	0,000	1,545		0,260	0,260		XRF (fusion)	
19	0,245	0,007	0,756		0,250	0,240		XRF (fusion)	
20	0,241	0,007	0,543		0,246	0,236		XRF (fusion)	
21	0,230		-0,033		0,230			XRF (fusion)	
22									
23									
25	0,230	0,009	-0,028		0,224	0,236		XRF (fusion)	
26	0,210	0,001	-1,059		0,210	0,211		XRF (fusion)	
27	0,240	0,000	0,493		0,240	0,240		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37								XRF (fusion)	
38									
39	0,232	0,012	0,098		0,224	0,241	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,131 % TM**
Measurand:	**Total S expressed as SO3**	**Repeatability s.d.:**	**0,030 % TM**
Mean ± U(Mean):	**2,550 ± 0,067 % TM**	**Range of tolerance:**	**2,287 - 2,812 % TM (|z-score| <= 2,00)**
No. of laboratories:	**24**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,550 % TM (Empirical value)**	**Target s.d.:**	**0,131 % TM (Empirical value)**

BE



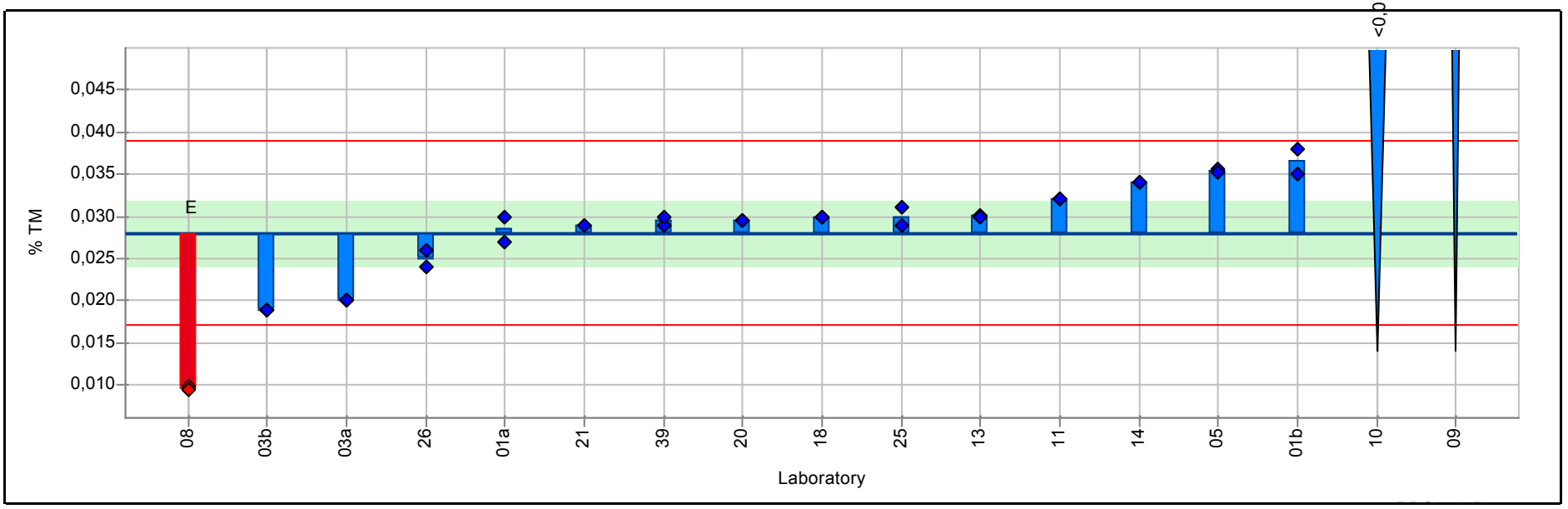
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	2,454	0,045	-0,733		2,485	2,422		XRF (fusion)	Reconstitution Method
01b	2,672	0,049	0,936		2,707	2,638		Standardless info only	fusion
03a	1,185	0,021	-10,403	E	1,200	1,170		combustion	ASTM D 5016
03b	1,185	0,021	-10,403	E	1,200	1,170		combustion	
04	2,450		-0,760		2,450			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	2,519	0,013	-0,231		2,529	2,510	ISO 17025	XRF (fusion)	
07	2,625	0,021	0,574		2,610	2,640	ISO 17025	XRF (fusion)	
08	2,600	0,013	0,383		2,591	2,609		XRF (fusion)	
09	3,300		5,720	BE	3,300		ISO 17025	XRF (Pellet) info only	
10	2,470	0,000	-0,607		2,470	2,470	ISO 17025	combustion	
11	2,700		1,146		2,700		ISO 17025	combustion	
12	2,571	0,012	0,162		2,580	2,562		XRF (fusion)	
13	2,720	0,089	1,298		2,657	2,783		XRF (fusion)	
14	1,956	0,315	-4,526	E	1,733	2,179		XRF (fusion)	
15	2,502	0,017	-0,363		2,514	2,490		XRF (fusion)	
16	2,455	0,007	-0,722		2,450	2,460	ISO 17025	Wet chemistry EN196-2	
18	2,595	0,049	0,346		2,560	2,630		XRF (fusion)	
19	2,435	0,007	-0,874		2,440	2,430		XRF (fusion)	
20	2,765	0,049	1,641		2,730	2,800		combustion	With LECO instrument - S
21	2,570		0,155		2,570			XRF (fusion)	
22	2,670	0,000	0,917		2,670	2,670		XRF (Pellet) info only	
23	2,495	0,007	-0,417		2,490	2,500		XRF (fusion)	
25	2,591	0,048	0,314		2,557	2,625		combustion	
26	2,445	0,007	-0,798		2,440	2,450		XRF (fusion)	
27									
28	2,570		0,155		2,570			XRF (Pellet) info only	
29	2,450		-0,760		2,450			XRF (Pellet) info only	
30	2,585		0,269		2,585			XRF (Pellet) info only	
31	2,600		0,384		2,600			XRF (Pellet) info only	
32	2,580		0,231		2,580			XRF (Pellet) info only	
33									
34	2,480	0,028	-0,531		2,460	2,500		XRF (fusion)	
37	2,680		0,993		2,680			XRF (fusion)	
38									
39	2,440	0,028	-0,836		2,420	2,460	ISO 17025	combustion	Leco DIN 51085

RV113

Sample:	**FLX-CRM 113**	**Reproducibility s.d.:**	**0,005 % TM**
Measurand:	**ZnO**	**Repeatability s.d.:**	**0,000 % TM**
Mean ± U(Mean):	**0,028 ± 0,004 % TM**	**Range of tolerance:**	**0,017 - 0,039 % TM (|z-score| <= 2,00)**
No. of laboratories:	**13**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,028 % TM (Empirical value)**	**Target s.d.:**	**0,005 % TM (Empirical value)**



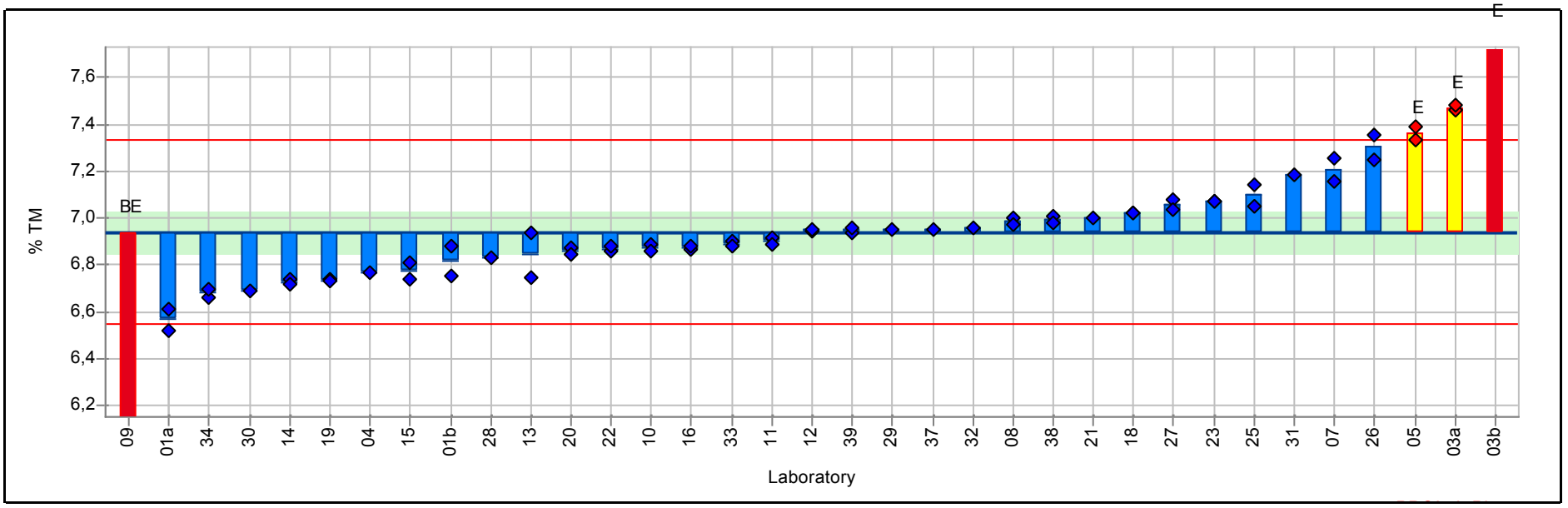
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,028	0,002	0,083		0,027	0,030		XRF (fusion)	Reconstitution Method
01b	0,037	0,002	1,544		0,035	0,038		Standardless info only	fusion
03a	0,020	0,000	-1,468		0,020	0,020		ICP-OES	ASTM D 6357
03b	0,019	0,000	-1,651		0,019	0,019		XRF (fusion)	ASTM D 4326
04								XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,035	0,000	1,331		0,036	0,035	ISO 17025	XRF (fusion)	
07									
08	0,010	0,000	-3,363	E	0,010	0,009		XRF (fusion)	
09					<0,100		ISO 17025	XRF (Pellet) info only	
10					<0,050	<0,050		ICP-OES	
11	0,032	0,000	0,722		0,032	0,032	ISO 17025	XRF (fusion)	
12									
13	0,030	0,000	0,372		0,030	0,030		XRF (fusion)	
14	0,034	0,000	1,087		0,034	0,034		XRF (fusion)	
15								XRF (fusion)	
16									
18	0,030	0,000	0,357		0,030	0,030		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,030	0,000	0,267		0,030	0,029		XRF (fusion)	
21	0,029		0,175		0,029			XRF (fusion)	
22									
23									
25	0,030	0,001	0,357		0,031	0,029		XRF (Pellet) info only	XRF pressed pellet
26	0,025	0,001	-0,556		0,026	0,024		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37								XRF (fusion)	
38									
39	0,029	0,001	0,266		0,029	0,030	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,197 % TM**
Measurand:	**Al2O3**	**Repeatability s.d.:**	**0,029 % TM**
Mean ± U(Mean):	**6,941 ± 0,086 % TM**	**Range of tolerance:**	**6,548 - 7,335 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**6,941 % TM (Empirical value)**	**Target s.d.:**	**0,197 % TM (Empirical value)**



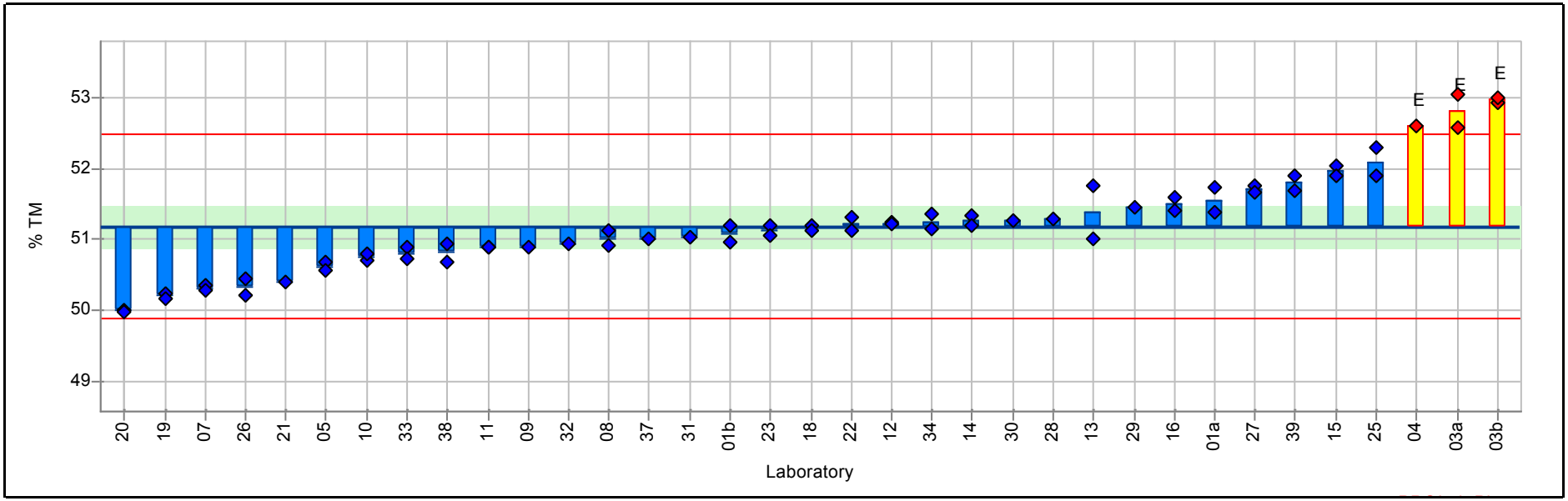
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	6,568	0,064	-1,899		6,613	6,522		XRF (fusion)	Reconstitution Method
01b	6,819	0,093	-0,623		6,884	6,753		Standardless info only	fusion
03a	7,470	0,014	2,687	E	7,460	7,480		ICP-OES	ASTM D 6357
03b	7,770	0,042	4,211	E	7,800	7,740		XRF (fusion)	ASTM D 4326
04	6,770		-0,870		6,770			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	7,360	0,040	2,126	E	7,388	7,331	ISO 17025	XRF (fusion)	
07	7,204	0,070	1,338		7,155	7,254	ISO 17025	XRF (fusion)	
08	6,986	0,020	0,228		7,000	6,972		XRF (fusion)	
09	5,900		-5,290	BE	5,900			XRF (Pellet) info only	
10	6,875	0,021	-0,336		6,890	6,860	ISO 17025	XRF (fusion)	
11	6,905	0,021	-0,184		6,920	6,890	ISO 17025	XRF (fusion)	
12	6,949	0,003	0,038		6,947	6,951		XRF (fusion)	
13	6,843	0,133	-0,499		6,937	6,749		XRF (fusion)	
14	6,729	0,016	-1,078		6,740	6,718		XRF (fusion)	
15	6,778	0,049	-0,830		6,813	6,743		XRF (fusion)	
16	6,875	0,007	-0,336		6,870	6,880	ISO 17025	XRF (fusion)	
18	7,020	0,000	0,400		7,020	7,020		XRF (fusion)	
19	6,735	0,007	-1,048		6,740	6,730	ISO 17025	XRF (fusion)	
20	6,861	0,020	-0,409		6,875	6,847		XRF (fusion)	
21	7,000		0,299		7,000			XRF (fusion)	
22	6,870	0,014	-0,362		6,860	6,880		XRF (fusion)	
23	7,070	0,000	0,654		7,070	7,070		XRF (fusion)	
25	7,097	0,066	0,792		7,050	7,144		XRF (fusion)	
26	7,301	0,073	1,831		7,250	7,353		XRF (fusion)	
27	7,060	0,028	0,604		7,080	7,040		XRF (fusion)	
28	6,830		-0,565		6,830			XRF (fusion)	
29	6,950		0,045		6,950			XRF (fusion)	
30	6,690		-1,276		6,690			XRF (fusion)	
31	7,185		1,239		7,185			XRF (fusion)	
32	6,960		0,095		6,960			XRF (fusion)	
33	6,890	0,014	-0,260		6,900	6,880	ISO 17025	XRF (fusion)	
34	6,680	0,028	-1,327		6,660	6,700		XRF (fusion)	
37	6,950		0,045		6,950			XRF (fusion)	
38	6,995	0,021	0,273		7,010	6,980		XRF (fusion)	
39	6,950	0,012	0,042		6,941	6,958	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,656 % TM**
Measurand:	**CaO**	**Repeatability s.d.:**	**0,147 % TM**
Mean ± U(Mean):	**51,188 ± 0,285 % TM**	**Range of tolerance:**	**49,876 - 52,500 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**51,188 % TM (Empirical value)**	**Target s.d.:**	**0,656 % TM (Empirical value)**



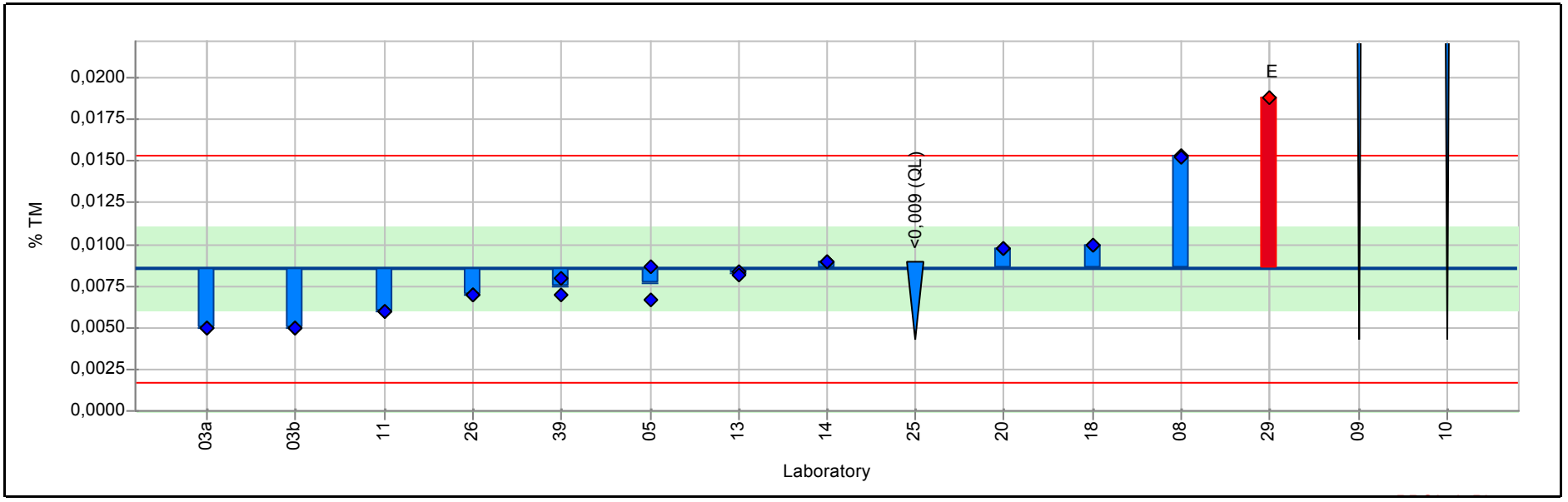
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	51,564	0,256	0,573		51,383	51,745		XRF (fusion)	Reconstitution Method
01b	51,089	0,163	-0,151		50,974	51,204		Standardless info only	fusion
03a	52,825	0,346	2,496	E	52,580	53,070		ICP-OES	ASTM D 6357
03b	52,980	0,042	2,733	E	52,950	53,010		XRF (fusion)	ASTM D 4326
04	52,620		2,184	E	52,620			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	50,619	0,078	-0,867		50,674	50,564	ISO 17025	XRF (fusion)	
07	50,312	0,057	-1,336		50,352	50,272	ISO 17025	XRF (fusion)	
08	51,019	0,141	-0,258		51,119	50,919		XRF (fusion)	
09	50,900		-0,439		50,900			XRF (Pellet) info only	
10	50,750	0,071	-0,668		50,700	50,800	ISO 17025	XRF (fusion)	
11	50,895	0,007	-0,447		50,890	50,900	ISO 17025	XRF (fusion)	
12	51,233	0,012	0,069		51,241	51,225		XRF (fusion)	
13	51,385	0,530	0,300		51,760	51,010		XRF (fusion)	
14	51,267	0,093	0,120		51,333	51,201		XRF (fusion)	
15	51,966	0,098	1,186		52,035	51,896		XRF (fusion)	
16	51,500	0,141	0,476		51,600	51,400	ISO 17025	XRF (fusion)	
18	51,165	0,064	-0,035		51,210	51,120		XRF (fusion)	
19	50,200	0,042	-1,507		50,230	50,170	ISO 17025	XRF (fusion)	
20	49,992	0,007	-1,824		49,997	49,988		XRF (fusion)	
21	50,410		-1,186		50,410			XRF (fusion)	
22	51,225	0,134	0,056		51,320	51,130		XRF (fusion)	
23	51,130	0,099	-0,088		51,200	51,060		XRF (fusion)	
25	52,097	0,279	1,387		52,295	51,900		XRF (fusion)	
26	50,319	0,165	-1,325		50,202	50,436		XRF (fusion)	
27	51,715	0,078	0,804		51,770	51,660		XRF (fusion)	
28	51,300		0,171		51,300			XRF (fusion)	
29	51,455		0,407		51,455			XRF (fusion)	
30	51,280		0,140		51,280			XRF (fusion)	
31	51,045		-0,218		51,045			XRF (fusion)	
32	50,935		-0,386		50,935			XRF (fusion)	
33	50,805	0,120	-0,584		50,890	50,720	ISO 17025	XRF (fusion)	
34	51,255	0,148	0,102		51,150	51,360		XRF (fusion)	
37	51,020		-0,256		51,020			XRF (fusion)	
38	50,815	0,177	-0,569		50,690	50,940		XRF (fusion)	
39	51,800	0,141	0,933		51,900	51,700	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,003 % TM**
Measurand:	**Cr2O3**	**Repeatability s.d.:**	**0,000 % TM**
Mean ± U(Mean):	**0,009 ± 0,002 % TM**	**Range of tolerance:**	**0,002 - 0,015 % TM (|z-score| <= 2,00)**
No. of laboratories:	**12**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,009 % TM (Empirical value)**	**Target s.d.:**	**0,003 % TM (Empirical value)**



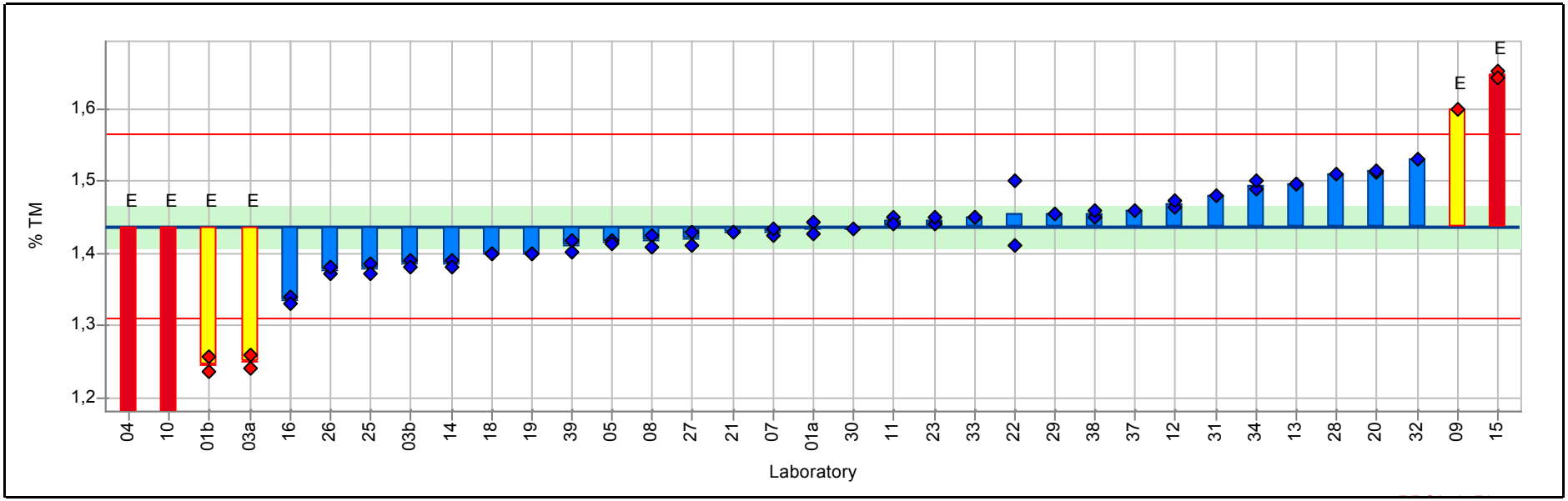
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,005	0,000	-1,035		0,005	0,005		ICP-OES	ASTM D 6357
03b	0,005	0,000	-1,035		0,005	0,005		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,008	0,001	-0,256		0,007	0,009	ISO 17025	XRF (fusion)	
07									
08	0,015	0,000	1,977		0,015	0,015		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,006	0,000	-0,742		0,006	0,006	ISO 17025	XRF (fusion)	
12									
13	0,008	0,000	-0,086		0,008	0,008		XRF (fusion)	
14	0,009	0,000	0,137		0,009	0,009		XRF (fusion)	
15									
16									
18	0,010	0,000	0,429		0,010	0,010		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,010	0,000	0,361		0,010	0,010		XRF (fusion)	
21									
22									
23									
25					<0,009	<0,009		XRF (fusion)	
26	0,007	0,000	-0,449		0,007	0,007		XRF (fusion)	
27									
28									
29	0,019		3,021	E	0,019			XRF (fusion)	
30									
31									
32									
33									
34									
37									
38									
39	0,007	0,001	-0,303		0,007	0,008	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,064 % TM**
Measurand:	**Fe2O3**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**1,438 ± 0,028 % TM**	**Range of tolerance:**	**1,309 - 1,566 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,438 % TM (Empirical value)**	**Target s.d.:**	**0,064 % TM (Empirical value)**



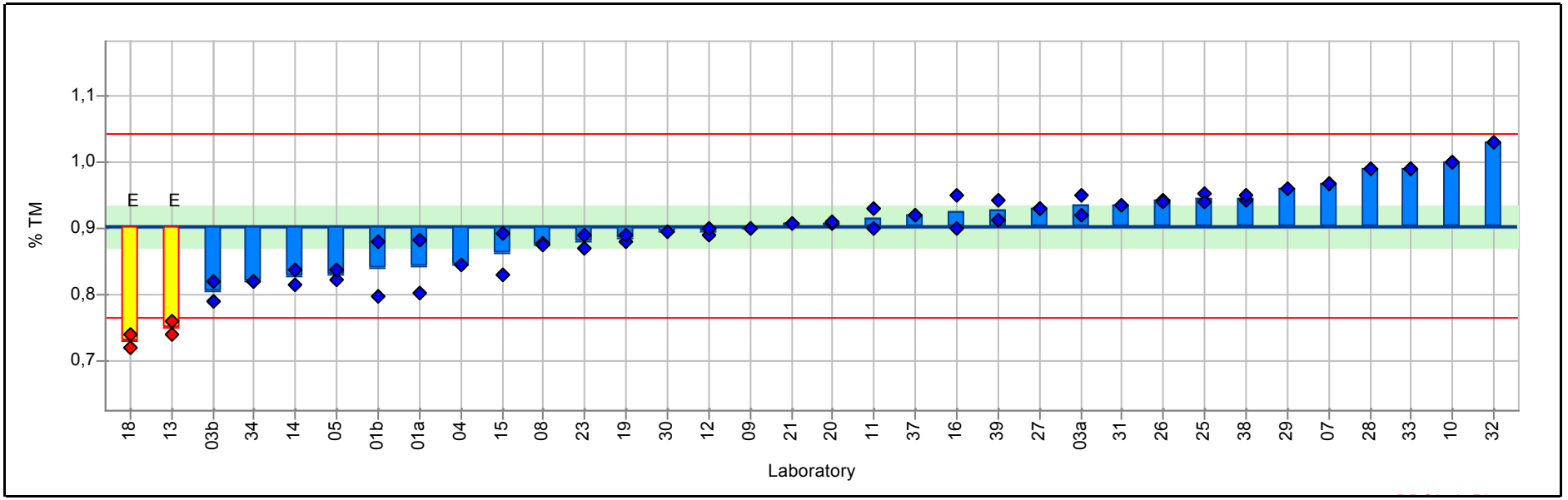
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	1,435	0,011	-0,040		1,443	1,427		XRF (fusion)	Reconstitution Method
01b	1,246	0,014	-2,981	E	1,256	1,236		Standardless info only	fusion
03a	1,250	0,014	-2,919	E	1,240	1,260		ICP-OES	ASTM D 6357
03b	1,385	0,007	-0,818		1,390	1,380		XRF (fusion)	ASTM D 4326
04	0,997		-6,857	E	0,997			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	1,416	0,004	-0,335		1,419	1,413	ISO 17025	XRF (fusion)	
07	1,430	0,007	-0,118		1,425	1,435	ISO 17025	XRF (fusion)	
08	1,417	0,011	-0,322		1,424	1,409		XRF (fusion)	
09	1,600		2,528	E	1,600			XRF (Pellet) info only	
10	1,160	0,000	-4,320	E	1,160	1,160	ISO 17025	XRF (fusion)	
11	1,445	0,007	0,116		1,450	1,440	ISO 17025	XRF (fusion)	
12	1,469	0,006	0,488		1,465	1,473		XRF (fusion)	
13	1,497	0,000	0,925		1,497	1,497		XRF (fusion)	
14	1,385	0,008	-0,810		1,391	1,380		XRF (fusion)	
15	1,649	0,007	3,286	E	1,654	1,644		XRF (fusion)	
16	1,335	0,007	-1,596		1,340	1,330	ISO 17025	XRF (fusion)	
18	1,400	0,000	-0,585		1,400	1,400		XRF (fusion)	
19	1,400	0,000	-0,585		1,400	1,400	ISO 17025	XRF (fusion)	
20	1,514	0,000	1,186		1,514	1,514		XRF (fusion)	
21	1,430		-0,118		1,430			XRF (fusion)	
22	1,455	0,064	0,271		1,410	1,500		XRF (fusion)	
23	1,445	0,007	0,116		1,440	1,450		XRF (fusion)	
25	1,379	0,010	-0,911		1,386	1,372		XRF (fusion)	
26	1,375	0,006	-0,966		1,371	1,380		XRF (fusion)	
27	1,420	0,014	-0,273		1,430	1,410		XRF (fusion)	
28	1,510		1,127		1,510			XRF (fusion)	
29	1,455		0,271		1,455			XRF (fusion)	
30	1,435		-0,040		1,435			XRF (fusion)	
31	1,480		0,661		1,480			XRF (fusion)	
32	1,530		1,439		1,530			XRF (fusion)	
33	1,450	0,000	0,194		1,450	1,450	ISO 17025	XRF (fusion)	
34	1,495	0,007	0,894		1,490	1,500		XRF (fusion)	
37	1,460		0,349		1,460			XRF (fusion)	
38	1,455	0,007	0,271		1,450	1,460		XRF (fusion)	
39	1,410	0,012	-0,421		1,402	1,419	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,070 % TM**
Measurand:	**K2O**	**Repeatability s.d.:**	**0,017 % TM**
Mean ± U(Mean):	**0,903 ± 0,031 % TM**	**Range of tolerance:**	**0,764 - 1,042 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,903 % TM (Empirical value)**	**Target s.d.:**	**0,070 % TM (Empirical value)**



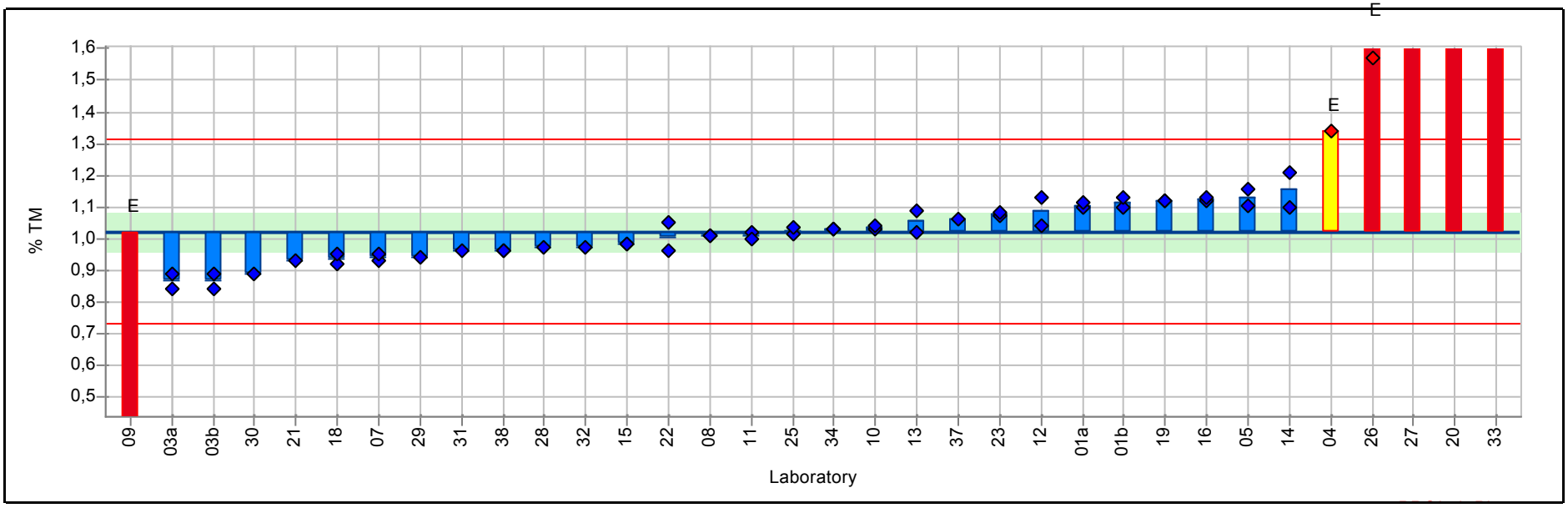
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,843	0,056	-0,875		0,803	0,882		XRF (fusion)	Reconstitution Method
01b	0,839	0,058	-0,925		0,798	0,880		Standardless info only	fusion
03a	0,935	0,021	0,455		0,950	0,920		ICP-OES	ASTM D 6357
03b	0,805	0,021	-1,414		0,790	0,820		XRF (fusion)	ASTM D 4326
04	0,844		-0,853		0,844			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,830	0,010	-1,061		0,822	0,837	ISO 17025	XRF (fusion)	
07	0,967	0,000	0,915		0,967	0,967	ISO 17025	XRF (fusion)	
08	0,876	0,002	-0,398		0,877	0,874		XRF (fusion)	
09	0,900		-0,048		0,900			XRF (Pellet) info only	
10	1,000	0,000	1,390		1,000	1,000	ISO 17025	XRF (fusion)	
11	0,915	0,021	0,168		0,900	0,930	ISO 17025	XRF (fusion)	
12	0,895	0,006	-0,117		0,891	0,900		XRF (fusion)	
13	0,751	0,014	-2,197	E	0,761	0,741		XRF (fusion)	
14	0,826	0,016	-1,112		0,815	0,837		XRF (fusion)	
15	0,861	0,044	-0,609		0,892	0,830		XRF (fusion)	
16	0,925	0,035	0,311		0,900	0,950	ISO 17025	XRF (fusion)	
18	0,730	0,014	-2,492	E	0,740	0,720		XRF (fusion)	
19	0,885	0,007	-0,264		0,880	0,890	ISO 17025	XRF (fusion)	
20	0,908	0,000	0,070		0,908	0,908		XRF (fusion)	
21	0,907		0,053		0,907			XRF (fusion)	
22									
23	0,880	0,014	-0,335		0,870	0,890		XRF (fusion)	
25	0,946	0,008	0,606		0,951	0,940		ICP-OES	
26	0,941	0,001	0,541		0,942	0,940		XRF (fusion)	
27	0,930	0,000	0,383		0,930	0,930		XRF (fusion)	
28	0,990		1,246		0,990			XRF (fusion)	
29	0,960		0,815		0,960			XRF (fusion)	
30	0,895		-0,120		0,895			XRF (fusion)	
31	0,935		0,455		0,935			XRF (fusion)	
32	1,030		1,821		1,030			XRF (fusion)	
33	0,990	0,000	1,246		0,990	0,990	ISO 17025	XRF (fusion)	
34	0,820	0,000	-1,198		0,820	0,820		XRF (fusion)	
37	0,920		0,240		0,920			XRF (fusion)	
38	0,946	0,006	0,606		0,941	0,950		XRF (fusion)	
39	0,928	0,021	0,355		0,913	0,943	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,147 % TM**
Measurand:	**LOI (1h @ 950°C) observed**	**Repeatability s.d.:**	**0,026 % TM**
Mean ± U(Mean):	**1,022 ± 0,063 % TM**	**Range of tolerance:**	**0,729 - 1,315 % TM (|z-score| <= 2,00)**
No. of laboratories:	**34**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,022 % TM (Empirical value)**	**Target s.d.:**	**0,147 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	1,106	0,011	0,573		1,098	1,113		1h@950°C	Gravimetry
01b	1,115	0,023	0,634		1,098	1,131		1h@950°C	Gravimetry
03a	0,865	0,035	-1,068		0,840	0,890		1h@950°C	
03b	0,865	0,035	-1,068		0,840	0,890		1h@950°C	
04	1,340		2,173	E	1,340			1h@950°C	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	1,130	0,038	0,741		1,103	1,157	ISO 17025	DIN EN 15169	
07	0,940	0,014	-0,557		0,930	0,950	ISO 17025	1h@950°C	
08	1,009	0,000	-0,088		1,009	1,009		1h@950°C	
09	0,100		-6,290	E	0,100		ISO 17025	DIN 51719	
10	1,035	0,007	0,092		1,030	1,040	ISO 17025	1h@950°C	Thermogravimetric analyzer
11	1,010	0,014	-0,079		1,020	1,000	ISO 17025	Wet chemistry EN196-2	
12	1,085	0,064	0,433		1,040	1,130		1h@950°C	
13	1,054	0,049	0,221		1,019	1,089		1h@950°C	gravimetric
14	1,155	0,078	0,911		1,100	1,210		1h@950°C	
15	0,980	0,000	-0,284		0,980	0,980		1h@950°C	
16	1,125	0,007	0,706		1,120	1,130	ISO 17025	Wet chemistry EN196-2	
18	0,935	0,021	-0,591		0,920	0,950		1h@950°C	
19	1,120	0,000	0,672		1,120	1,120	ISO 17025	1h@950°C	TGA - not corrected -
20	2,340	0,014	8,998	E	2,350	2,330		Wet chemistry EN196-2	
21	0,930		-0,625		0,930			1h@950°C	
22	1,005	0,064	-0,113		1,050	0,960		1h@950°C	
23	1,075	0,007	0,365		1,070	1,080		1h@950°C	
25	1,025	0,014	0,024		1,015	1,035		1h@950°C	
26	1,640	0,099	4,221	E	1,710	1,570		1h@950°C	
27	2,175	0,035	7,872	E	2,150	2,200		1h@950°C	
28	0,970		-0,352		0,970			1h@950°C	
29	0,940		-0,557		0,940			1h@950°C	
30	0,890		-0,898		0,890			1h@950°C	
31	0,960		-0,420		0,960			1h@950°C	
32	0,970		-0,352		0,970			1h@950°C	
33	2,466	0,006	9,858	E	2,462	2,470		1h@950°C	
34	1,030	0,000	0,058		1,030	1,030		1h@950°C	
37	1,060		0,262		1,060			1h@950°C	
38	0,960	0,000	-0,420		0,960	0,960		1h@950°C	
39									

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,106 % TM**
Measurand:	**MgO**	**Repeatability s.d.:**	**0,019 % TM**
Mean ± U(Mean):	**4,840 ± 0,046 % TM**	**Range of tolerance:**	**4,628 - 5,053 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**4,840 % TM (Empirical value)**	**Target s.d.:**	**0,106 % TM (Empirical value)**

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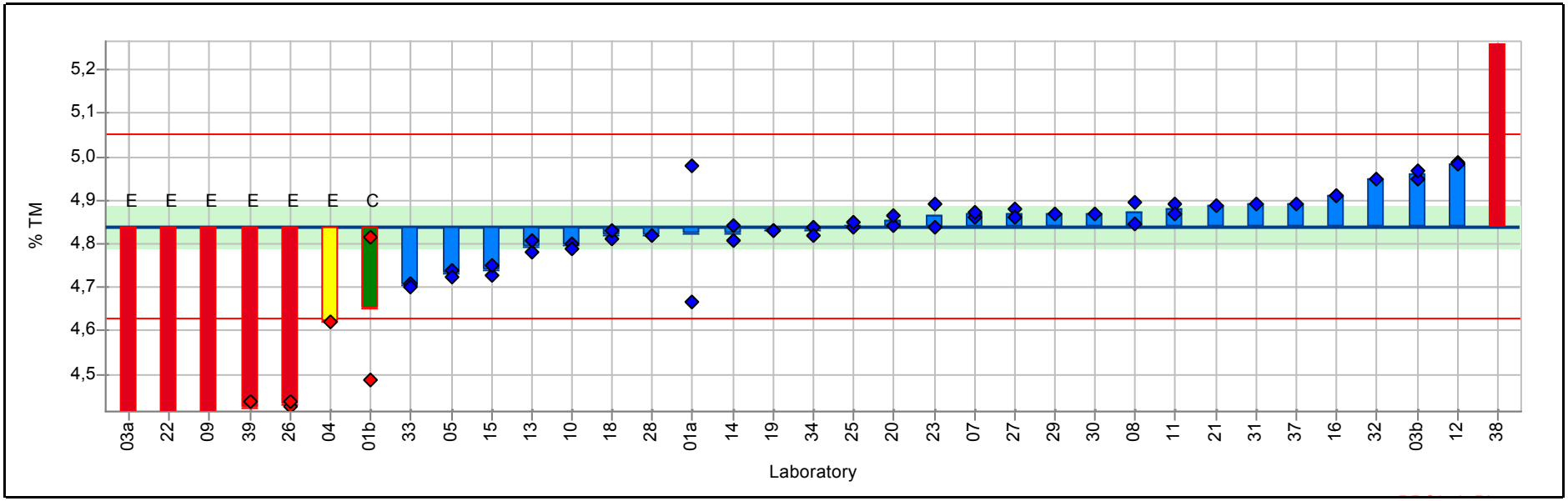

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	4,824	0,221	-0,159		4,980	4,667		XRF (fusion)	Reconstitution Method
01b	4,653	0,232	-1,761	C	4,817	4,489		Standardless info only	fusion
03a	3,750	0,085	-10,248	E	3,810	3,690		ICP-OES	ASTM D 6357
03b	4,960	0,014	1,124		4,950	4,970		XRF (fusion)	ASTM D 4326
04	4,620		-2,071	E	4,620			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	4,732	0,012	-1,015		4,741	4,724	ISO 17025	XRF (fusion)	
07	4,868	0,007	0,260		4,863	4,873	ISO 17025	XRF (fusion)	
08	4,872	0,036	0,302		4,898	4,847		XRF (fusion)	
09	4,200		-6,018	E	4,200			XRF (Pellet) info only	
10	4,795	0,007	-0,426		4,800	4,790	ISO 17025	XRF (fusion)	
11	4,880	0,014	0,372		4,890	4,870	ISO 17025	XRF (fusion)	
12	4,985	0,003	1,362		4,988	4,983		XRF (fusion)	
13	4,794	0,019	-0,431		4,781	4,808		XRF (fusion)	
14	4,825	0,025	-0,149		4,842	4,807		XRF (fusion)	
15	4,739	0,016	-0,956		4,727	4,750		XRF (fusion)	
16	4,910	0,000	0,654		4,910	4,910	ISO 17025	XRF (fusion)	
18	4,820	0,014	-0,191		4,810	4,830		XRF (fusion)	
19	4,830	0,000	-0,097		4,830	4,830	ISO 17025	XRF (fusion)	
20	4,854	0,015	0,125		4,843	4,864		XRF (fusion)	
21	4,888		0,448		4,888			XRF (fusion)	
22	4,105	0,049	-6,911	E	4,140	4,070		XRF (fusion)	
23	4,865	0,035	0,231		4,890	4,840		XRF (fusion)	
25	4,844	0,007	0,034		4,839	4,849		XRF (fusion)	
26	4,431	0,008	-3,847	E	4,425	4,437		XRF (fusion)	
27	4,870	0,014	0,278		4,880	4,860		XRF (fusion)	
28	4,820		-0,191		4,820			XRF (fusion)	
29	4,870		0,278		4,870			XRF (fusion)	
30	4,870		0,278		4,870			XRF (fusion)	
31	4,890		0,466		4,890			XRF (fusion)	
32	4,950		1,030		4,950			XRF (fusion)	
33	4,705	0,007	-1,272		4,710	4,700	ISO 17025	XRF (fusion)	
34	4,830	0,014	-0,097		4,840	4,820		XRF (fusion)	
37	4,890		0,466		4,890			XRF (fusion)	
38	5,422	0,007	5,466	E	5,427	5,417		XRF (fusion)	
39	4,423	0,021	-3,927	E	4,408	4,437	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,026 % TM**
Measurand:	**Mn2O3**	**Repeatability s.d.:**	**0,002 % TM**
Mean ± U(Mean):	**0,148 ± 0,014 % TM**	**Range of tolerance:**	**0,097 - 0,200 % TM (|z-score| <= 2,00)**
No. of laboratories:	**21**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,148 % TM (Empirical value)**	**Target s.d.:**	**0,026 % TM (Empirical value)**

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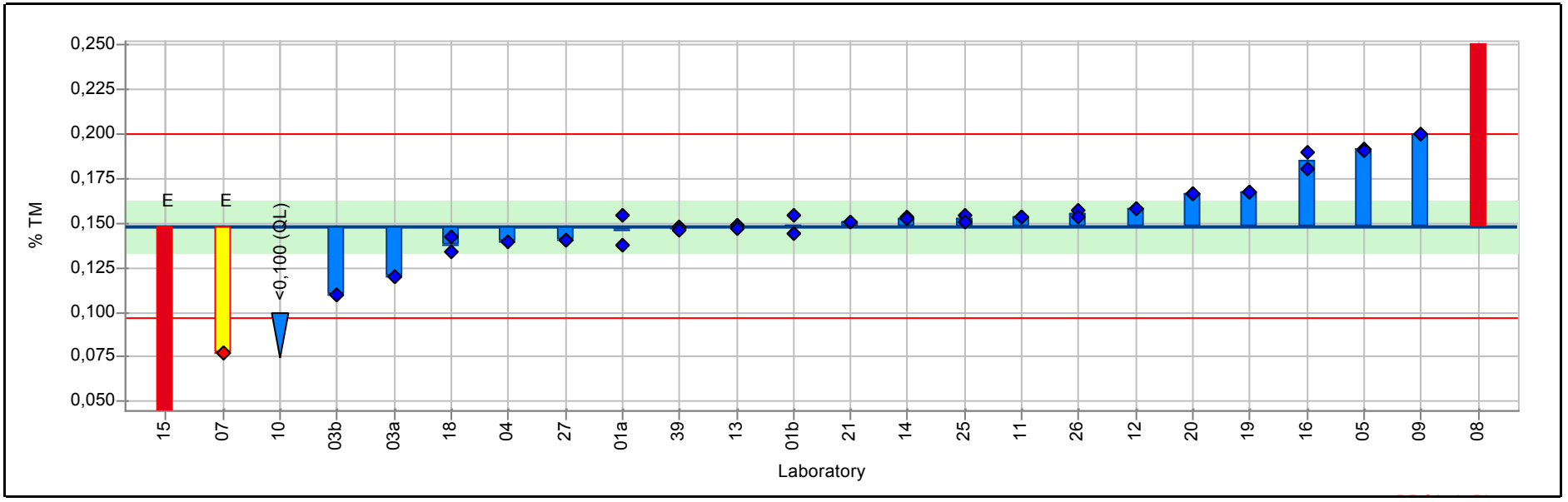


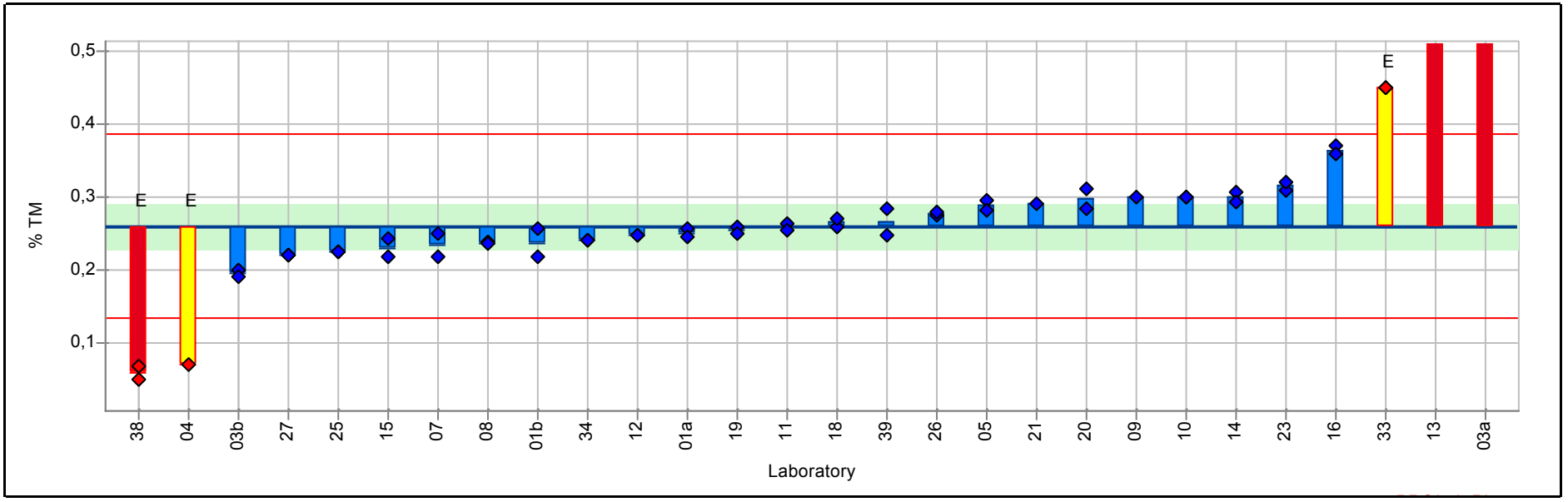
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,146	0,011	-0,088		0,138	0,154		XRF (fusion)	Reconstitution Method
01b	0,149	0,007	0,028		0,144	0,154		Standardless info only	fusion
03a	0,120	0,000	-1,093		0,120	0,120		ICP-OES	ASTM D 6357
03b	0,110	0,000	-1,480		0,110	0,110		XRF (fusion)	ASTM D 4326
04	0,139		-0,359		0,139			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,191	0,000	1,656		0,191	0,191	ISO 17025	XRF (fusion)	
07	0,077	0,000	-2,756	E	0,077	0,077		XRF (fusion)	
08	0,297	0,003	5,750	E	0,299	0,295		XRF (fusion)	
09	0,200		2,000		0,200			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,153	0,000	0,183		0,153	0,153	ISO 17025	XRF (fusion)	
12	0,158	0,000	0,386		0,158	0,158		XRF (fusion)	
13	0,148	0,001	-0,003		0,149	0,147		XRF (fusion)	
14	0,152	0,001	0,163		0,153	0,152		XRF (fusion)	
15	0,040	0,000	-4,201	E	0,040	0,040		XRF (fusion)	
16	0,185	0,007	1,420		0,180	0,190	ISO 17025	XRF (fusion)	
18	0,138	0,006	-0,397		0,134	0,142		XRF (fusion)	
19	0,167	0,000	0,721		0,167	0,167		XRF (fusion)	
20	0,166	0,000	0,686		0,166	0,166		XRF (fusion)	
21	0,151		0,105		0,151			XRF (fusion)	
22									
23									
25	0,152	0,002	0,163		0,154	0,151		XRF (fusion)	
26	0,155	0,003	0,260		0,157	0,153		XRF (fusion)	
27	0,140	0,000	-0,320		0,140	0,140		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,147	0,001	-0,049		0,148	0,146	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,063 % TM**
Measurand:	**Na2O**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**0,260 ± 0,031 % TM**	**Range of tolerance:**	**0,133 - 0,387 % TM (|z-score| <= 2,00)**
No. of laboratories:	**26**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,260 % TM (Empirical value)**	**Target s.d.:**	**0,063 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,251	0,008	-0,147		0,257	0,245		XRF (fusion)	
01b	0,237	0,028	-0,360		0,257	0,218		Standardless info only	fusion
03a	0,630	0,028	5,827	E	0,650	0,610		ICP-OES	ASTM D 6357
03b	0,195	0,007	-1,030		0,200	0,190		XRF (fusion)	ASTM D 4326
04	0,071		-2,984	E	0,071			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,289	0,008	0,448		0,295	0,283	ISO 17025	XRF (fusion)	
07	0,234	0,021	-0,415		0,219	0,249	ISO 17025	ICP-OES	
08	0,237	0,002	-0,369		0,238	0,235		XRF (fusion)	
09	0,300		0,626		0,300			XRF (Pellet) info only	
10	0,300	0,000	0,626		0,300	0,300		ICP-OES	
11	0,259	0,006	-0,021		0,263	0,255	ISO 17025	XRF (fusion)	
12	0,247	0,000	-0,205		0,247	0,247		XRF (fusion)	
13	0,571	0,004	4,897	E	0,574	0,568		XRF (fusion)	
14	0,300	0,010	0,626		0,307	0,293		XRF (fusion)	
15	0,231	0,018	-0,467		0,218	0,244		XRF (fusion)	
16	0,365	0,007	1,650		0,370	0,360	ISO 17025	XRF (fusion)	
18	0,265	0,007	0,074		0,260	0,270		XRF (fusion)	
19	0,255	0,007	-0,084		0,260	0,250		XRF (fusion)	
20	0,298	0,021	0,592		0,283	0,313		XRF (fusion)	
21	0,291		0,484		0,291			XRF (fusion)	
22									
23	0,315	0,007	0,862		0,310	0,320		XRF (fusion)	
25	0,225	0,001	-0,557		0,226	0,224		ICP-OES	
26	0,278	0,002	0,271		0,276	0,279		XRF (fusion)	
27	0,220	0,000	-0,635		0,220	0,220		XRF (fusion)	
28									
29									
30									
31									
32									
33	0,450	0,000	2,990	E	0,450	0,450	ISO 17025	XRF (fusion)	
34	0,240	0,000	-0,320		0,240	0,240		XRF (fusion)	
37									
38	0,059	0,014	-3,169	E	0,050	0,069		XRF (fusion)	
39	0,266	0,026	0,098		0,248	0,285	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,008 % TM**
Measurand:	**P2O5**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,024 ± 0,004 % TM**	**Range of tolerance:**	**0,009 - 0,040 % TM (|z-score| <= 2,00)**
No. of laboratories:	**20**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,024 % TM (Empirical value)**	**Target s.d.:**	**0,008 % TM (Empirical value)**

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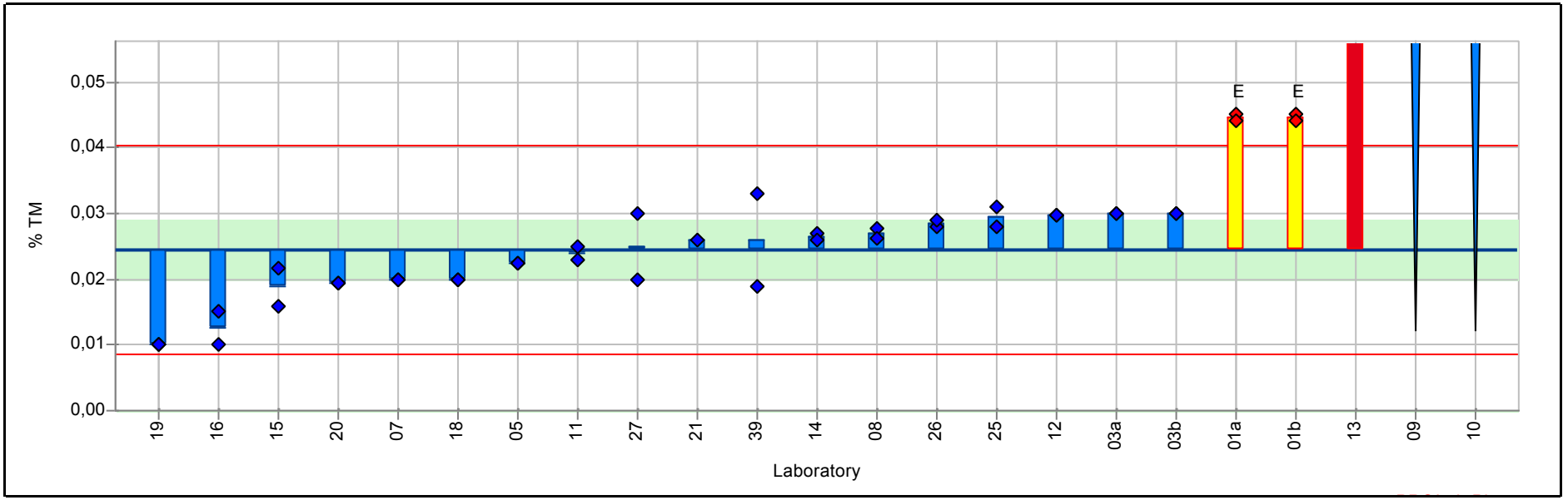


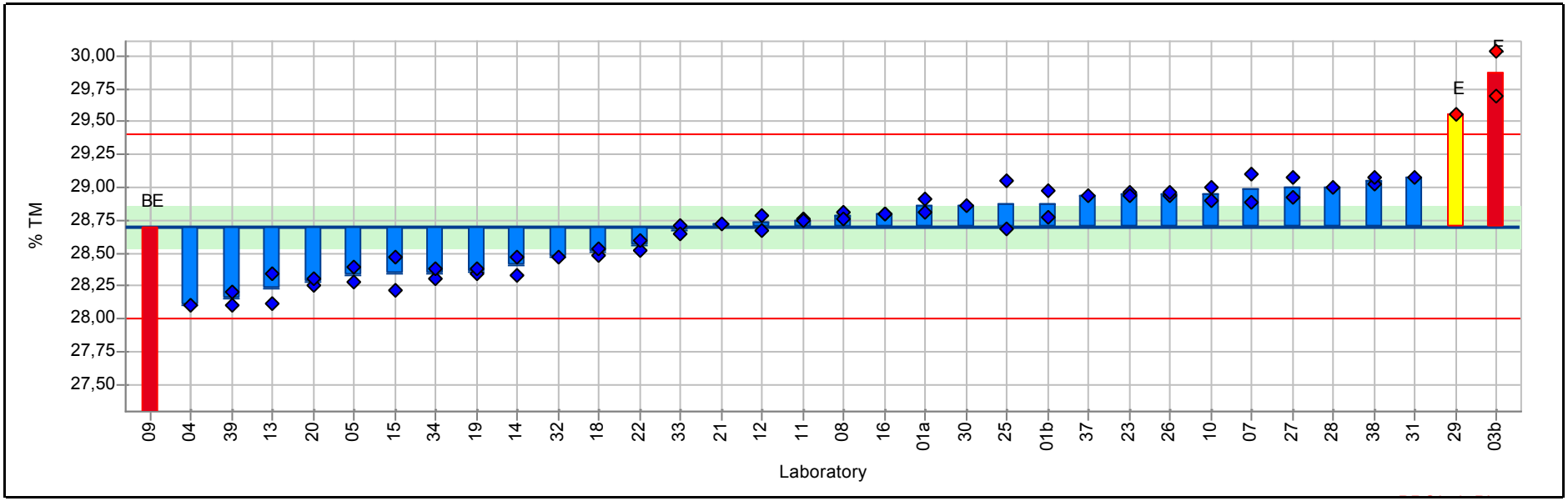
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,044	0,001	2,526	E	0,045	0,044		XRF (fusion)	
01b	0,044	0,001	2,526	E	0,045	0,044		Standardless info only	fusion
03a	0,030	0,000	0,701		0,030	0,030		ICP-OES	ASTM D 6357
03b	0,030	0,000	0,701		0,030	0,030		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,022	0,000	-0,262		0,022	0,022	ISO 17025	XRF (fusion)	
07	0,020	0,000	-0,557		0,020	0,020	ISO 17025	XRF (fusion)	
08	0,027	0,001	0,308		0,028	0,026		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,024	0,001	-0,054		0,025	0,023	ISO 17025	XRF (fusion)	
12	0,030	0,000	0,661		0,030	0,030		XRF (fusion)	
13	0,063	0,003	4,861	E	0,061	0,066		XRF (fusion)	
14	0,026	0,001	0,261		0,027	0,026		XRF (fusion)	
15	0,019	0,004	-0,706		0,016	0,022		XRF (fusion)	
16	0,013	0,004	-1,501		0,010	0,015	ISO 17025	XRF (fusion)	
18	0,020	0,000	-0,557		0,020	0,020		XRF (fusion)	
19	0,010	0,000	-1,816		0,010	0,010		XRF (fusion)	
20	0,020	0,000	-0,616		0,020	0,020		XRF (fusion)	
21	0,026		0,198		0,026			XRF (fusion)	
22									
23									
25	0,029	0,002	0,639		0,028	0,031		XRF (fusion)	
26	0,029	0,001	0,513		0,028	0,029		XRF (fusion)	
27	0,025	0,007	0,072		0,020	0,030		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,026	0,010	0,198		0,019	0,033	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,352 % TM**
Measurand:	**SiO2**	**Repeatability s.d.:**	**0,095 % TM**
Mean ± U(Mean):	**28,702 ± 0,156 % TM**	**Range of tolerance:**	**27,998 - 29,406 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**28,702 % TM (Empirical value)**	**Target s.d.:**	**0,352 % TM (Empirical value)**



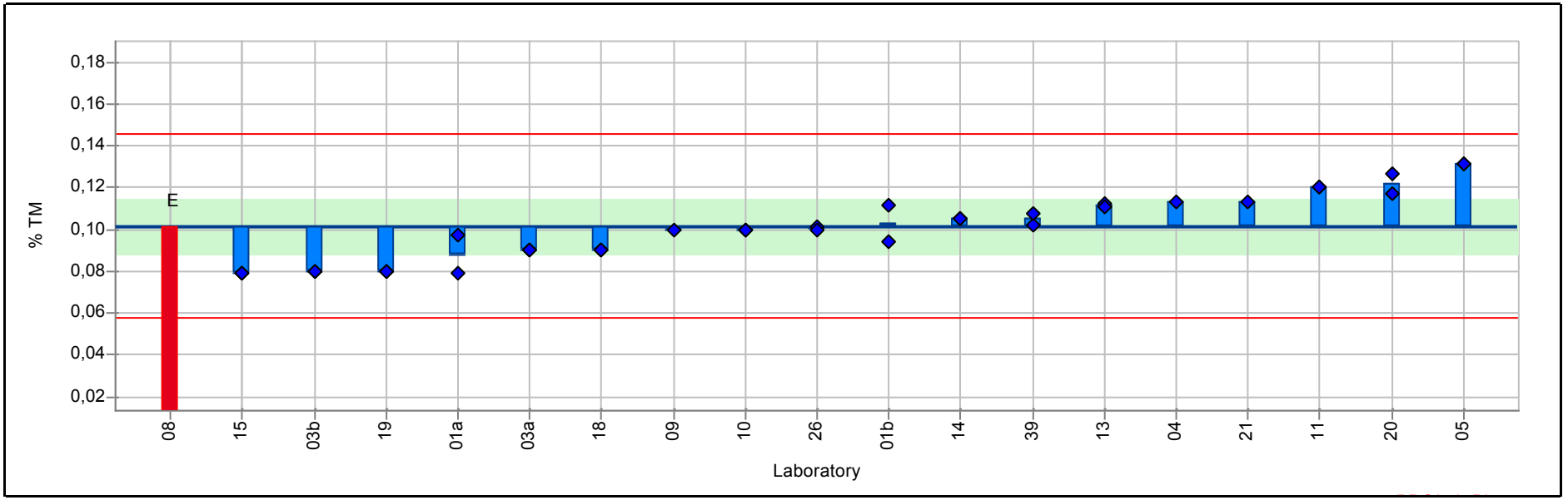
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	28,858	0,067	0,442		28,905	28,810		XRF (fusion)	Reconstitution Method
01b	28,875	0,146	0,490		28,978	28,771		Standardless info only	fusion
03a									
03b	29,865	0,247	3,304	E	29,690	30,040		XRF (fusion)	ASTM D 4326
04	28,100		-1,711		28,100			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	28,334	0,085	-1,047		28,393	28,274	ISO 17025	XRF (fusion)	
07	28,992	0,148	0,825		29,097	28,888	ISO 17025	XRF (fusion)	
08	28,785	0,031	0,237		28,808	28,763		XRF (fusion)	
09	24,600		-11,654	BE	24,600			XRF (Pellet) info only	
10	28,950	0,071	0,704		29,000	28,900	ISO 17025	XRF (fusion)	
11	28,750	0,014	0,136		28,760	28,740	ISO 17025	XRF (fusion)	
12	28,730	0,081	0,079		28,787	28,672		XRF (fusion)	
13	28,230	0,156	-1,341		28,340	28,120		XRF (fusion)	
14	28,401	0,101	-0,857		28,472	28,329		XRF (fusion)	
15	28,344	0,175	-1,016		28,221	28,468		XRF (fusion)	
16	28,800	0,000	0,278		28,800	28,800	ISO 17025	XRF (fusion)	
18	28,505	0,035	-0,560		28,480	28,530		XRF (fusion)	
19	28,360	0,028	-0,972		28,340	28,380	ISO 17025	XRF (fusion)	
20	28,282	0,032	-1,193		28,260	28,305		XRF (fusion)	
21	28,720		0,051		28,720			XRF (fusion)	
22	28,555	0,049	-0,418		28,520	28,590		XRF (fusion)	
23	28,945	0,021	0,690		28,960	28,930		XRF (fusion)	
25	28,870	0,260	0,477		29,054	28,686		XRF (fusion)	
26	28,949	0,013	0,701		28,940	28,958		XRF (fusion)	
27	29,000	0,113	0,846		29,080	28,920		XRF (fusion)	
28	29,000		0,846		29,000			XRF (fusion)	
29	29,550		2,409	E	29,550			XRF (fusion)	
30	28,865		0,463		28,865			XRF (fusion)	
31	29,075		1,059		29,075			XRF (fusion)	
32	28,470		-0,659		28,470			XRF (fusion)	
33	28,675	0,049	-0,077		28,710	28,640	ISO 17025	XRF (fusion)	
34	28,345	0,049	-1,014		28,310	28,380		XRF (fusion)	
37	28,930		0,648		28,930			XRF (fusion)	
38	29,045	0,035	0,974		29,020	29,070		XRF (fusion)	
39	28,150	0,071	-1,568		28,100	28,200	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,022 % TM**
Measurand:	**SrO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,102 ± 0,013 % TM**	**Range of tolerance:**	**0,058 - 0,146 % TM (|z-score| <= 2,00)**
No. of laboratories:	**17**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,102 % TM (Empirical value)**	**Target s.d.:**	**0,022 % TM (Empirical value)**



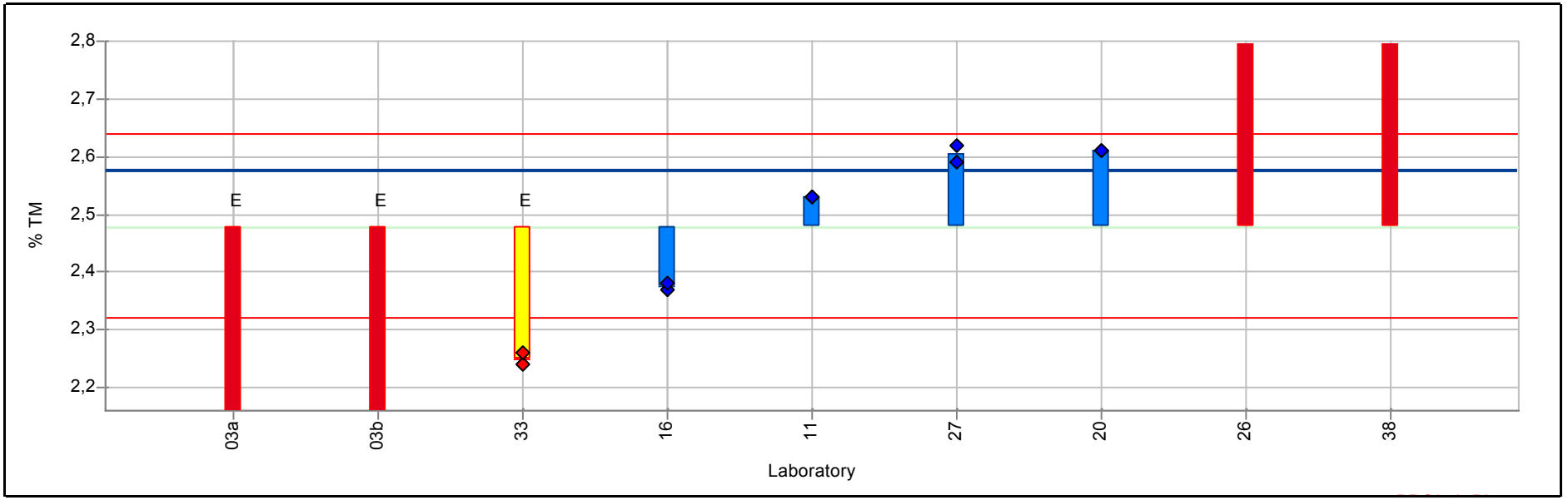
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,088	0,013	-0,623		0,079	0,097		XRF (fusion)	Reconstitution Method
01b	0,103	0,013	0,057		0,094	0,112		Standardless info only	fusion
03a	0,090	0,000	-0,532		0,090	0,090		ICP-OES	ASTM D 6357
03b	0,080	0,000	-0,985		0,080	0,080		XRF (fusion)	ASTM D 4326
04	0,113		0,510		0,113			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,131	0,000	1,342		0,132	0,131	ISO 17025	XRF (fusion)	
07									
08	0,003	0,001	-4,457	E	0,004	0,003		XRF (fusion)	
09	0,100		-0,079		0,100			XRF (Pellet) info only	
10	0,100	0,000	-0,079		0,100	0,100		ICP-OES	
11	0,120	0,000	0,828		0,120	0,120	ISO 17025	XRF (fusion)	
12									
13	0,112	0,001	0,447		0,112	0,111		XRF (fusion)	
14	0,105	0,000	0,148		0,105	0,105		XRF (fusion)	
15	0,079	0,000	-1,021		0,079	0,079		XRF (fusion)	
16									
18	0,090	0,000	-0,532		0,090	0,090		XRF (fusion)	
19	0,080	0,000	-0,985		0,080	0,080		XRF (fusion)	
20	0,122	0,007	0,922		0,127	0,117		XRF (fusion)	
21	0,113		0,510		0,113			XRF (fusion)	
22									
23									
25									
26	0,101	0,001	-0,056		0,101	0,100		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,105	0,004	0,148		0,102	0,108	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,745 % TM**
Measurand:	**Sulfate expressed as SO3**	**Repeatability s.d.:**	**0,010 % TM**
Mean ± U(Mean):	**2,575 ± 0,620 % TM**	**Range of tolerance:**	**2,320 - 2,640 % TM (|z-score| <= 2,00)**
No. of laboratories:	**9**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,480 % TM (Reference value)**	**Target s.d.:**	**0,080 % TM (Reference value)**



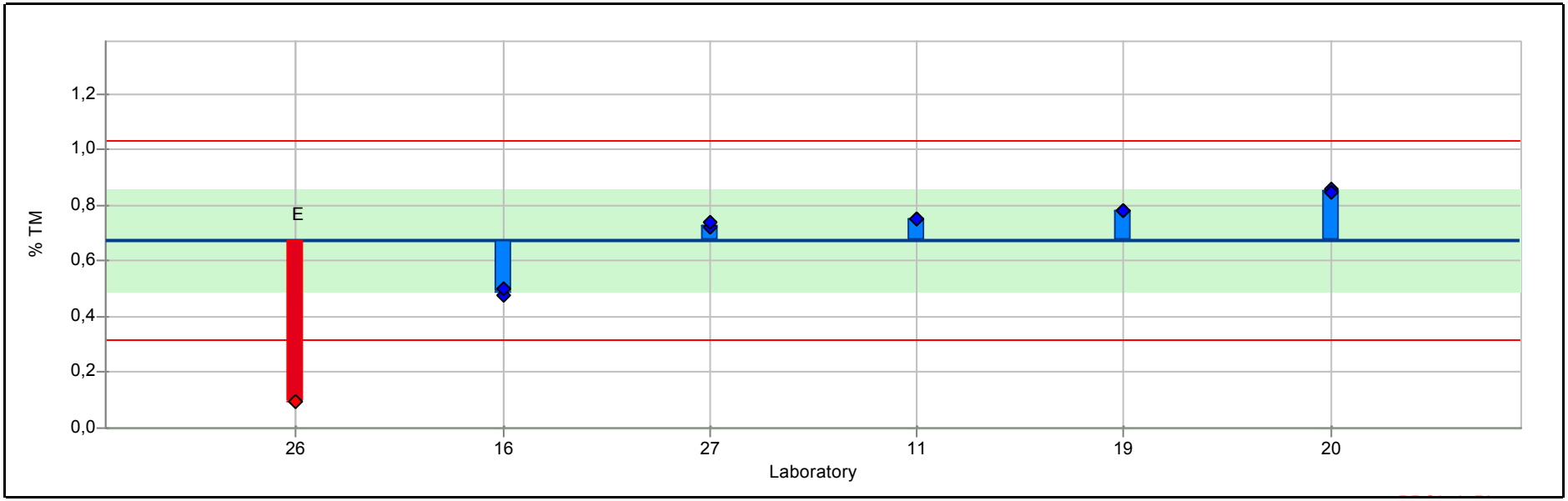
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,034	0,001	-30,575	E	0,033	0,035		Wet chemistry EN196-2	
03b	0,034	0,001	-30,575	E	0,033	0,035		Wet chemistry EN196-2	
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	2,530	0,000	0,625		2,530	2,530		Wet chemistry EN196-2	
12									
13									
14									
15									
16	2,375	0,007	-1,312		2,370	2,380	ISO 17025	Wet chemistry EN196-2	
18									
19									
20	2,610	0,000	1,625		2,610	2,610		Wet chemistry EN196-2	
21									
22									
23									
25									
26	3,581	0,008	13,763	E	3,587	3,575		Wet chemistry EN196-2	
27	2,605	0,021	1,563		2,590	2,620		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33	2,250	0,014	-2,875	E	2,240	2,260	ISO 17025	Wet chemistry EN196-2	
34									
37									
38	4,210	0,014	21,625	E	4,220	4,200		Wet chemistry EN196-2	
39									

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,179 % TM**
Measurand:	**Sulfide expressed as S**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**0,676 ± 0,182 % TM**	**Range of tolerance:**	**0,319 - 1,033 % TM (|z-score| <= 2,00)**
No. of laboratories:	**6**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,676 % TM (Empirical value)**	**Target s.d.:**	**0,179 % TM (Empirical value)**



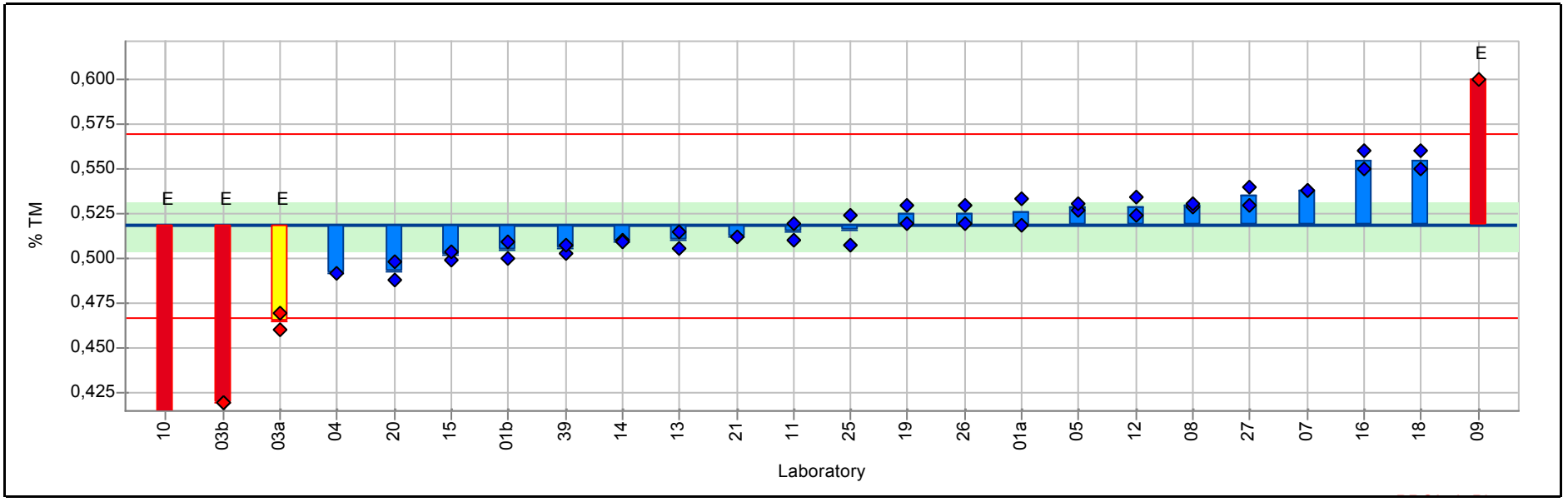
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a									
03b									
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	0,750	0,000	0,414		0,750	0,750		Wet chemistry EN196-2	
12									
13									
14									
15									
16	0,490	0,014	-1,041		0,480	0,500	ISO 17025	Wet chemistry EN196-2	
18									
19	0,780	0,001	0,579		0,779	0,780	ISO 17025	Wet chemistry EN196-2	
20	0,855	0,007	1,002		0,860	0,850		Wet chemistry EN196-2	
21									
22									
23									
25									
26	0,097	0,002	-3,244	E	0,095	0,098		Wet chemistry EN196-2	
27	0,730	0,014	0,302		0,720	0,740		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39									

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,026 % TM**
Measurand:	**TiO2**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**0,518 ± 0,014 % TM**	**Range of tolerance:**	**0,467 - 0,570 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,518 % TM (Empirical value)**	**Target s.d.:**	**0,026 % TM (Empirical value)**



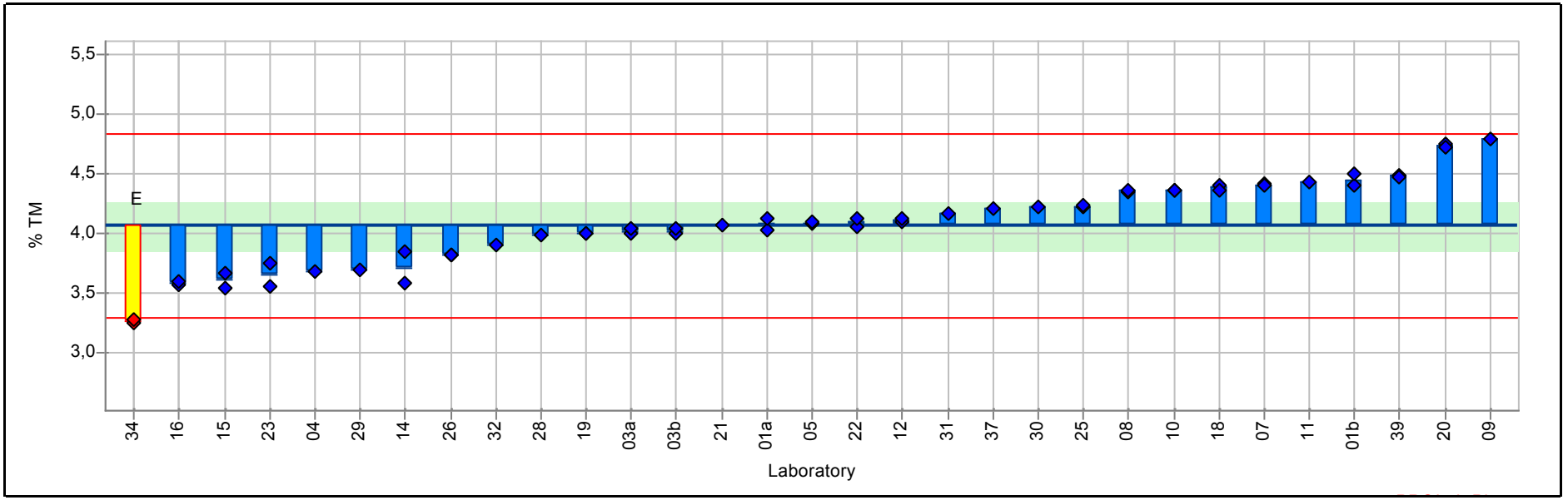
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,526	0,010	0,303		0,519	0,533		XRF (fusion)	Reconstitution Method
01b	0,504	0,006	-0,530		0,500	0,509		Standardless info only	fusion
03a	0,465	0,007	-2,063	E	0,470	0,460		ICP-OES	ASTM D 6357
03b	0,420	0,000	-3,808	E	0,420	0,420		XRF (fusion)	ASTM D 4326
04	0,492		-1,015		0,492			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,529	0,002	0,418		0,527	0,531	ISO 17025	XRF (fusion)	
07	0,538	0,000	0,769		0,538	0,538	ISO 17025	XRF (fusion)	
08	0,530	0,001	0,448		0,529	0,530		XRF (fusion)	
09	0,600		3,174	E	0,600			XRF (Pellet) info only	
10	0,380	0,000	-5,359	E	0,380	0,380	ISO 17025	XRF (fusion)	
11	0,515	0,007	-0,123		0,510	0,520	ISO 17025	XRF (fusion)	
12	0,529	0,007	0,428		0,534	0,524		XRF (fusion)	
13	0,510	0,007	-0,307		0,515	0,505		XRF (fusion)	
14	0,510	0,001	-0,337		0,510	0,509		XRF (fusion)	
15	0,502	0,004	-0,645		0,499	0,504		XRF (fusion)	
16	0,555	0,007	1,428		0,550	0,560		XRF (fusion)	
18	0,555	0,007	1,428		0,560	0,550		XRF (fusion)	
19	0,525	0,007	0,265		0,530	0,520		XRF (fusion)	
20	0,493	0,007	-0,969		0,488	0,498		XRF (fusion)	
21	0,512		-0,240		0,512			XRF (fusion)	
22									
23									
25	0,516	0,011	-0,084		0,524	0,508		XRF (fusion)	
26	0,525	0,007	0,265		0,530	0,520		XRF (fusion)	
27	0,535	0,007	0,653		0,540	0,530		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,506	0,004	-0,492		0,503	0,508	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,387 % TM**
Measurand:	**Total S expressed as SO3**	**Repeatability s.d.:**	**0,025 % TM**
Mean ± U(Mean):	**4,067 ± 0,202 % TM**	**Range of tolerance:**	**3,293 - 4,841 % TM (|z-score| <= 2,00)**
No. of laboratories:	**23**	**Method:**	**DIN 38402 A45**
Assigned value:	**4,067 % TM (Empirical value)**	**Target s.d.:**	**0,387 % TM (Empirical value)**



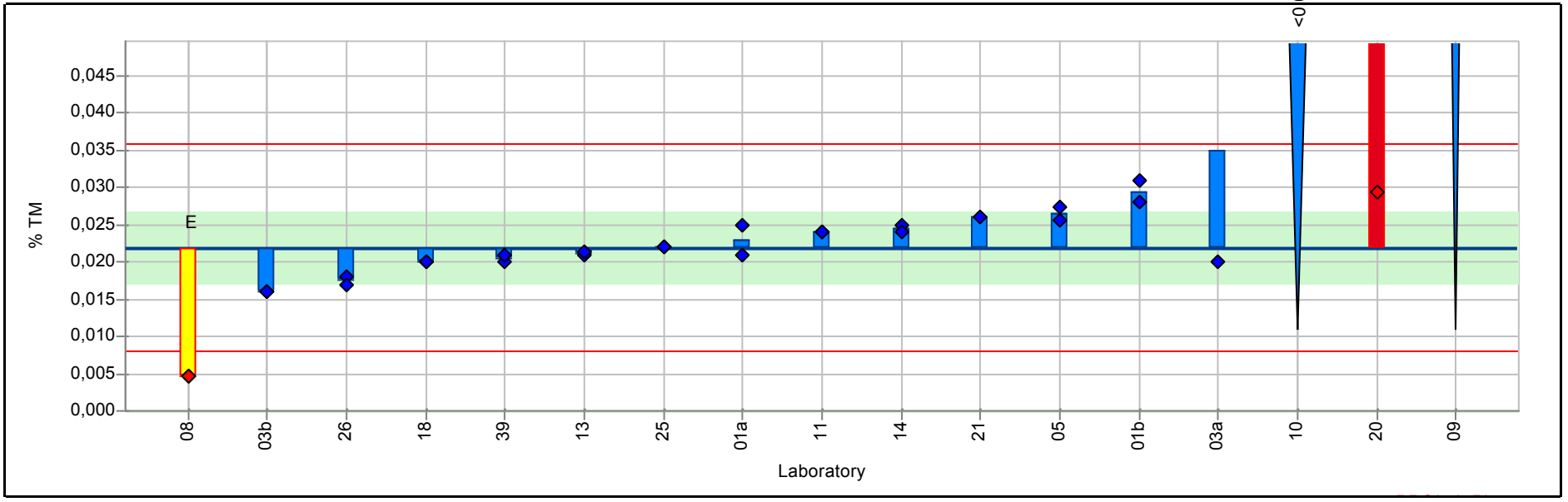
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	4,081	0,066	0,036		4,034	4,128		XRF (fusion)	Reconstitution Method
01b	4,455	0,062	1,002		4,411	4,499		Standardless info only	fusion
03a	4,025	0,035	-0,109		4,000	4,050		combustion	ASTM D 5016
03b	4,025	0,035	-0,109		4,000	4,050		combustion	
04	3,680		-1,000		3,680			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	4,092	0,012	0,063		4,083	4,100	ISO 17025	XRF (fusion)	
07	4,414	0,014	0,896		4,424	4,404	ISO 17025	XRF (fusion)	
08	4,363	0,010	0,765		4,356	4,370		XRF (fusion)	
09	4,800		1,894		4,800			XRF (Pellet) info only	
10	4,370	0,000	0,783		4,370	4,370	ISO 17025	combustion	
11	4,440		0,964		4,440		ISO 17025	combustion	
12	4,116	0,023	0,127		4,100	4,133		XRF (fusion)	
13									
14	3,717	0,181	-0,905		3,845	3,589		XRF (fusion)	
15	3,615	0,088	-1,168		3,678	3,553		XRF (fusion)	
16	3,590	0,014	-1,233		3,580	3,600	ISO 17025	Wet chemistry EN196-2	
18	4,390	0,028	0,834		4,410	4,370		XRF (fusion)	
19	4,005	0,007	-0,160		4,000	4,010	ISO 17025	XRF (fusion)	
20	4,740	0,014	1,739		4,750	4,730		combustion	With LECO instrument - S
21	4,080		0,033		4,080			XRF (fusion)	
22	4,095	0,049	0,072		4,060	4,130		XRF (Pellet) info only	
23	3,655	0,134	-1,065		3,750	3,560		XRF (fusion)	
25	4,233	0,007	0,428		4,228	4,238		combustion	
26	3,823	0,004	-0,631		3,820	3,826		XRF (fusion)	
27									
28	3,990		-0,199		3,990			XRF (Pellet) info only	
29	3,705		-0,936		3,705			XRF (Pellet) info only	
30	4,220		0,395		4,220			XRF (Pellet) info only	
31	4,165		0,253		4,165			XRF (Pellet) info only	
32	3,910		-0,406		3,910			XRF (Pellet) info only	
33									
34	3,265	0,021	-2,073	E	3,250	3,280		XRF (fusion)	
37	4,210		0,369		4,210			XRF (fusion)	
38									
39	4,485	0,007	1,080		4,490	4,480	ISO 17025	combustion	Leco DIN 51085

RV113

Sample:	**FLX-CRM 114**	**Reproducibility s.d.:**	**0,007 % TM**
Measurand:	**ZnO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,022 ± 0,005 % TM**	**Range of tolerance:**	**0,008 - 0,036 % TM (|z-score| <= 2,00)**
No. of laboratories:	**13**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,022 % TM (Empirical value)**	**Target s.d.:**	**0,007 % TM (Empirical value)**



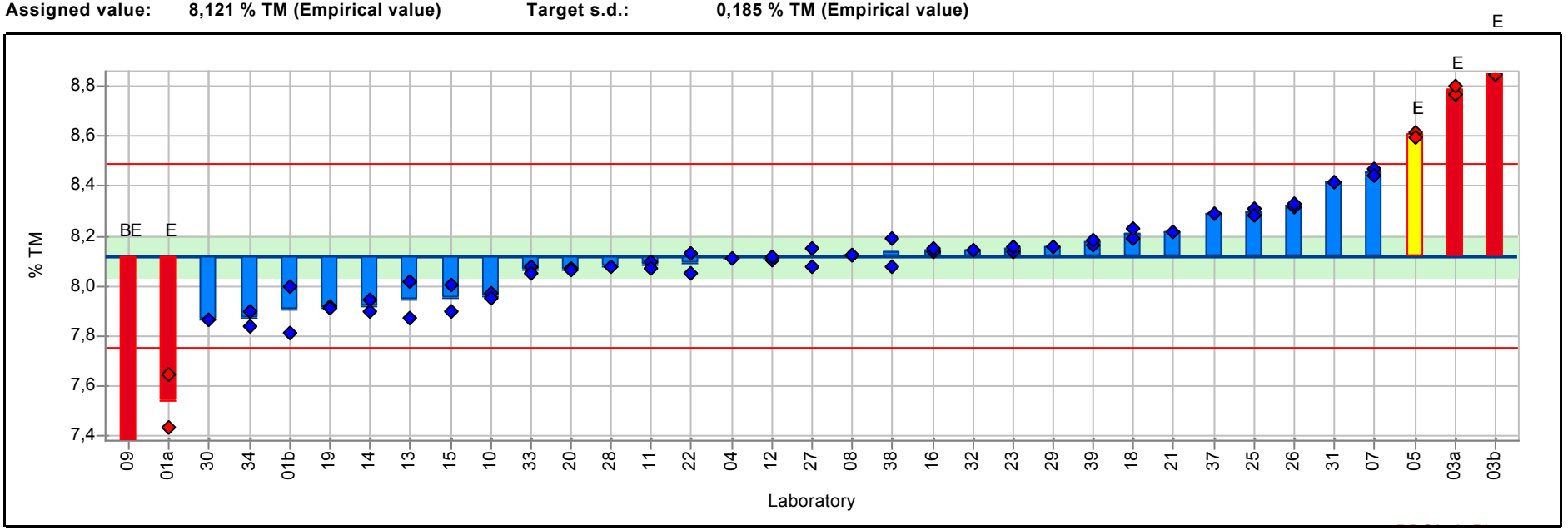
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,023	0,003	0,156		0,021	0,025		XRF (fusion)	Reconstitution Method
01b	0,029	0,002	1,093		0,028	0,031		Standardless info only	fusion
03a	0,035	0,021	1,886		0,020	0,050		ICP-OES	ASTM D 6357
03b	0,016	0,000	-0,854		0,016	0,016		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,027	0,001	0,663		0,026	0,027	ISO 17025	XRF (fusion)	
07									
08	0,005	0,000	-2,488	E	0,005	0,005		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,050	<0,050		ICP-OES	
11	0,024	0,000	0,300		0,024	0,024	ISO 17025	XRF (fusion)	
12									
13	0,021	0,000	-0,105		0,021	0,021		XRF (fusion)	
14	0,025	0,001	0,372		0,025	0,024		XRF (fusion)	
15									
16									
18	0,020	0,000	-0,277		0,020	0,020		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,073	0,062	7,402	E	0,029	0,117		XRF (fusion)	
21	0,026		0,588		0,026			XRF (fusion)	
22									
23									
25	0,022	0,000	0,011		0,022	0,022		XRF (Pellet) info only	XRF pressed pellet
26	0,018	0,001	-0,638		0,018	0,017		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,021	0,001	-0,205		0,020	0,021	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,185 % TM**
Measurand:	**Al2O3**	**Repeatability s.d.:**	**0,031 % TM**
Mean ± U(Mean):	**8,121 ± 0,080 % TM**	**Range of tolerance:**	**7,752 - 8,491 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**8,121 % TM (Empirical value)**	**Target s.d.:**	**0,185 % TM (Empirical value)**



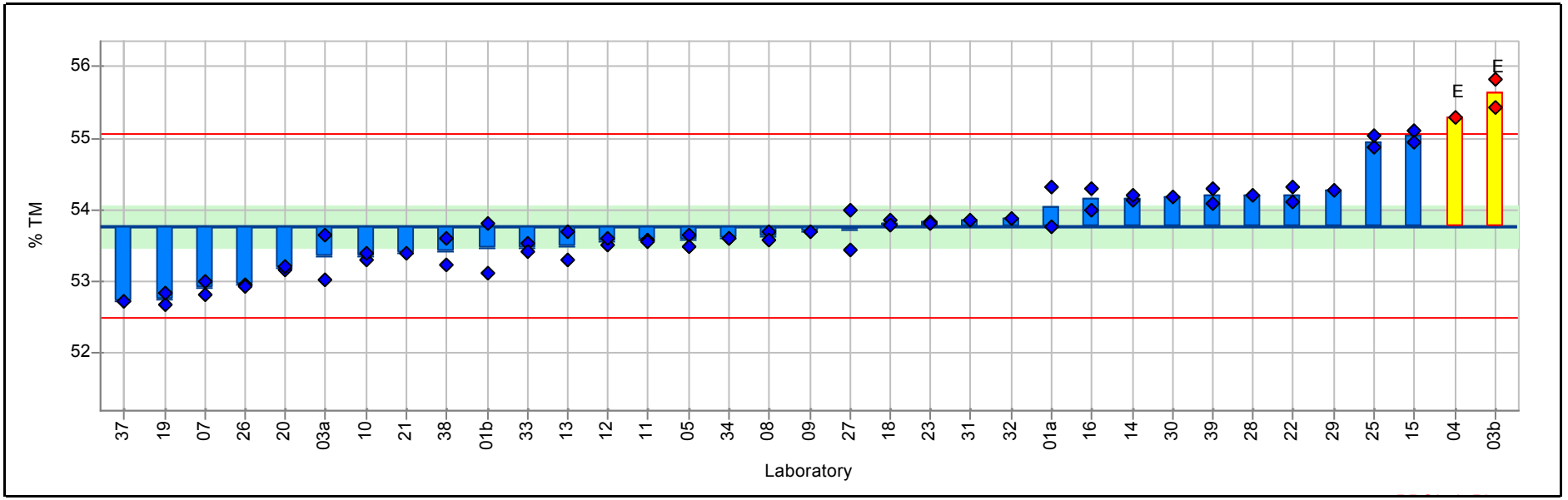
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	7,540	0,152	-3,149	E	7,647	7,432		XRF (fusion)	Reconstitution Method
01b	7,909	0,132	-1,149		8,002	7,816		Standardless info only	fusion
03a	8,785	0,021	3,590	E	8,770	8,800		ICP-OES	ASTM D 6357
03b	8,955	0,148	4,510	E	8,850	9,060		XRF (fusion)	ASTM D 4326
04	8,110		-0,062		8,110			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	8,607	0,012	2,625	E	8,615	8,598	ISO 17025	XRF (fusion)	
07	8,455	0,021	1,805		8,470	8,440	ISO 17025	XRF (fusion)	
08	8,126	0,002	0,026		8,125	8,127		XRF (fusion)	
09	6,800		-7,150	BE	6,800			XRF (Pellet) info only	
10	7,960	0,014	-0,873		7,970	7,950	ISO 17025	XRF (fusion)	
11	8,085	0,021	-0,197		8,100	8,070	ISO 17025	XRF (fusion)	
12	8,112	0,008	-0,049		8,107	8,118		XRF (fusion)	
13	7,944	0,101	-0,957		8,016	7,873		XRF (fusion)	
14	7,922	0,030	-1,076		7,944	7,901		XRF (fusion)	
15	7,951	0,073	-0,919		7,900	8,003		XRF (fusion)	
16	8,145	0,007	0,128		8,140	8,150	ISO 17025	XRF (fusion)	
18	8,210	0,028	0,479		8,190	8,230		XRF (fusion)	
19	7,915	0,007	-1,117		7,920	7,910	ISO 17025	XRF (fusion)	
20	8,068	0,007	-0,288		8,073	8,063		XRF (fusion)	
21	8,220		0,533		8,220			XRF (fusion)	
22	8,090	0,057	-0,170		8,050	8,130		XRF (fusion)	
23	8,150	0,014	0,155		8,140	8,160		XRF (fusion)	
25	8,298	0,021	0,955		8,313	8,283		XRF (fusion)	
26	8,325	0,006	1,099		8,320	8,329		XRF (fusion)	
27	8,115	0,049	-0,035		8,080	8,150		XRF (fusion)	
28	8,080		-0,224		8,080			XRF (fusion)	
29	8,155		0,182		8,155			XRF (fusion)	
30	7,865		-1,387		7,865			XRF (fusion)	
31	8,415		1,588		8,415			XRF (fusion)	
32	8,145		0,128		8,145			XRF (fusion)	
33	8,065	0,021	-0,305		8,080	8,050	ISO 17025	XRF (fusion)	
34	7,870	0,042	-1,360		7,840	7,900		XRF (fusion)	
37	8,290		0,912		8,290			XRF (fusion)	
38	8,135	0,078	0,074		8,190	8,080		XRF (fusion)	
39	8,175	0,015	0,293		8,165	8,186	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,644 % TM**
Measurand:	**CaO**	**Repeatability s.d.:**	**0,165 % TM**
Mean ± U(Mean):	**53,777 ± 0,280 % TM**	**Range of tolerance:**	**52,489 - 55,065 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**53,777 % TM (Empirical value)**	**Target s.d.:**	**0,644 % TM (Empirical value)**



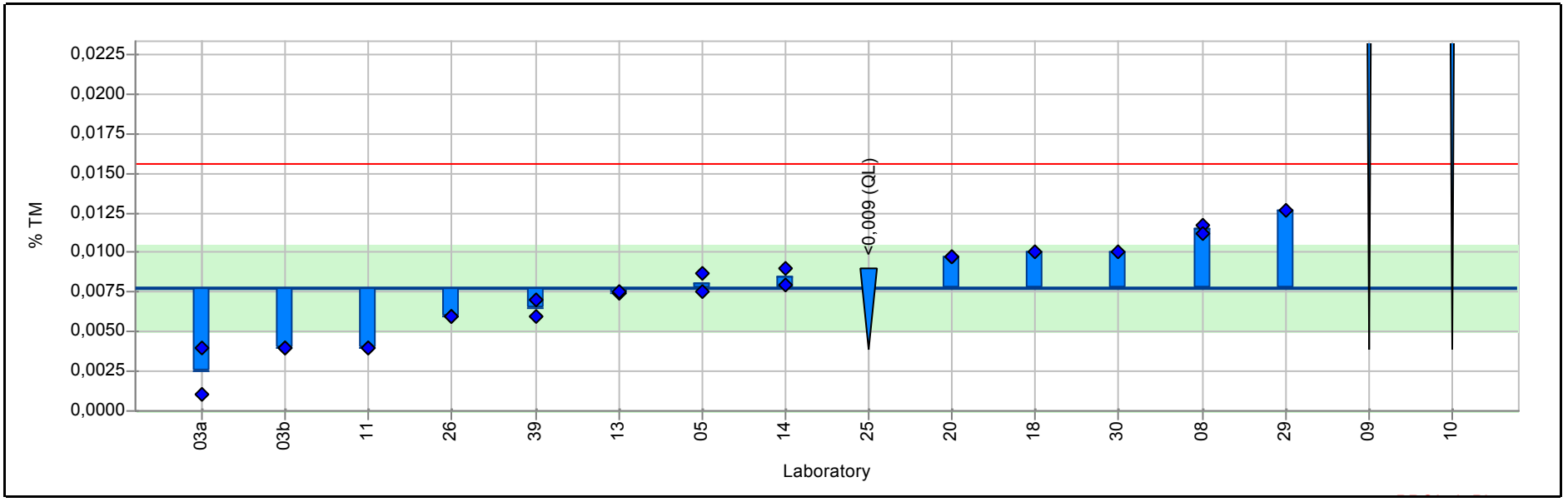
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	54,038	0,394	0,405		53,759	54,316		XRF (fusion)	Reconstitution Method
01b	53,456	0,493	-0,499		53,107	53,804		Standardless info only	fusion
03a	53,340	0,438	-0,678		53,030	53,650		ICP-OES	ASTM D 6357
03b	55,635	0,276	2,885	E	55,830	55,440		XRF (fusion)	ASTM D 4326
04	55,300		2,365	E	55,300			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	53,575	0,113	-0,313		53,655	53,495	ISO 17025	XRF (fusion)	
07	52,912	0,141	-1,344		52,812	53,011	ISO 17025	XRF (fusion)	
08	53,634	0,092	-0,222		53,699	53,569		XRF (fusion)	
09	53,700		-0,119		53,700			XRF (Pellet) info only	
10	53,350	0,071	-0,663		53,300	53,400	ISO 17025	XRF (fusion)	
11	53,570	0,028	-0,321		53,590	53,550	ISO 17025	XRF (fusion)	
12	53,563	0,073	-0,332		53,511	53,615		XRF (fusion)	
13	53,495	0,276	-0,437		53,690	53,300		XRF (fusion)	
14	54,168	0,040	0,607		54,139	54,196		XRF (fusion)	
15	55,034	0,111	1,952		55,112	54,955		XRF (fusion)	
16	54,150	0,212	0,580		54,300	54,000	ISO 17025	XRF (fusion)	
18	53,820	0,042	0,067		53,850	53,790		XRF (fusion)	
19	52,760	0,099	-1,579		52,690	52,830	ISO 17025	XRF (fusion)	
20	53,191	0,034	-0,909		53,167	53,215		XRF (fusion)	
21	53,400		-0,585		53,400			XRF (fusion)	
22	54,215	0,134	0,680		54,120	54,310		XRF (fusion)	
23	53,825	0,021	0,075		53,840	53,810		XRF (fusion)	
25	54,953	0,119	1,826		54,869	55,037		XRF (fusion)	
26	52,946	0,027	-1,290		52,965	52,927		XRF (fusion)	
27	53,720	0,382	-0,088		53,450	53,990		XRF (fusion)	
28	54,210		0,673		54,210			XRF (fusion)	
29	54,280		0,781		54,280			XRF (fusion)	
30	54,185		0,634		54,185			XRF (fusion)	
31	53,865		0,137		53,865			XRF (fusion)	
32	53,890		0,176		53,890			XRF (fusion)	
33	53,470	0,085	-0,476		53,530	53,410	ISO 17025	XRF (fusion)	
34	53,605	0,007	-0,267		53,610	53,600		XRF (fusion)	
37	52,720		-1,641		52,720			XRF (fusion)	
38	53,425	0,262	-0,546		53,610	53,240		XRF (fusion)	
39	54,200	0,141	0,657		54,300	54,100	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,004 % TM**
Measurand:	**Cr2O3**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,008 ± 0,003 % TM**	**Range of tolerance:**	**0,000 - 0,016 % TM (|z-score| <= 2,00)**
No. of laboratories:	**13**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,008 % TM (Empirical value)**	**Target s.d.:**	**0,004 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,003	0,002	-1,353		0,004	0,001		ICP-OES	ASTM D 6357
03b	0,004	0,000	-0,968		0,004	0,004		XRF (fusion)	ASTM D 4326
04									

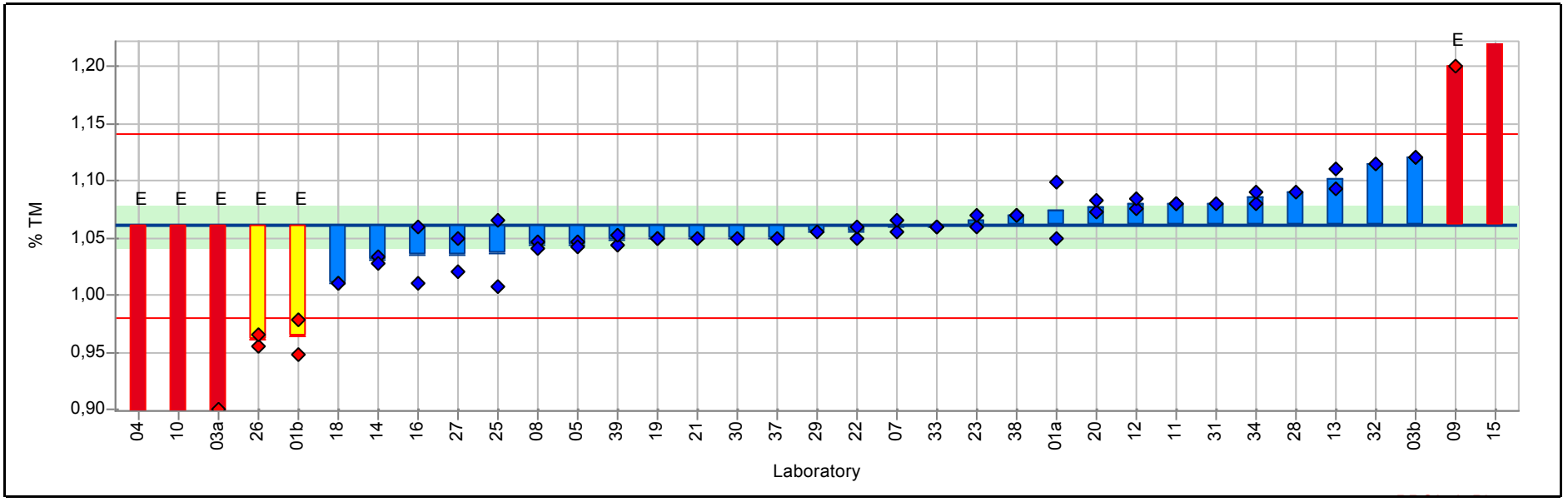
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,008	0,001	0,080		0,008	0,009	ISO 17025	XRF (fusion)	
07									
08	0,012	0,000	0,960		0,012	0,011		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,004	0,000	-0,968		0,004	0,004	ISO 17025	XRF (fusion)	
12									
13	0,007	0,000	-0,075		0,007	0,008		XRF (fusion)	
14	0,009	0,001	0,189		0,009	0,008		XRF (fusion)	
15									
16									
18	0,010		0,574		<0,010	0,010		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,010	0,000	0,510		0,010	0,010		XRF (fusion)	
21									
22									
23									
25					<0,009	<0,009		XRF (fusion)	
26	0,006	0,000	-0,454		0,006	0,006		XRF (fusion)	
27									
28									
29	0,013		1,255		0,013			XRF (fusion)	
30	0,010		0,574		0,010			XRF (fusion)	
31									
32									
33									
34									
37									
38									
39	0,007	0,001	-0,325		0,006	0,007	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,040 % TM**
Measurand:	**Fe2O3**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**1,060 ± 0,018 % TM**	**Range of tolerance:**	**0,980 - 1,141 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,060 % TM (Empirical value)**	**Target s.d.:**	**0,040 % TM (Empirical value)**

E



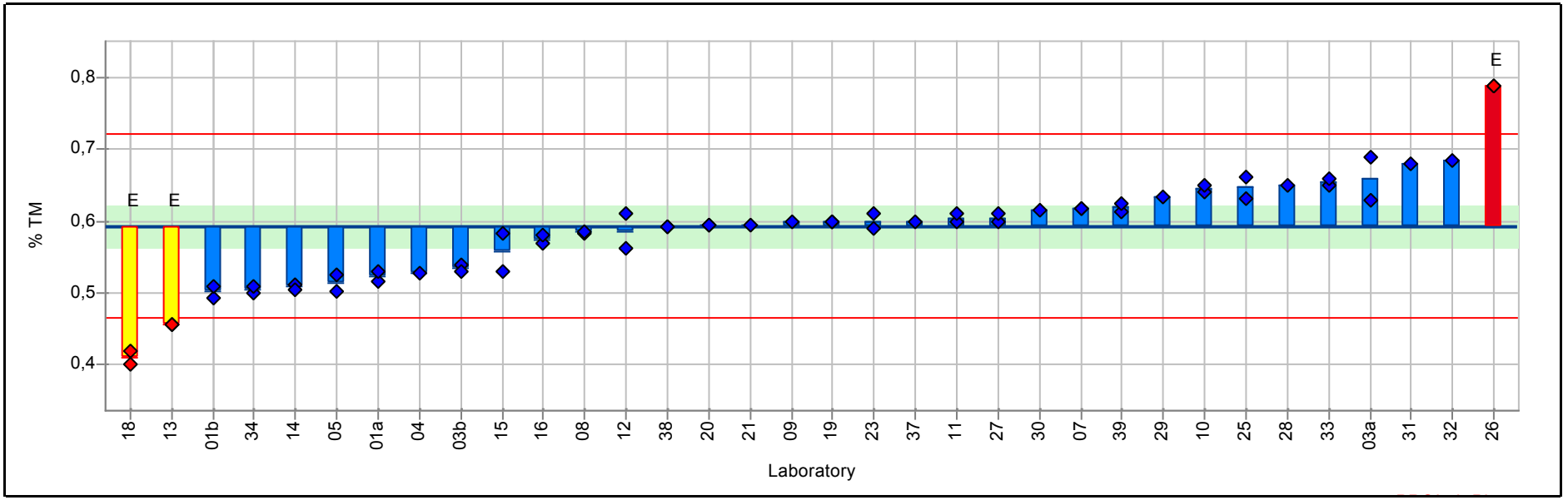
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	1,074	0,035	0,327		1,098	1,049		XRF (fusion)	Reconstitution Method
01b	0,964	0,022	-2,399	E	0,979	0,948		Standardless info only	fusion
03a	0,835	0,092	-5,583	E	0,900	0,770		ICP-OES	ASTM D 6357
03b	1,120	0,000	1,480		1,120	1,120		XRF (fusion)	ASTM D 4326
04	0,647		-10,232	E	0,647			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	1,044	0,002	-0,399		1,046	1,042	ISO 17025	XRF (fusion)	
07	1,060	0,007	-0,007		1,055	1,065	ISO 17025	XRF (fusion)	
08	1,044	0,004	-0,410		1,046	1,041		XRF (fusion)	
09	1,200		3,462	E	1,200			XRF (Pellet) info only	
10	0,820	0,000	-5,955	E	0,820	0,820	ISO 17025	XRF (fusion)	
11	1,080	0,000	0,488		1,080	1,080	ISO 17025	XRF (fusion)	
12	1,079	0,006	0,472		1,075	1,084		XRF (fusion)	
13	1,102	0,012	1,021		1,093	1,110		XRF (fusion)	
14	1,030	0,004	-0,751		1,033	1,027		XRF (fusion)	
15	1,278	0,006	5,404	E	1,274	1,283		XRF (fusion)	
16	1,035	0,035	-0,627		1,010	1,060	ISO 17025	XRF (fusion)	
18	1,010	0,000	-1,246		1,010	1,010		XRF (fusion)	
19	1,050	0,000	-0,255		1,050	1,050	ISO 17025	XRF (fusion)	
20	1,077	0,007	0,423		1,073	1,082		XRF (fusion)	
21	1,050		-0,255		1,050			XRF (fusion)	
22	1,055	0,007	-0,131		1,050	1,060		XRF (fusion)	
23	1,065	0,007	0,117		1,060	1,070		XRF (fusion)	
25	1,036	0,040	-0,590		1,008	1,065		XRF (fusion)	
26	0,961	0,007	-2,461	E	0,956	0,966		XRF (fusion)	
27	1,035	0,021	-0,627		1,020	1,050		XRF (fusion)	
28	1,090		0,736		1,090			XRF (fusion)	
29	1,055		-0,131		1,055			XRF (fusion)	
30	1,050		-0,255		1,050			XRF (fusion)	
31	1,080		0,488		1,080			XRF (fusion)	
32	1,115		1,356		1,115			XRF (fusion)	
33	1,060	0,000	-0,007		1,060	1,060	ISO 17025	XRF (fusion)	
34	1,085	0,007	0,612		1,080	1,090		XRF (fusion)	
37	1,050		-0,255		1,050			XRF (fusion)	
38	1,070	0,000	0,241		1,070	1,070		XRF (fusion)	
39	1,047	0,006	-0,317		1,043	1,052	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,064 % TM**
Measurand:	**K2O**	**Repeatability s.d.:**	**0,010 % TM**
Mean ± U(Mean):	**0,594 ± 0,028 % TM**	**Range of tolerance:**	**0,465 - 0,722 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,594 % TM (Empirical value)**	**Target s.d.:**	**0,064 % TM (Empirical value)**



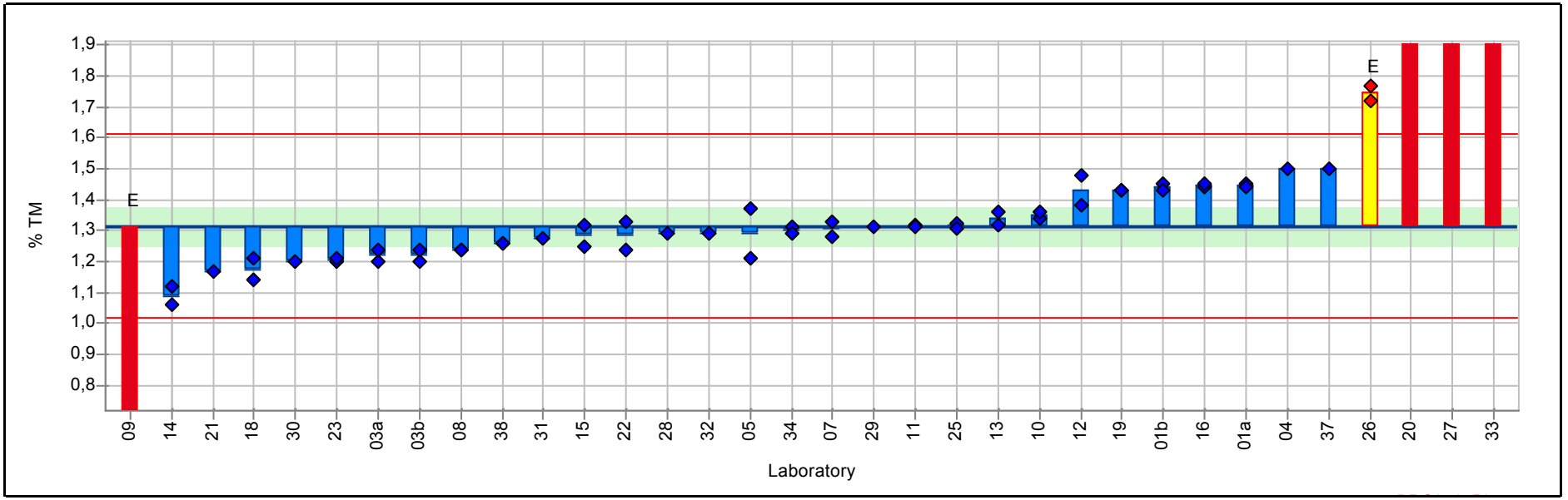
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,523	0,010	-1,100		0,516	0,530		XRF (fusion)	Reconstitution Method
01b	0,502	0,011	-1,426		0,494	0,510		Standardless info only	fusion
03a	0,660	0,042	1,029		0,630	0,690		ICP-OES	ASTM D 6357
03b	0,535	0,007	-0,913		0,540	0,530		XRF (fusion)	ASTM D 4326
04	0,528		-1,022		0,528			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,514	0,016	-1,236		0,525	0,503	ISO 17025	XRF (fusion)	
07	0,617	0,000	0,361		0,617	0,617	ISO 17025	XRF (fusion)	
08	0,585	0,002	-0,141		0,583	0,586		XRF (fusion)	
09	0,600		0,097		0,600			XRF (Pellet) info only	
10	0,645	0,007	0,796		0,640	0,650	ISO 17025	XRF (fusion)	
11	0,605	0,007	0,175		0,600	0,610	ISO 17025	XRF (fusion)	
12	0,587	0,035	-0,113		0,611	0,562		XRF (fusion)	
13	0,457	0,001	-2,132	E	0,457	0,456		XRF (fusion)	
14	0,508	0,004	-1,325		0,511	0,506		XRF (fusion)	
15	0,558	0,037	-0,560		0,531	0,584		XRF (fusion)	
16	0,575	0,007	-0,292		0,570	0,580	ISO 17025	XRF (fusion)	
18	0,410	0,014	-2,855	E	0,400	0,420		XRF (fusion)	
19	0,600	0,000	0,097		0,600	0,600	ISO 17025	XRF (fusion)	
20	0,595	0,000	0,015		0,595	0,595		XRF (fusion)	
21	0,595		0,019		0,595			XRF (fusion)	
22									
23	0,600	0,014	0,097		0,610	0,590		XRF (fusion)	
25	0,647	0,021	0,827		0,662	0,632		ICP-OES	
26	0,790	0,001	3,041	E	0,789	0,790		XRF (fusion)	
27	0,605	0,007	0,175		0,600	0,610		XRF (fusion)	
28	0,650		0,874		0,650			XRF (fusion)	
29	0,635		0,641		0,635			XRF (fusion)	
30	0,615		0,330		0,615			XRF (fusion)	
31	0,680		1,340		0,680			XRF (fusion)	
32	0,685		1,418		0,685			XRF (fusion)	
33	0,655	0,007	0,951		0,650	0,660	ISO 17025	XRF (fusion)	
34	0,505	0,007	-1,379		0,500	0,510		XRF (fusion)	
37	0,600		0,097		0,600			XRF (fusion)	
38	0,592	0,000	-0,027		0,592	0,592		XRF (fusion)	
39	0,620	0,008	0,408		0,614	0,626	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,149 % TM**
Measurand:	**LOI (1h @ 950°C) observed**	**Repeatability s.d.:**	**0,034 % TM**
Mean ± U(Mean):	**1,315 ± 0,064 % TM**	**Range of tolerance:**	**1,016 - 1,614 % TM (|z-score| <= 2,00)**
No. of laboratories:	**34**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,315 % TM (Empirical value)**	**Target s.d.:**	**0,149 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	1,446	0,010	0,874		1,453	1,439		1h@950°C	Gravimetry
01b	1,441	0,017	0,841		1,453	1,429		1h@950°C	Gravimetry
03a	1,220	0,028	-0,638		1,200	1,240		1h@950°C	
03b	1,220	0,028	-0,638		1,200	1,240		1h@950°C	
04	1,500		1,236		1,500			1h@950°C	

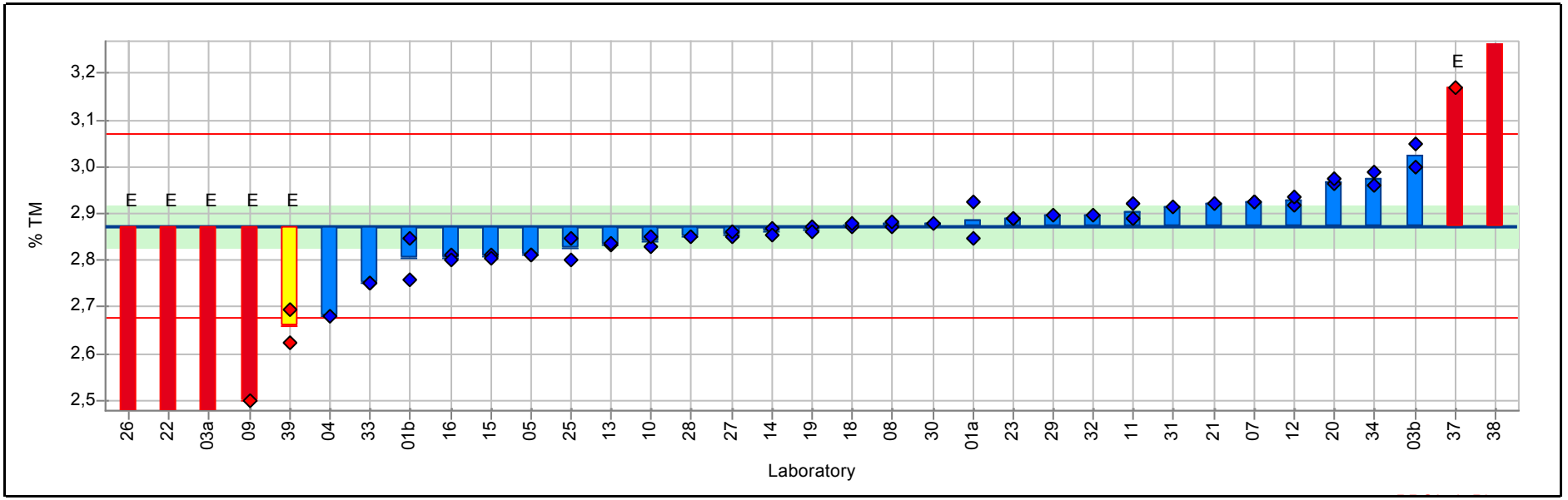
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	1,292	0,114	-0,158		1,211	1,372	ISO 17025	DIN EN 15169	
07	1,305	0,035	-0,069		1,280	1,330	ISO 17025	1h@950°C	
08	1,235	0,000	-0,538		1,235	1,235		1h@950°C	
09	0,300		-6,794	E	0,300		ISO 17025	DIN 51719	
10	1,350	0,014	0,232		1,340	1,360	ISO 17025	1h@950°C	Thermogravimetric analyzer
11	1,315	0,007	-0,002		1,320	1,310	ISO 17025	Wet chemistry EN196-2	
12	1,430	0,071	0,767		1,380	1,480		1h@950°C	
13	1,339	0,028	0,158		1,319	1,359		1h@950°C	gravimetric
14	1,090	0,042	-1,508		1,060	1,120		1h@950°C	
15	1,285	0,049	-0,203		1,250	1,320		1h@950°C	
16	1,445	0,007	0,868		1,440	1,450	ISO 17025	Wet chemistry EN196-2	
18	1,175	0,049	-0,939		1,140	1,210		1h@950°C	
19	1,430	0,000	0,767		1,430	1,430	ISO 17025	1h@950°C	TGA - not corrected -
20	2,540	0,014	8,195	E	2,530	2,550		Wet chemistry EN196-2	
21	1,170		-0,972		1,170			1h@950°C	
22	1,285	0,064	-0,203		1,330	1,240		1h@950°C	
23	1,205	0,007	-0,738		1,200	1,210		1h@950°C	
25	1,317	0,011	0,008		1,324	1,309		1h@950°C	
26	1,745	0,035	2,875	E	1,720	1,770		1h@950°C	
27	2,690	0,057	9,199	E	2,650	2,730		1h@950°C	
28	1,290		-0,169		1,290			1h@950°C	
29	1,310		-0,036		1,310			1h@950°C	
30	1,200		-0,772		1,200			1h@950°C	
31	1,275		-0,270		1,275			1h@950°C	
32	1,290		-0,169		1,290			1h@950°C	
33	2,722	0,017	9,413	E	2,710	2,734		1h@950°C	
34	1,300	0,014	-0,103		1,310	1,290		1h@950°C	
37	1,500		1,236		1,500			1h@950°C	
38	1,260	0,000	-0,370		1,260	1,260		1h@950°C	
39								1h@950°C	

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,099 % TM**
Measurand:	**MgO**	**Repeatability s.d.:**	**0,011 % TM**
Mean ± U(Mean):	**2,874 ± 0,043 % TM**	**Range of tolerance:**	**2,676 - 3,071 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,874 % TM (Empirical value)**	**Target s.d.:**	**0,099 % TM (Empirical value)**

E



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	2,886	0,055	0,126		2,847	2,925		XRF (fusion)	Reconstitution Method
01b	2,803	0,063	-0,709		2,759	2,848		Standardless info only	fusion
03a	2,320	0,071	-5,606	E	2,370	2,270		ICP-OES	ASTM D 6357
03b	3,025	0,035	1,534		3,000	3,050		XRF (fusion)	ASTM D 4326
04	2,680		-1,960		2,680			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	2,810	0,000	-0,639		2,810	2,811	ISO 17025	XRF (fusion)	
07	2,926	0,000	0,531		2,926	2,926	ISO 17025	XRF (fusion)	
08	2,877	0,008	0,037		2,872	2,883		XRF (fusion)	
09	2,500		-3,783	E	2,500			XRF (Pellet) info only	
10	2,840	0,014	-0,340		2,830	2,850	ISO 17025	XRF (fusion)	
11	2,905	0,021	0,319		2,920	2,890	ISO 17025	XRF (fusion)	
12	2,928	0,012	0,547		2,919	2,936		XRF (fusion)	
13	2,835	0,001	-0,395		2,834	2,835		XRF (fusion)	
14	2,861	0,009	-0,122		2,868	2,855		XRF (fusion)	
15	2,807	0,006	-0,669		2,811	2,803		XRF (fusion)	
16	2,805	0,007	-0,694		2,810	2,800	ISO 17025	XRF (fusion)	
18	2,875	0,007	0,015		2,870	2,880		XRF (fusion)	
19	2,865	0,007	-0,086		2,870	2,860	ISO 17025	XRF (fusion)	
20	2,969	0,007	0,966		2,964	2,974		XRF (fusion)	
21	2,920		0,471		2,920			XRF (fusion)	
22	2,135	0,007	-7,480	E	2,130	2,140		XRF (fusion)	
23	2,890	0,000	0,167		2,890	2,890		XRF (fusion)	
25	2,824	0,034	-0,502		2,800	2,848		XRF (fusion)	
26	2,104	0,068	-7,794	E	2,152	2,056		XRF (fusion)	
27	2,855	0,007	-0,188		2,850	2,860		XRF (fusion)	
28	2,850		-0,238		2,850			XRF (fusion)	
29	2,895		0,217		2,895			XRF (fusion)	
30	2,880		0,066		2,880			XRF (fusion)	
31	2,915		0,420		2,915			XRF (fusion)	
32	2,895		0,217		2,895			XRF (fusion)	
33	2,750	0,000	-1,251		2,750	2,750	ISO 17025	XRF (fusion)	
34	2,975	0,021	1,028		2,960	2,990		XRF (fusion)	
37	3,170		3,003	E	3,170			XRF (fusion)	
38	3,461	0,007	5,950	E	3,466	3,456		XRF (fusion)	
39	2,658	0,049	-2,183	E	2,623	2,693	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,039 % TM**
Measurand:	**Mn2O3**	**Repeatability s.d.:**	**0,002 % TM**
Mean ± U(Mean):	**0,200 ± 0,021 % TM**	**Range of tolerance:**	**0,123 - 0,277 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,200 % TM (Empirical value)**	**Target s.d.:**	**0,039 % TM (Empirical value)**

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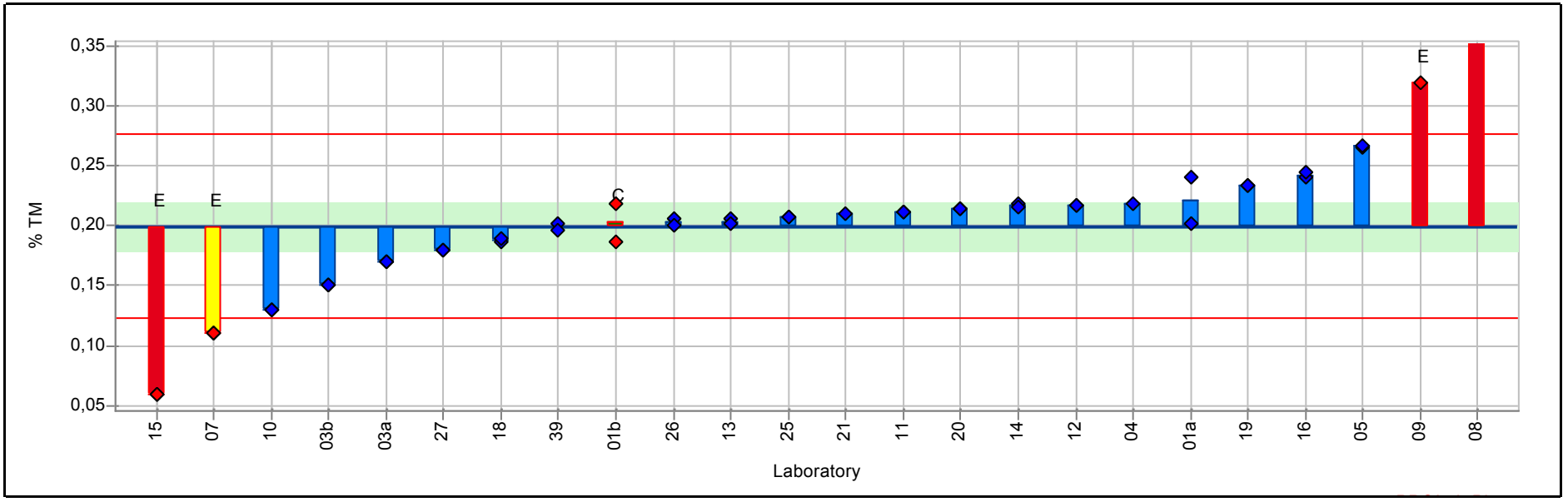


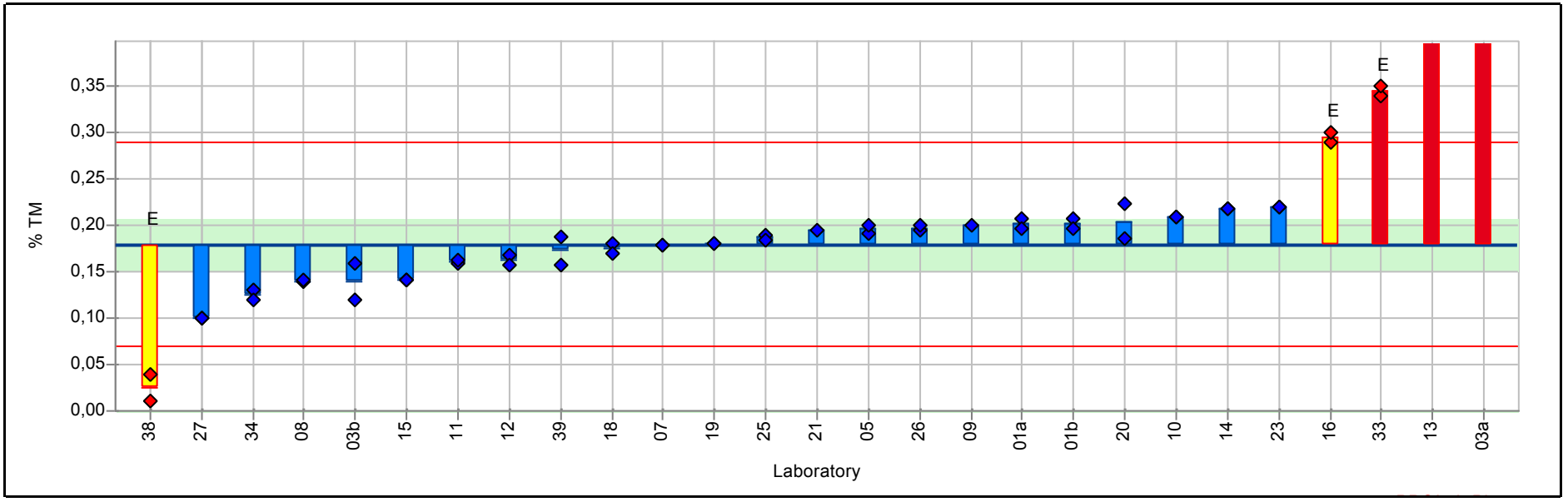
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,222	0,028	0,564		0,202	0,241		XRF (fusion)	Reconstitution Method
01b	0,203	0,023	0,085	C	0,187	0,219		Standardless info only	fusion
03a	0,170	0,000	-0,770		0,170	0,170		ICP-OES	ASTM D 6357
03b	0,150	0,000	-1,289		0,150	0,150		XRF (fusion)	ASTM D 4326
04	0,218		0,474		0,218			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,266	0,001	1,730		0,266	0,267	ISO 17025	XRF (fusion)	
07	0,110	0,000	-2,325	E	0,110	0,110		XRF (fusion)	
08	0,420	0,001	5,708	E	0,421	0,419		XRF (fusion)	
09	0,320		3,117	E	0,320			XRF (Pellet) info only	
10	0,130	0,000	-1,807		0,130	0,130	ISO 17025	XRF (fusion)	
11	0,211	0,001	0,305		0,211	0,212	ISO 17025	XRF (fusion)	
12	0,217	0,000	0,444		0,217	0,217		XRF (fusion)	
13	0,204	0,002	0,107		0,205	0,202		XRF (fusion)	
14	0,216	0,002	0,435		0,218	0,215		XRF (fusion)	
15	0,059	0,000	-3,641	E	0,059	0,059		XRF (fusion)	
16	0,242	0,004	1,109		0,240	0,245	ISO 17025	XRF (fusion)	
18	0,188	0,001	-0,304		0,187	0,189		XRF (fusion)	
19	0,234	0,000	0,880		0,234	0,234		XRF (fusion)	
20	0,214	0,000	0,383		0,214	0,214		XRF (fusion)	
21	0,210		0,266		0,210			XRF (fusion)	
22									
23									
25	0,207	0,000	0,188		0,207	0,207		XRF (fusion)	
26	0,204	0,004	0,098		0,206	0,201		XRF (fusion)	
27	0,180	0,000	-0,511		0,180	0,180		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,199	0,004	-0,019		0,202	0,196	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,055 % TM**
Measurand:	**Na2O**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**0,179 ± 0,027 % TM**	**Range of tolerance:**	**0,070 - 0,289 % TM (|z-score| <= 2,00)**
No. of laboratories:	**25**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,179 % TM (Empirical value)**	**Target s.d.:**	**0,055 % TM (Empirical value)**



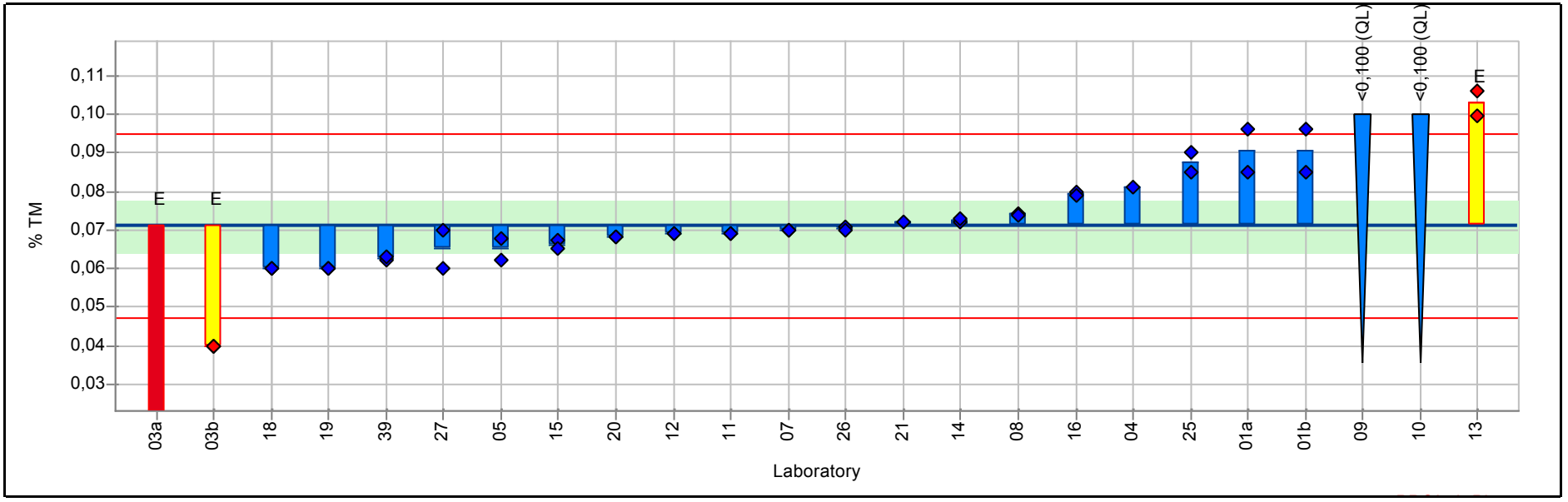
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,202	0,007	0,411		0,207	0,197		XRF (fusion)	
01b	0,202	0,007	0,411		0,207	0,197		Standardless info only	fusion
03a	0,540	0,000	6,565	E	0,540	0,540		ICP-OES	ASTM D 6357
03b	0,140	0,028	-0,718		0,120	0,160		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,196	0,007	0,308		0,192	0,201	ISO 17025	XRF (fusion)	
07	0,179	0,000	-0,008		0,179	0,179	ISO 17025	ICP-OES	
08	0,140	0,002	-0,719		0,139	0,141		XRF (fusion)	
09	0,200		0,374		0,200			XRF (Pellet) info only	
10	0,210	0,000	0,556		0,210	0,210		ICP-OES	
11	0,161	0,002	-0,345		0,159	0,162	ISO 17025	XRF (fusion)	
12	0,163	0,007	-0,306		0,168	0,158		XRF (fusion)	
13	0,487	0,008	5,609	E	0,482	0,493		XRF (fusion)	
14	0,218	0,000	0,702		0,218	0,218		XRF (fusion)	
15	0,141	0,000	-0,697		0,141	0,141		XRF (fusion)	
16	0,295	0,008	2,113	E	0,290	0,301	ISO 17025	XRF (fusion)	
18	0,175	0,007	-0,081		0,180	0,170		XRF (fusion)	
19	0,180	0,000	0,010		0,180	0,180		XRF (fusion)	
20	0,205	0,028	0,461		0,224	0,185		XRF (fusion)	
21	0,195		0,283		0,195			XRF (fusion)	
22									
23	0,220	0,000	0,738		0,220	0,220		XRF (fusion)	
25	0,188	0,004	0,147		0,190	0,185		ICP-OES	
26	0,198	0,004	0,329		0,195	0,200		XRF (fusion)	
27	0,100	0,000	-1,447		0,100	0,100		XRF (fusion)	
28									
29									
30									
31									
32									
33	0,345	0,007	3,015	E	0,340	0,350	ISO 17025	XRF (fusion)	
34	0,125	0,007	-0,991		0,130	0,120		XRF (fusion)	
37									
38	0,024	0,021	-2,823	E	0,039	0,010		XRF (fusion)	
39	0,173	0,021	-0,117		0,158	0,188	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,012 % TM**
Measurand:	**P2O5**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,071 ± 0,007 % TM**	**Range of tolerance:**	**0,047 - 0,095 % TM (|z-score| <= 2,00)**
No. of laboratories:	**21**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,071 % TM (Empirical value)**	**Target s.d.:**	**0,012 % TM (Empirical value)**



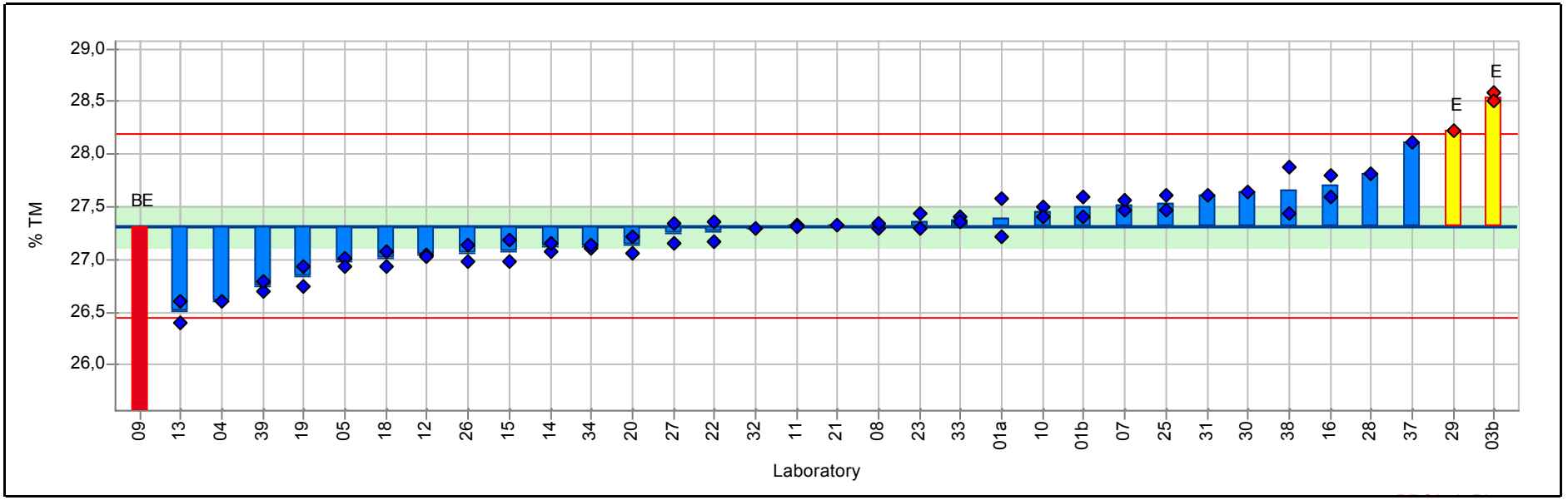
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,090	0,008	1,625		0,096	0,085		XRF (fusion)	
01b	0,090	0,008	1,625		0,096	0,085		Standardless info only	fusion
03a	0,020	0,000	-4,251	E	0,020	0,020		ICP-OES	ASTM D 6357
03b	0,040	0,000	-2,584	E	0,040	0,040		XRF (fusion)	ASTM D 4326
04	0,081		0,833		0,081			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,065	0,004	-0,500		0,068	0,062	ISO 17025	XRF (fusion)	
07	0,070	0,000	-0,084		0,070	0,070	ISO 17025	XRF (fusion)	
08	0,074	0,000	0,264		0,074	0,074		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,069	0,000	-0,167		0,069	0,069	ISO 17025	XRF (fusion)	
12	0,069	0,000	-0,167		0,069	0,069		XRF (fusion)	
13	0,103	0,004	2,659	E	0,106	0,100		XRF (fusion)	
14	0,072	0,001	0,125		0,072	0,073		XRF (fusion)	
15	0,066	0,001	-0,406		0,067	0,065		XRF (fusion)	
16	0,080	0,001	0,708		0,080	0,079	ISO 17025	XRF (fusion)	
18	0,060	0,000	-0,917		0,060	0,060		XRF (fusion)	
19	0,060	0,000	-0,917		0,060	0,060		XRF (fusion)	
20	0,068	0,000	-0,230		0,068	0,068		XRF (fusion)	
21	0,072		0,083		0,072			XRF (fusion)	
22									
23									
25	0,087	0,004	1,375		0,085	0,090		XRF (fusion)	
26	0,071	0,001	-0,042		0,071	0,070		XRF (fusion)	
27	0,065	0,007	-0,500		0,060	0,070		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,063	0,001	-0,709		0,062	0,063	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,438 % TM**
Measurand:	**SiO2**	**Repeatability s.d.:**	**0,137 % TM**
Mean ± U(Mean):	**27,319 ± 0,194 % TM**	**Range of tolerance:**	**26,443 - 28,196 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**27,319 % TM (Empirical value)**	**Target s.d.:**	**0,438 % TM (Empirical value)**



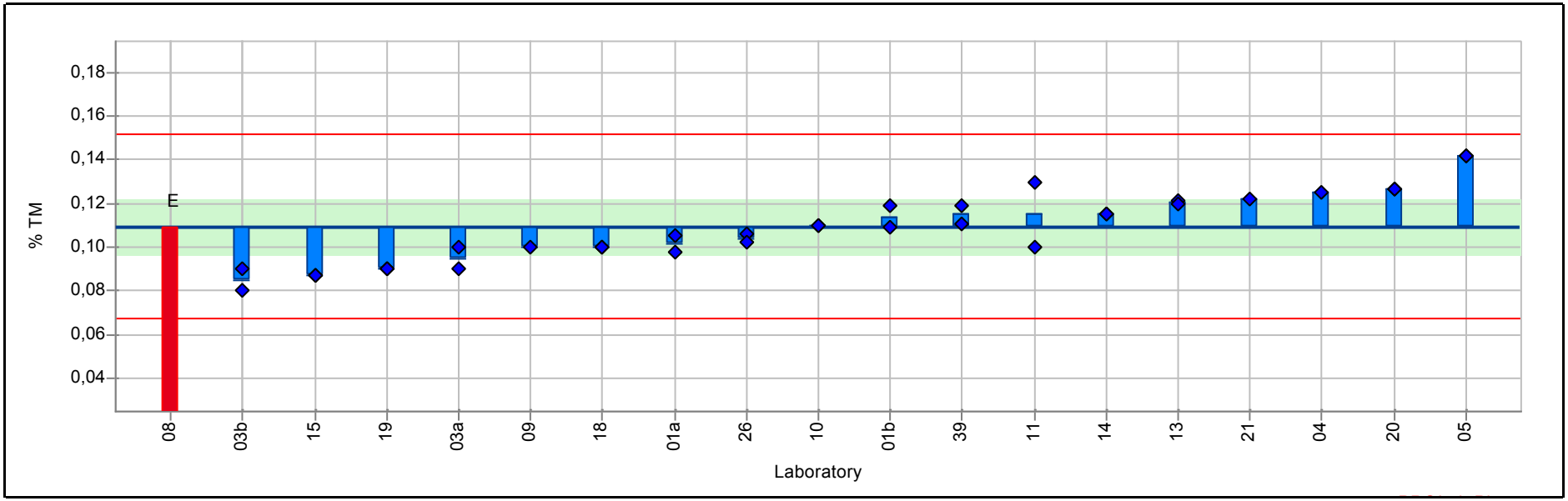
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	27,396	0,254	0,176		27,576	27,217		XRF (fusion)	Reconstitution Method
01b	27,496	0,136	0,404		27,593	27,400		Standardless info only	fusion
03a									
03b	28,540	0,057	2,785	E	28,580	28,500		XRF (fusion)	ASTM D 4326
04	26,600		-1,642		26,600			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	26,974	0,049	-0,788		27,009	26,939	ISO 17025	XRF (fusion)	
07	27,511	0,071	0,437		27,461	27,561	ISO 17025	XRF (fusion)	
08	27,321	0,041	0,004		27,292	27,350		XRF (fusion)	
09	23,100		-9,628	BE	23,100			XRF (Pellet) info only	
10	27,450	0,071	0,298		27,500	27,400	ISO 17025	XRF (fusion)	
11	27,320	0,014	0,001		27,330	27,310	ISO 17025	XRF (fusion)	
12	27,038	0,019	-0,643		27,051	27,024		XRF (fusion)	
13	26,505	0,148	-1,859		26,610	26,400		XRF (fusion)	
14	27,117	0,049	-0,463		27,082	27,151		XRF (fusion)	
15	27,082	0,146	-0,541		27,186	26,979		XRF (fusion)	
16	27,700	0,141	0,868		27,800	27,600	ISO 17025	XRF (fusion)	
18	27,010	0,099	-0,706		26,940	27,080		XRF (fusion)	
19	26,835	0,134	-1,106		26,930	26,740	ISO 17025	XRF (fusion)	
20	27,139	0,117	-0,412		27,056	27,222		XRF (fusion)	
21	27,320		0,001		27,320			XRF (fusion)	
22	27,265	0,134	-0,124		27,170	27,360		XRF (fusion)	
23	27,365	0,092	0,104		27,430	27,300		XRF (fusion)	
25	27,539	0,093	0,501		27,473	27,605		XRF (fusion)	
26	27,056	0,107	-0,601		26,980	27,132		XRF (fusion)	
27	27,250	0,141	-0,159		27,150	27,350		XRF (fusion)	
28	27,820		1,142		27,820			XRF (fusion)	
29	28,220		2,055	E	28,220			XRF (fusion)	
30	27,640		0,731		27,640			XRF (fusion)	
31	27,605		0,652		27,605			XRF (fusion)	
32	27,300		-0,044		27,300			XRF (fusion)	
33	27,380	0,028	0,138		27,400	27,360	ISO 17025	XRF (fusion)	
34	27,125	0,021	-0,444		27,110	27,140		XRF (fusion)	
37	28,110		1,804		28,110			XRF (fusion)	
38	27,660	0,311	0,777		27,880	27,440		XRF (fusion)	
39	26,750	0,071	-1,299		26,700	26,800	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,021 % TM**
Measurand:	**SrO**	**Repeatability s.d.:**	**0,004 % TM**
Mean ± U(Mean):	**0,110 ± 0,013 % TM**	**Range of tolerance:**	**0,067 - 0,152 % TM (|z-score| <= 2,00)**
No. of laboratories:	**17**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,110 % TM (Empirical value)**	**Target s.d.:**	**0,021 % TM (Empirical value)**



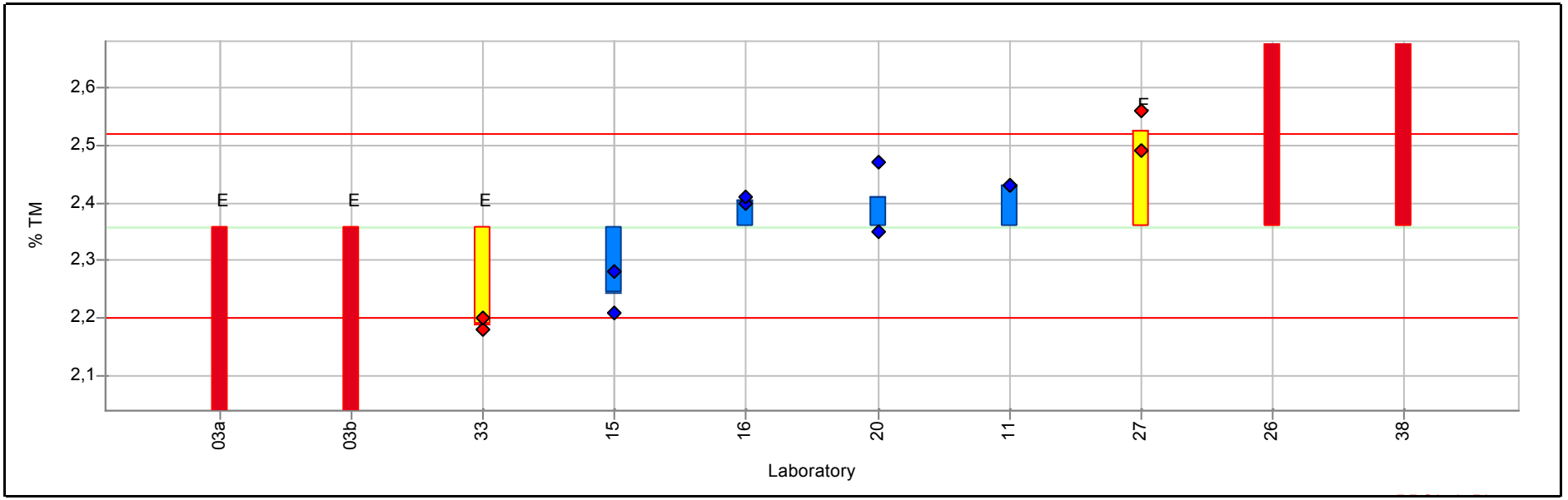
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,102	0,005	-0,380		0,105	0,098		XRF (fusion)	Reconstitution Method
01b	0,114	0,007	0,210		0,119	0,109		Standardless info only	fusion
03a	0,095	0,007	-0,687		0,100	0,090		ICP-OES	ASTM D 6357
03b	0,085	0,007	-1,159		0,090	0,080		XRF (fusion)	ASTM D 4326
04	0,125		0,730		0,125			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,142	0,000	1,510		0,141	0,142	ISO 17025	XRF (fusion)	
07									
08	0,003	0,000	-5,050	E	0,003	0,002		XRF (fusion)	
09	0,100		-0,451		0,100			XRF (Pellet) info only	
10	0,110	0,000	0,021		0,110	0,110		ICP-OES	
11	0,115	0,021	0,258		0,100	0,130	ISO 17025	XRF (fusion)	
12									
13	0,120	0,001	0,508		0,121	0,120		XRF (fusion)	
14	0,115	0,000	0,258		0,115	0,115		XRF (fusion)	
15	0,087	0,000	-1,071		0,087	0,087		XRF (fusion)	
16									
18	0,100	0,000	-0,451		0,100	0,100		XRF (fusion)	
19	0,090	0,000	-0,923		0,090	0,090		XRF (fusion)	
20	0,127	0,000	0,812		0,127	0,127		XRF (fusion)	
21	0,122		0,588		0,122			XRF (fusion)	
22									
23									
25									
26	0,104	0,003	-0,262		0,106	0,102		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,115	0,006	0,258		0,111	0,119	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,479 % TM**
Measurand:	**Sulfate expressed as SO3**	**Repeatability s.d.:**	**0,014 % TM**
Mean ± U(Mean):	**2,679 ± 0,399 % TM**	**Range of tolerance:**	**2,200 - 2,520 % TM (|z-score| <= 2,00)**
No. of laboratories:	**9**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,360 % TM (Reference value)**	**Target s.d.:**	**0,080 % TM (Reference value)**



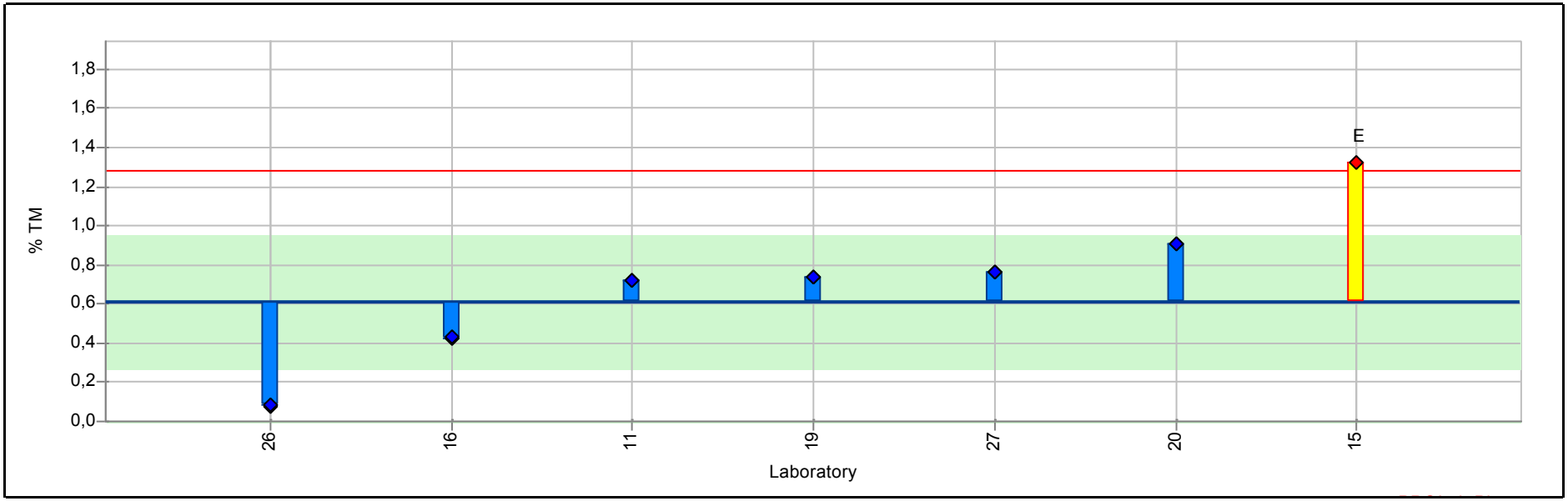
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,034	0,002	-29,081	E	0,035	0,032		Wet chemistry EN196-2	
03b	0,034	0,002	-29,081	E	0,035	0,032		Wet chemistry EN196-2	
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	2,430	0,000	0,875		2,430	2,430		Wet chemistry EN196-2	
12									
13									
14									
15	2,245	0,049	-1,437		2,210	2,280		XRF (Pellet) info only	WDXRF (pp) S-Kbs-Line
16	2,405	0,007	0,563		2,400	2,410	ISO 17025	Wet chemistry EN196-2	
18									
19									
20	2,410	0,085	0,623		2,470	2,350		Wet chemistry EN196-2	
21									
22									
23									
25									
26	3,821	0,002	18,269	E	3,823	3,820		Wet chemistry EN196-2	
27	2,525	0,049	2,063	E	2,490	2,560		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33	2,190	0,014	-2,125	E	2,180	2,200	ISO 17025	Wet chemistry EN196-2	
34									
37									
38	4,025	0,021	20,813	E	4,010	4,040		Wet chemistry EN196-2	
39									

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,333 % TM**
Measurand:	**Sulfide expressed as S**	**Repeatability s.d.:**	**0,002 % TM**
Mean ± U(Mean):	**0,611 ± 0,340 % TM**	**Range of tolerance:**	**-0,055 - 1,276 % TM (|z-score| <= 2,00)**
No. of laboratories:	**6**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,611 % TM (Empirical value)**	**Target s.d.:**	**0,333 % TM (Empirical value)**



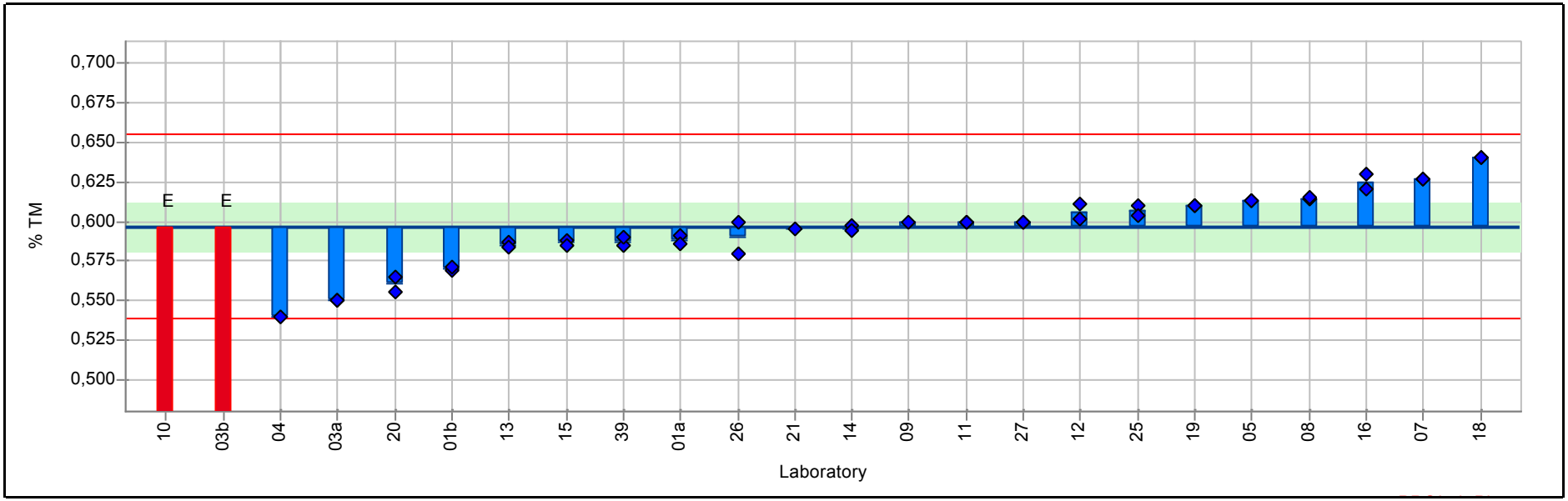
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a									
03b									
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	0,720	0,000	0,329		0,720	0,720		Wet chemistry EN196-2	
12									
13									
14									
15	1,322		2,137	E	1,322			XRF (Pellet) info only	WDXRF (pp) S-Ka (Kbs-
16	0,425	0,007	-0,558		0,420	0,430	ISO 17025	Wet chemistry EN196-2	
18									
19	0,739	0,000	0,386		0,739	0,739	ISO 17025	Wet chemistry EN196-2	
20	0,908	0,002	0,895		0,910	0,907		Wet chemistry EN196-2	
21									
22									
23									
25									
26	0,082	0,002	-1,590		0,080	0,083		Wet chemistry EN196-2	
27	0,760	0,000	0,449		0,760	0,760		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39									

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,029 % TM**
Measurand:	**TiO2**	**Repeatability s.d.:**	**0,003 % TM**
Mean ± U(Mean):	**0,597 ± 0,016 % TM**	**Range of tolerance:**	**0,539 - 0,655 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,597 % TM (Empirical value)**	**Target s.d.:**	**0,029 % TM (Empirical value)**



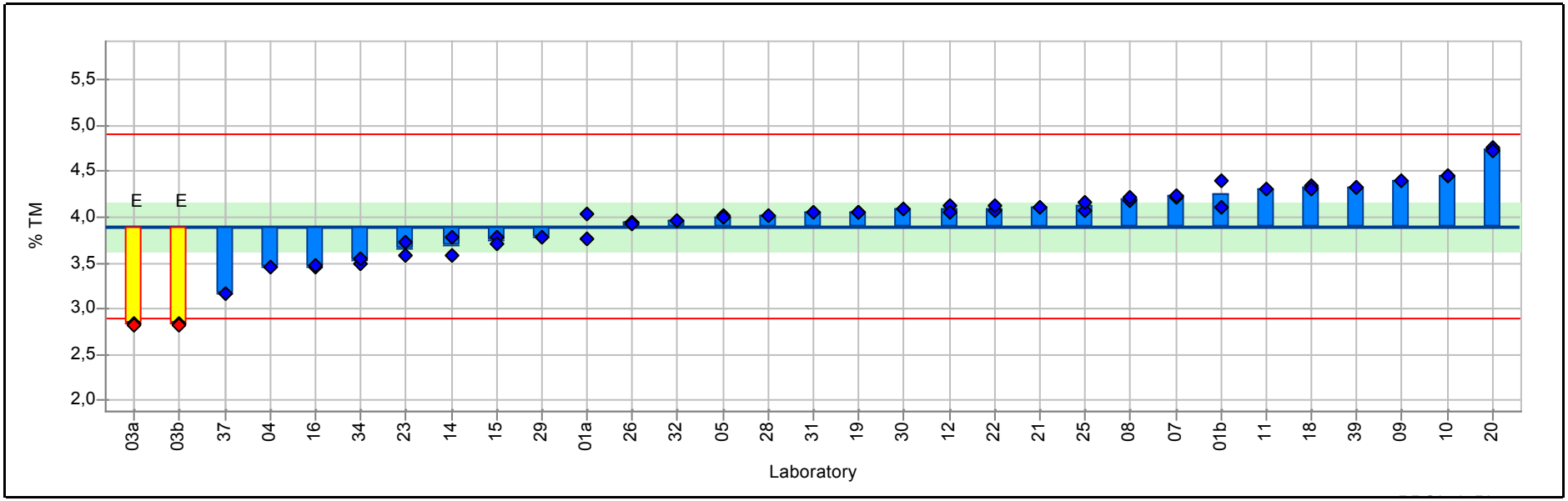
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,589	0,004	-0,290		0,591	0,586		XRF (fusion)	Reconstitution Method
01b	0,570	0,001	-0,925		0,569	0,571		Standardless info only	fusion
03a	0,550	0,000	-1,612		0,550	0,550		ICP-OES	ASTM D 6357
03b	0,460	0,000	-4,702	E	0,460	0,460		XRF (fusion)	ASTM D 4326
04	0,540		-1,955		0,540			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,613	0,000	0,552		0,613	0,613	ISO 17025	XRF (fusion)	
07	0,627	0,000	1,032		0,627	0,627	ISO 17025	XRF (fusion)	
08	0,615	0,001	0,609		0,614	0,616		XRF (fusion)	
09	0,600		0,105		0,600			XRF (Pellet) info only	
10	0,430	0,000	-5,732	E	0,430	0,430	ISO 17025	XRF (fusion)	
11	0,600	0,000	0,105		0,600	0,600	ISO 17025	XRF (fusion)	
12	0,606	0,007	0,318		0,602	0,611		XRF (fusion)	
13	0,585	0,002	-0,396		0,587	0,584		XRF (fusion)	
14	0,595	0,002	-0,049		0,597	0,594		XRF (fusion)	
15	0,587	0,002	-0,346		0,589	0,585		XRF (fusion)	
16	0,625	0,007	0,963		0,620	0,630		XRF (fusion)	
18	0,640	0,000	1,478		0,640	0,640		XRF (fusion)	
19	0,610	0,000	0,448		0,610	0,610		XRF (fusion)	
20	0,561	0,007	-1,247		0,566	0,556		XRF (fusion)	
21	0,595		-0,067		0,595			XRF (fusion)	
22									
23									
25	0,607	0,004	0,345		0,610	0,604		XRF (fusion)	
26	0,590	0,014	-0,238		0,580	0,600		XRF (fusion)	
27	0,600	0,000	0,105		0,600	0,600		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,587	0,004	-0,324		0,585	0,590	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,504 % TM**
Measurand:	**Total S expressed as SO3**	**Repeatability s.d.:**	**0,025 % TM**
Mean ± U(Mean):	**3,899 ± 0,263 % TM**	**Range of tolerance:**	**2,891 - 4,908 % TM (|z-score| <= 2,00)**
No. of laboratories:	**23**	**Method:**	**DIN 38402 A45**
Assigned value:	**3,899 % TM (Empirical value)**	**Target s.d.:**	**0,504 % TM (Empirical value)**



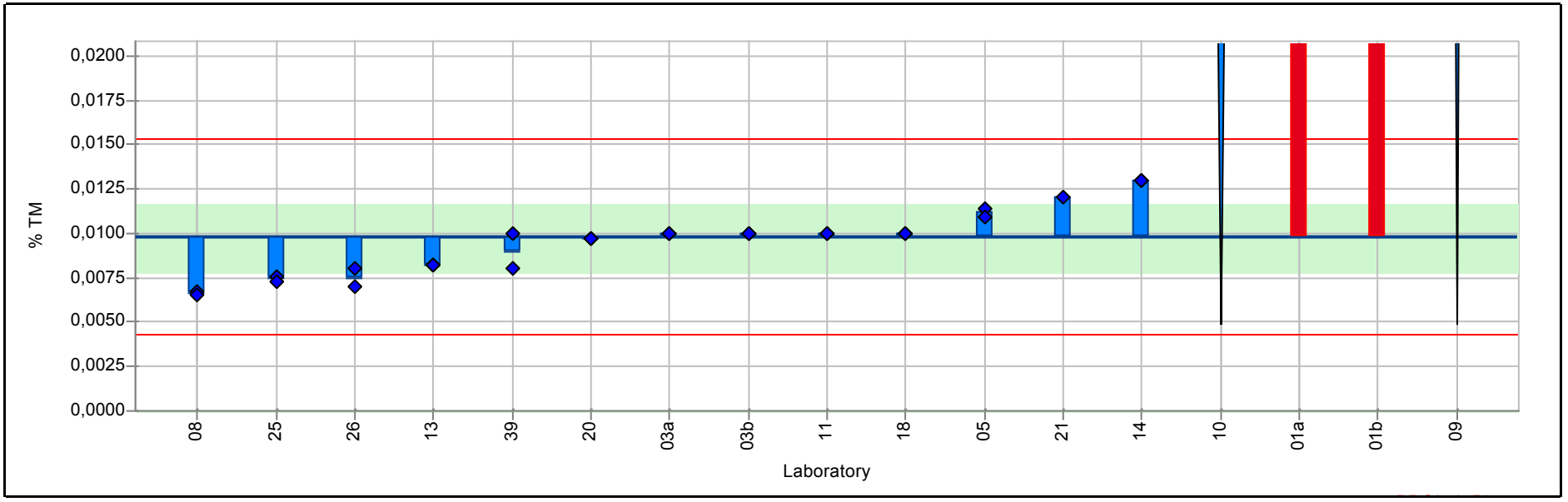
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	3,899	0,195	0,000		4,037	3,761		XRF (fusion)	Reconstitution Method
01b	4,258	0,209	0,711		4,405	4,110		Standardless info only	fusion
03a	2,840	0,014	-2,101	E	2,850	2,830		combustion	ASTM D 5016
03b	2,840	0,014	-2,101	E	2,850	2,830		combustion	
04	3,460		-0,871		3,460			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	4,006	0,002	0,213		4,008	4,005	ISO 17025	XRF (fusion)	
07	4,230	0,014	0,656		4,220	4,240	ISO 17025	XRF (fusion)	
08	4,199	0,027	0,594		4,180	4,218		XRF (fusion)	
09	4,400		0,993		4,400			XRF (Pellet) info only	
10	4,450	0,000	1,092		4,450	4,450	ISO 17025	combustion	
11	4,300		0,795		4,300		ISO 17025	combustion	
12	4,091	0,059	0,380		4,132	4,049		XRF (fusion)	
13									
14	3,684	0,145	-0,428		3,786	3,581		XRF (fusion)	
15	3,744	0,049	-0,307		3,779	3,709		XRF (fusion)	
16	3,465	0,007	-0,861		3,460	3,470	ISO 17025	Wet chemistry EN196-2	
18	4,325	0,021	0,844		4,340	4,310		XRF (fusion)	
19	4,055	0,007	0,309		4,050	4,060		XRF (fusion)	
20	4,740	0,014	1,668		4,750	4,730		combustion	With LECO instrument - S
21	4,100		0,398		4,100			XRF (fusion)	
22	4,095	0,035	0,388		4,070	4,120		XRF (Pellet) info only	
23	3,650	0,099	-0,494		3,720	3,580		XRF (fusion)	
25	4,123	0,064	0,444		4,078	4,168		combustion	
26	3,940	0,014	0,081		3,950	3,930		XRF (fusion)	
27									
28	4,020		0,240		4,020			XRF (Pellet) info only	
29	3,785		-0,227		3,785			XRF (Pellet) info only	
30	4,085		0,368		4,085			XRF (Pellet) info only	
31	4,045		0,289		4,045			XRF (Pellet) info only	
32	3,960		0,121		3,960			XRF (Pellet) info only	
33									
34	3,525	0,035	-0,742		3,500	3,550		XRF (fusion)	
37	3,170		-1,446		3,170			XRF (fusion)	
38									
39	4,325	0,007	0,844		4,320	4,330	ISO 17025	combustion	Leco DIN 51085

RV113

Sample:	**FLX-CRM 115**	**Reproducibility s.d.:**	**0,003 % TM**
Measurand:	**ZnO**	**Repeatability s.d.:**	**0,000 % TM**
Mean ± U(Mean):	**0,010 ± 0,002 % TM**	**Range of tolerance:**	**0,004 - 0,015 % TM (|z-score| <= 2,00)**
No. of laboratories:	**13**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,010 % TM (Empirical value)**	**Target s.d.:**	**0,003 % TM (Empirical value)**



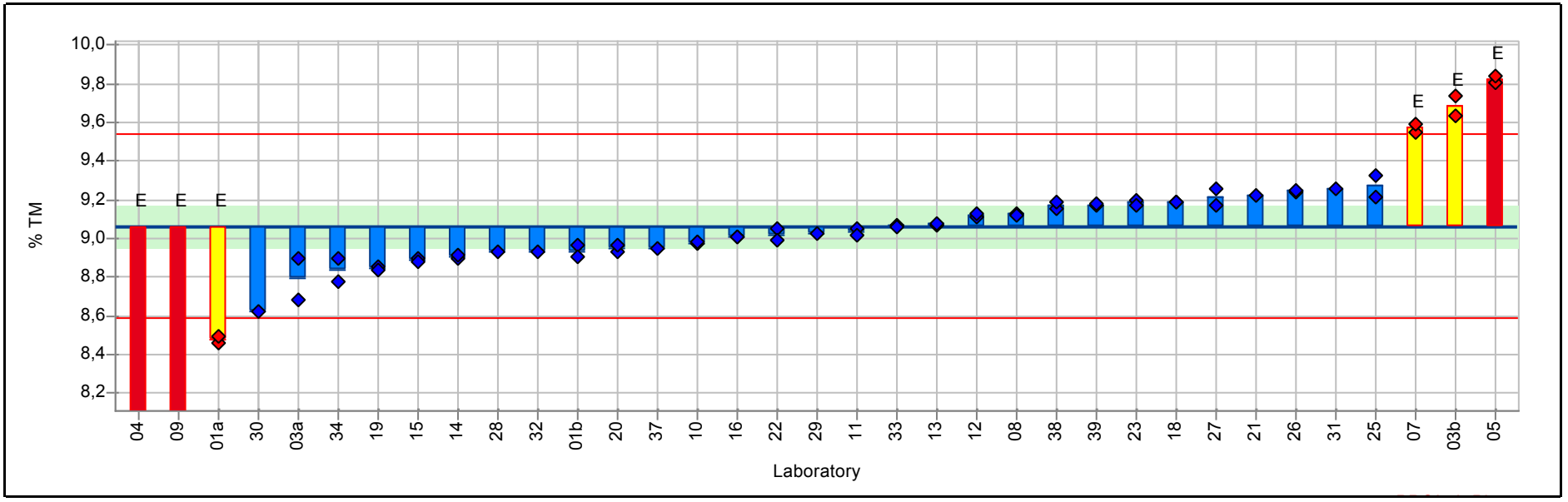
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,083	0,000	26,519	E	0,083	0,083		XRF (fusion)	Reconstitution Method
01b	0,088	0,002	28,511	CE	0,087	0,090		Standardless info only	fusion
03a	0,010	0,000	0,083		0,010	0,010		ICP-OES	ASTM D 6357
03b	0,010	0,000	0,083		0,010	0,010		XRF (fusion)	ASTM D 4326
04								XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,011	0,000	0,511		0,011	0,011	ISO 17025	XRF (fusion)	
07									
08	0,007	0,000	-1,143		0,007	0,007		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,050	<0,050		ICP-OES	
11	0,010	0,000	0,083		0,010	0,010	ISO 17025	XRF (fusion)	
12									
13	0,008	0,000	-0,567		0,008	0,008		XRF (fusion)	
14	0,013	0,000	1,169		0,013	0,013		XRF (fusion)	
15								XRF (fusion)	
16									
18	0,010	0,000	0,083		0,010	0,010		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,010	0,000	-0,008		0,010	0,010		XRF (fusion)	
21	0,012		0,807		0,012			XRF (fusion)	
22									
23									
25	0,007	0,000	-0,841		0,008	0,007		XRF (Pellet) info only	XRF pressed pellet
26	0,007	0,001	-0,822		0,008	0,007		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37								XRF (fusion)	
38									
39	0,009	0,001	-0,279		0,008	0,010	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,239 % TM**
Measurand:	**Al2O3**	**Repeatability s.d.:**	**0,028 % TM**
Mean ± U(Mean):	**9,064 ± 0,104 % TM**	**Range of tolerance:**	**8,586 - 9,542 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**9,064 % TM (Empirical value)**	**Target s.d.:**	**0,239 % TM (Empirical value)**



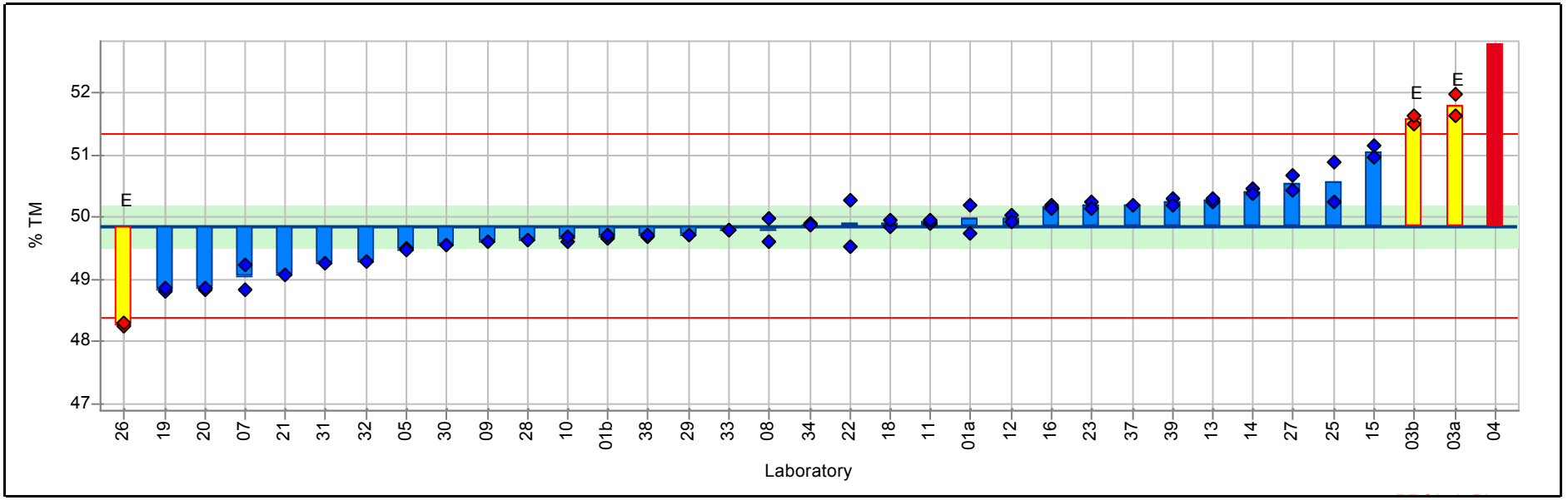
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	8,477	0,021	-2,452	E	8,463	8,492		XRF (fusion)	Reconstitution Method
01b	8,935	0,038	-0,538		8,962	8,908		Standardless info only	fusion
03a	8,790	0,156	-1,145		8,680	8,900		ICP-OES	ASTM D 6357
03b	9,685	0,078	2,598	E	9,740	9,630		XRF (fusion)	ASTM D 4326
04	7,520		-6,456	E	7,520			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	9,822	0,026	3,171	E	9,803	9,841	ISO 17025	XRF (fusion)	
07	9,570	0,035	2,119	E	9,546	9,595	ISO 17025	XRF (fusion)	
08	9,124	0,012	0,251		9,132	9,115		XRF (fusion)	
09	8,000		-4,449	E	8,000			XRF (Pellet) info only	
10	8,975	0,007	-0,371		8,970	8,980	ISO 17025	XRF (fusion)	
11	9,035	0,021	-0,120		9,050	9,020	ISO 17025	XRF (fusion)	
12	9,120	0,014	0,235		9,110	9,130		XRF (fusion)	
13	9,073	0,001	0,039		9,072	9,074		XRF (fusion)	
14	8,905	0,011	-0,666		8,897	8,912		XRF (fusion)	
15	8,887	0,013	-0,741		8,896	8,877		XRF (fusion)	
16	9,010	0,000	-0,225		9,010	9,010	ISO 17025	XRF (fusion)	
18	9,190	0,000	0,528		9,190	9,190		XRF (fusion)	
19	8,845	0,007	-0,915		8,850	8,840	ISO 17025	XRF (fusion)	
20	8,948	0,021	-0,484		8,933	8,963		XRF (fusion)	
21	9,220		0,653		9,220			XRF (fusion)	
22	9,020	0,042	-0,183		9,050	8,990		XRF (fusion)	
23	9,185	0,021	0,507		9,200	9,170		XRF (fusion)	
25	9,270	0,075	0,863		9,217	9,323		XRF (fusion)	
26	9,248	0,006	0,768		9,243	9,252		XRF (fusion)	
27	9,215	0,064	0,633		9,260	9,170		XRF (fusion)	
28	8,930		-0,559		8,930			XRF (fusion)	
29	9,025		-0,162		9,025			XRF (fusion)	
30	8,620		-1,856		8,620			XRF (fusion)	
31	9,260		0,821		9,260			XRF (fusion)	
32	8,930		-0,559		8,930			XRF (fusion)	
33	9,065	0,007	0,005		9,070	9,060	ISO 17025	XRF (fusion)	
34	8,840	0,085	-0,936		8,900	8,780		XRF (fusion)	
37	8,950		-0,476		8,950			XRF (fusion)	
38	9,170	0,028	0,444		9,150	9,190		XRF (fusion)	
39	9,175	0,007	0,465		9,170	9,180	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,741 % TM**
Measurand:	**CaO**	**Repeatability s.d.:**	**0,100 % TM**
Mean ± U(Mean):	**49,861 ± 0,323 % TM**	**Range of tolerance:**	**48,378 - 51,343 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**49,861 % TM (Empirical value)**	**Target s.d.:**	**0,741 % TM (Empirical value)**



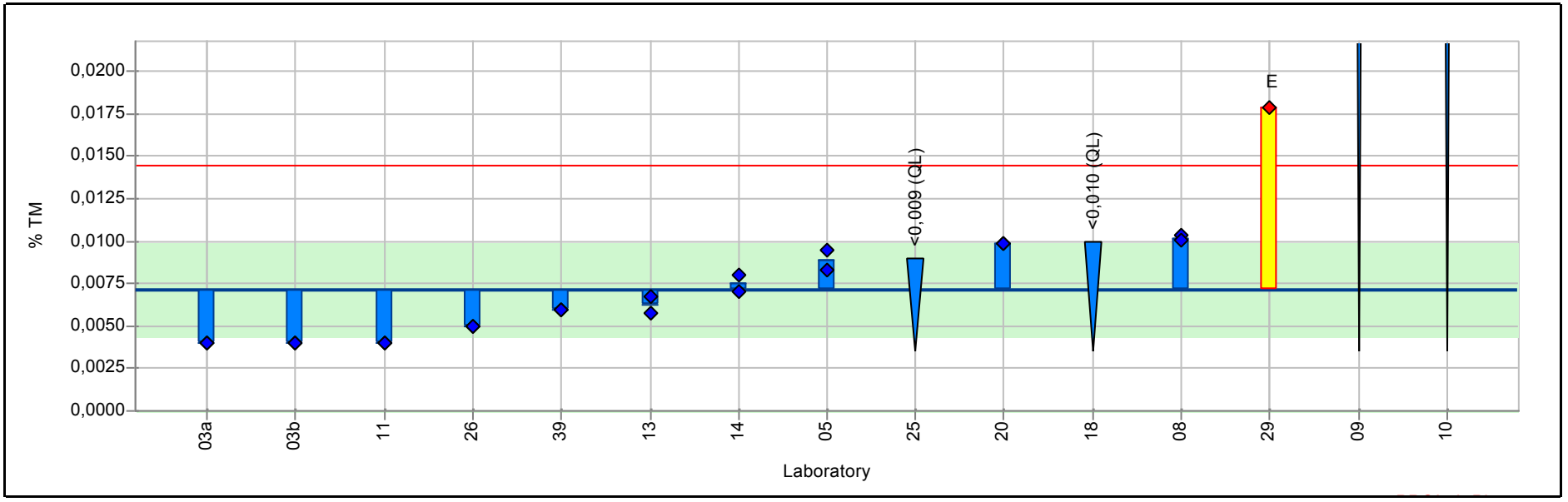
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	49,977	0,320	0,156		49,750	50,203		XRF (fusion)	Reconstitution Method
01b	49,694	0,036	-0,225		49,668	49,719		Standardless info only	fusion
03a	51,795	0,247	2,609	E	51,620	51,970		ICP-OES	ASTM D 6357
03b	51,570	0,099	2,306	E	51,500	51,640		XRF (fusion)	ASTM D 4326
04	59,420		12,895	E	59,420			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	49,485	0,026	-0,506		49,504	49,467	ISO 17025	XRF (fusion)	
07	49,037	0,266	-1,111		48,849	49,225	ISO 17025	XRF (fusion)	
08	49,793	0,256	-0,091		49,974	49,612		XRF (fusion)	
09	49,600		-0,352		49,600			XRF (Pellet) info only	
10	49,650	0,071	-0,284		49,600	49,700	ISO 17025	XRF (fusion)	
11	49,930	0,028	0,094		49,910	49,950	ISO 17025	XRF (fusion)	
12	49,985	0,078	0,168		50,040	49,930		XRF (fusion)	
13	50,270	0,042	0,552		50,240	50,300		XRF (fusion)	
14	50,418	0,044	0,752		50,449	50,387		XRF (fusion)	
15	51,053	0,135	1,608		50,957	51,148		XRF (fusion)	
16	50,175	0,035	0,424		50,200	50,150	ISO 17025	XRF (fusion)	
18	49,905	0,064	0,060		49,860	49,950		XRF (fusion)	
19	48,845	0,035	-1,370		48,820	48,870	ISO 17025	XRF (fusion)	
20	48,851	0,007	-1,361		48,846	48,856		XRF (fusion)	
21	49,070		-1,067		49,070			XRF (fusion)	
22	49,900	0,523	0,053		50,270	49,530		XRF (fusion)	
23	50,185	0,078	0,438		50,240	50,130		XRF (fusion)	
25	50,563	0,443	0,947		50,876	50,249		XRF (fusion)	
26	48,285	0,035	-2,125	E	48,260	48,310		XRF (fusion)	
27	50,545	0,163	0,923		50,660	50,430		XRF (fusion)	
28	49,640		-0,298		49,640			XRF (fusion)	
29	49,725		-0,183		49,725			XRF (fusion)	
30	49,565		-0,399		49,565			XRF (fusion)	
31	49,250		-0,824		49,250			XRF (fusion)	
32	49,280		-0,783		49,280			XRF (fusion)	
33	49,790	0,000	-0,095		49,790	49,790	ISO 17025	XRF (fusion)	
34	49,880	0,014	0,026		49,890	49,870		XRF (fusion)	
37	50,200		0,458		50,200			XRF (fusion)	
38	49,710	0,014	-0,203		49,700	49,720		XRF (fusion)	
39	50,250	0,071	0,525		50,300	50,200	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,004 % TM**
Measurand:	**Cr2O3**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,007 ± 0,003 % TM**	**Range of tolerance:**	**0,000 - 0,014 % TM (|z-score| <= 2,00)**
No. of laboratories:	**11**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,007 % TM (Empirical value)**	**Target s.d.:**	**0,004 % TM (Empirical value)**



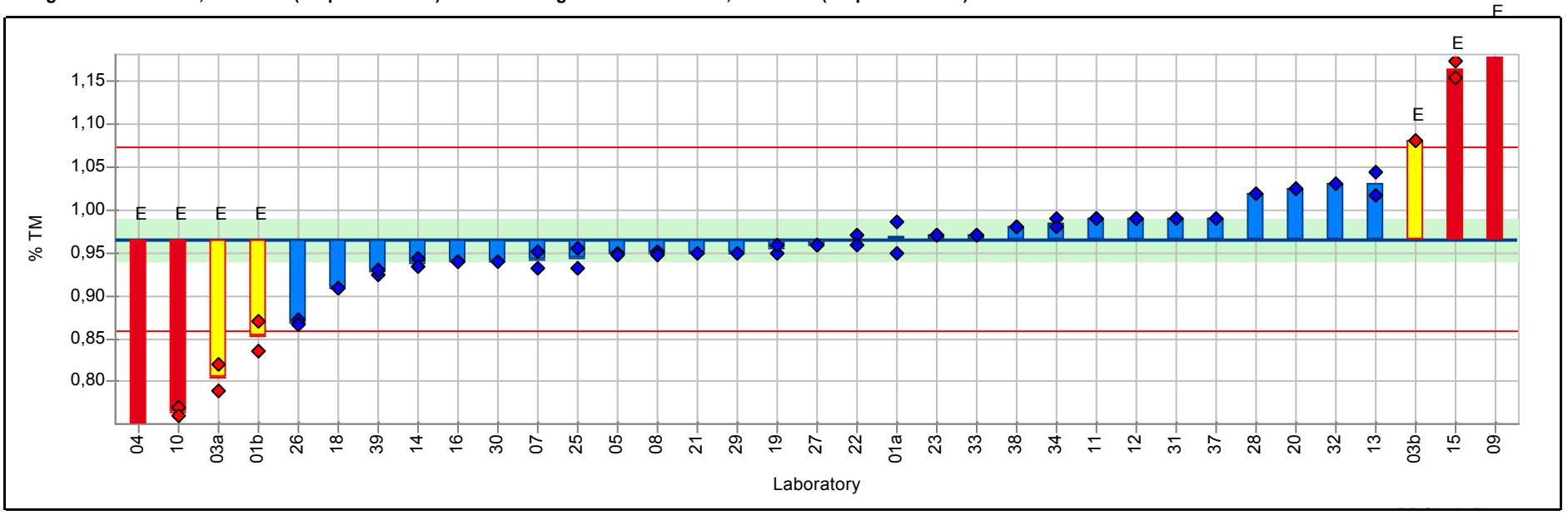
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a								XRF (fusion)	Reconstitution Method
01b									
03a	0,004	0,000	-0,852		0,004	0,004		ICP-OES	ASTM D 6357
03b	0,004	0,000	-0,852		0,004	0,004		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,009	0,001	0,491		0,010	0,008	ISO 17025	XRF (fusion)	
07									
08	0,010	0,000	0,830		0,010	0,010		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,004	0,000	-0,852		0,004	0,004	ISO 17025	XRF (fusion)	
12									
13	0,006	0,001	-0,232		0,007	0,006		XRF (fusion)	
14	0,007	0,001	0,104		0,007	0,008		XRF (fusion)	
15									
16									
18					<0,010	<0,010		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,010	0,000	0,749		0,010	0,010		XRF (fusion)	
21									
22									
23									
25					<0,009	<0,009		XRF (fusion)	
26	0,005	0,000	-0,579		0,005	0,005		XRF (fusion)	
27									
28									
29	0,018		2,945	E	0,018			XRF (fusion)	
30									
31									
32									
33									
34									
37									
38									
39	0,006	0,000	-0,306		0,006	0,006	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,054 % TM**
Measurand:	**Fe2O3**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**0,966 ± 0,023 % TM**	**Range of tolerance:**	**0,858 - 1,074 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,966 % TM (Empirical value)**	**Target s.d.:**	**0,054 % TM (Empirical value)**



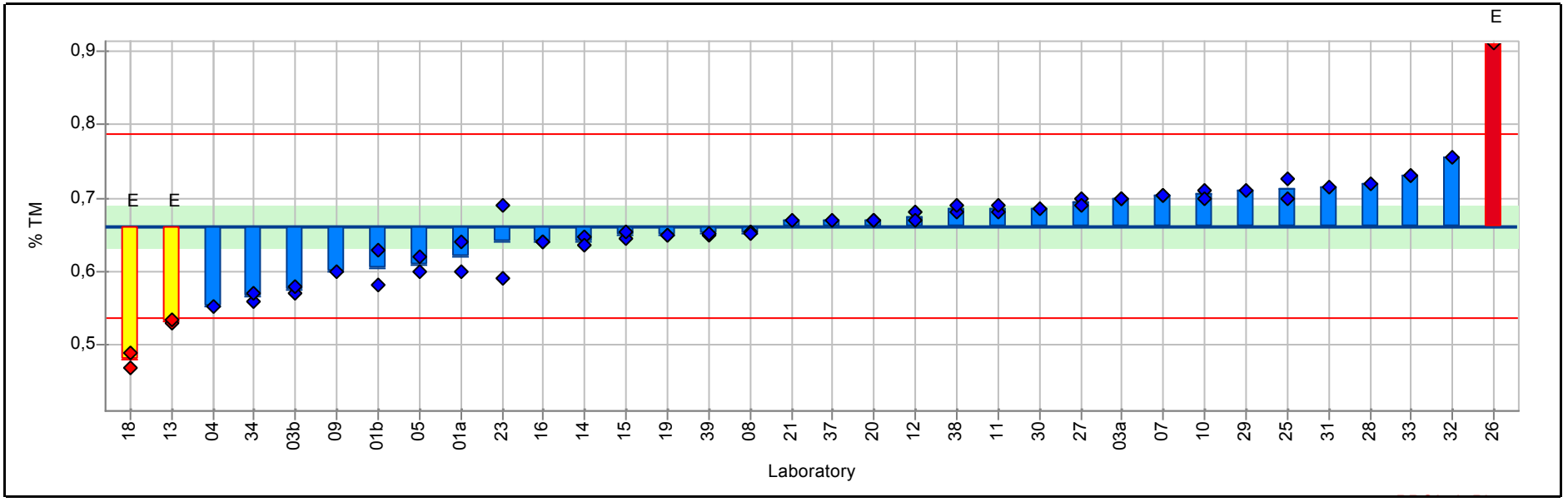
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,968	0,026	0,045		0,987	0,950		XRF (fusion)	Reconstitution Method
01b	0,853	0,025	-2,110	E	0,870	0,835		Standardless info only	fusion
03a	0,805	0,021	-2,992	E	0,790	0,820		ICP-OES	ASTM D 6357
03b	1,080	0,000	2,117	E	1,080	1,080		XRF (fusion)	ASTM D 4326
04	0,566		-7,436	E	0,566			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,949	0,002	-0,319		0,950	0,948	ISO 17025	XRF (fusion)	
07	0,942	0,014	-0,447		0,952	0,932	ISO 17025	XRF (fusion)	
08	0,950	0,002	-0,300		0,951	0,948		XRF (fusion)	
09	1,200		4,346	E	1,200			XRF (Pellet) info only	
10	0,765	0,007	-3,735	E	0,770	0,760	ISO 17025	XRF (fusion)	
11	0,990	0,000	0,445		0,990	0,990	ISO 17025	XRF (fusion)	
12	0,990	0,000	0,445		0,990	0,990		XRF (fusion)	
13	1,030	0,019	1,197		1,044	1,017		XRF (fusion)	
14	0,939	0,007	-0,503		0,944	0,934		XRF (fusion)	
15	1,163	0,014	3,667	E	1,173	1,154		XRF (fusion)	
16	0,940	0,000	-0,484		0,940	0,940	ISO 17025	XRF (fusion)	
18	0,910	0,000	-1,041		0,910	0,910		XRF (fusion)	
19	0,955	0,007	-0,205		0,950	0,960	ISO 17025	XRF (fusion)	
20	1,025	0,000	1,103		1,025	1,025		XRF (fusion)	
21	0,950		-0,298		0,950			XRF (fusion)	
22	0,965	0,007	-0,020		0,970	0,960		XRF (fusion)	
23	0,970	0,000	0,073		0,970	0,970		XRF (fusion)	
25	0,944	0,016	-0,410		0,955	0,933		XRF (fusion)	
26	0,869	0,004	-1,803		0,872	0,866		XRF (fusion)	
27	0,960	0,000	-0,113		0,960	0,960		XRF (fusion)	
28	1,020		1,002		1,020			XRF (fusion)	
29	0,950		-0,298		0,950			XRF (fusion)	
30	0,940		-0,484		0,940			XRF (fusion)	
31	0,990		0,445		0,990			XRF (fusion)	
32	1,030		1,188		1,030			XRF (fusion)	
33	0,970	0,000	0,073		0,970	0,970	ISO 17025	XRF (fusion)	
34	0,985	0,007	0,352		0,990	0,980		XRF (fusion)	
37	0,990		0,445		0,990			XRF (fusion)	
38	0,980	0,000	0,259		0,980	0,980		XRF (fusion)	
39	0,927	0,005	-0,716		0,924	0,931	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,063 % TM**
Measurand:	**K2O**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**0,662 ± 0,028 % TM**	**Range of tolerance:**	**0,536 - 0,788 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,662 % TM (Empirical value)**	**Target s.d.:**	**0,063 % TM (Empirical value)**



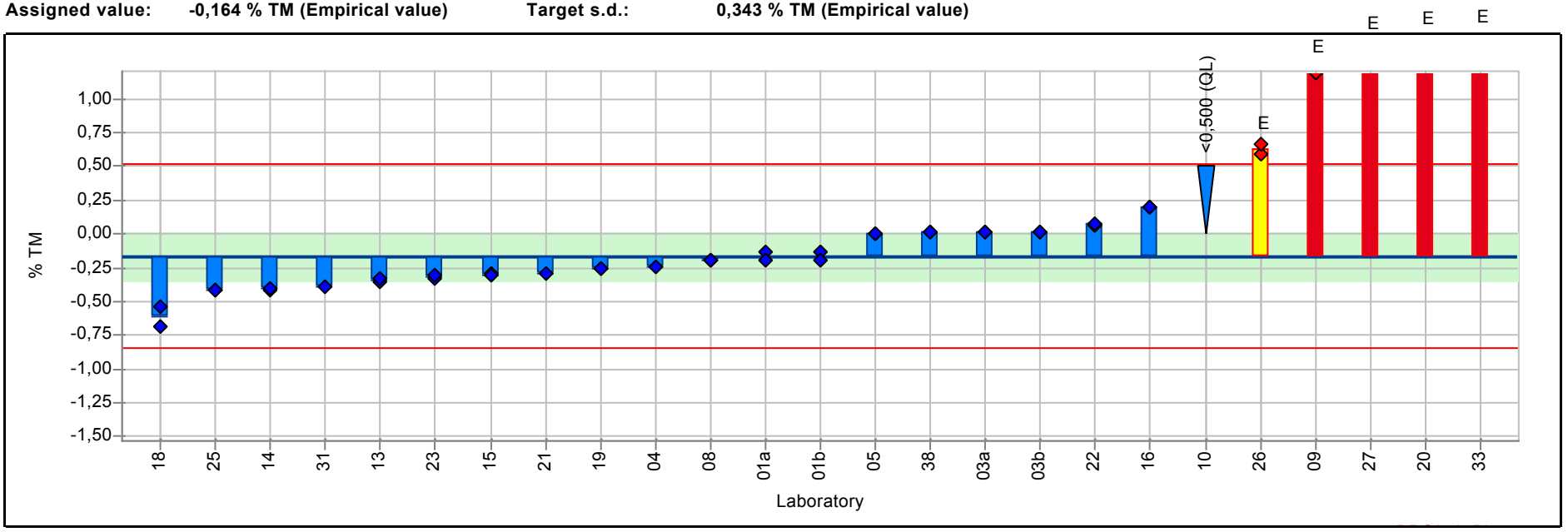
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,621	0,028	-0,650		0,641	0,601		XRF (fusion)	Reconstitution Method
01b	0,605	0,033	-0,897		0,629	0,582		Standardless info only	fusion
03a	0,700	0,000	0,607		0,700	0,700		ICP-OES	ASTM D 6357
03b	0,575	0,007	-1,383		0,570	0,580		XRF (fusion)	ASTM D 4326
04	0,553		-1,733		0,553			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,609	0,014	-0,837		0,619	0,599	ISO 17025	XRF (fusion)	
07	0,704	0,000	0,671		0,704	0,704	ISO 17025	XRF (fusion)	
08	0,652	0,002	-0,157		0,653	0,651		XRF (fusion)	
09	0,600		-0,985		0,600			XRF (Pellet) info only	
10	0,705	0,007	0,687		0,710	0,700	ISO 17025	XRF (fusion)	
11	0,685	0,007	0,368		0,680	0,690	ISO 17025	XRF (fusion)	
12	0,675	0,007	0,209		0,680	0,670		XRF (fusion)	
13	0,533	0,003	-2,049	E	0,531	0,536		XRF (fusion)	
14	0,641	0,009	-0,324		0,648	0,635		XRF (fusion)	
15	0,648	0,006	-0,214		0,644	0,653		XRF (fusion)	
16	0,640	0,000	-0,348		0,640	0,640	ISO 17025	XRF (fusion)	
18	0,480	0,014	-2,895	E	0,490	0,470		XRF (fusion)	
19	0,650	0,000	-0,189		0,650	0,650	ISO 17025	XRF (fusion)	
20	0,670	0,000	0,137		0,670	0,670		XRF (fusion)	
21	0,669		0,114		0,669			XRF (fusion)	
22									
23	0,640	0,071	-0,348		0,590	0,690		XRF (fusion)	
25	0,713	0,018	0,814		0,700	0,726		ICP-OES	
26	0,912	0,003	3,981	E	0,914	0,910		XRF (fusion)	
27	0,695	0,007	0,527		0,700	0,690		XRF (fusion)	
28	0,720		0,925		0,720			XRF (fusion)	
29	0,710		0,766		0,710			XRF (fusion)	
30	0,685		0,368		0,685			XRF (fusion)	
31	0,715		0,846		0,715			XRF (fusion)	
32	0,755		1,482		0,755			XRF (fusion)	
33	0,730	0,000	1,084		0,730	0,730	ISO 17025	XRF (fusion)	
34	0,565	0,007	-1,542		0,560	0,570		XRF (fusion)	
37	0,670		0,129		0,670			XRF (fusion)	
38	0,685	0,007	0,368		0,680	0,690		XRF (fusion)	
39	0,651	0,001	-0,173		0,650	0,652	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,343 % TM**
Measurand:	**LOI (1h @ 950°C) observed**	**Repeatability s.d.:**	**0,015 % TM**
Mean ± U(Mean):	**-0,164 ± 0,175 % TM**	**Range of tolerance:**	**-0,849 - 0,521 % TM (|z-score| <= 2,00)**
No. of laboratories:	**24**	**Method:**	**DIN 38402 A45**
Assigned value:	**-0,164 % TM (Empirical value)**	**Target s.d.:**	**0,343 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	-0,169	0,044	-0,016		-0,138	-0,200		1h@950°C	Gravimetry
01b	-0,169	0,044	-0,016		-0,138	-0,200		1h@950°C	Gravimetry
03a	0,015	0,007	0,521		0,010	0,020		1h@950°C	
03b	0,015	0,007	0,521		0,010	0,020		1h@950°C	
04	-0,240		-0,223		-0,240			1h@950°C	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,001	0,000	0,480		0,001	0,001	ISO 17025	DIN EN 15169	
07							ISO 17025	1h@950°C	
08	-0,200	0,000	-0,106		-0,200	-0,200		1h@950°C	
09	1,200		3,981	E	1,200		ISO 17025	DIN 51719	
10					<0,500	<0,500	ISO 17025	1h@950°C	Thermogravimetric analyzer
11							ISO 17025	Wet chemistry EN196-2	
12								1h@950°C	
13	-0,345	0,021	-0,530		-0,360	-0,330		1h@950°C	gravimetric
14	-0,405	0,007	-0,705		-0,410	-0,400		1h@950°C	
15	-0,300	0,014	-0,398		-0,290	-0,310		1h@950°C	
16	0,200	0,000	1,061		0,200	0,200	ISO 17025	Wet chemistry EN196-2	
18	-0,615	0,106	-1,318		-0,540	-0,690		1h@950°C	
19	-0,260	0,000	-0,282		-0,260	-0,260	ISO 17025	TGA	TGA - not corrected -
20	1,405	0,021	4,579	E	1,390	1,420		Wet chemistry EN196-2	
21	-0,290		-0,369		-0,290			1h@950°C	
22	0,070	0,014	0,682		0,060	0,080		1h@950°C	
23	-0,320	0,014	-0,457		-0,330	-0,310		1h@950°C	
25	-0,415	0,007	-0,734		-0,410	-0,420		1h@950°C	
26	0,625	0,049	2,302	E	0,590	0,660		1h@950°C	
27	1,370	0,000	4,477	E	1,370	1,370		1h@950°C	
28									
29								1h@950°C	
30									
31	-0,390		-0,661		-0,390			1h@950°C	
32									
33	1,414	0,011	4,606	E	1,406	1,422		1h@950°C	
34									
37									
38	0,010	0,000	0,507		0,010	0,010		1h@950°C	
39									

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,108 % TM**
Measurand:	**MgO**	**Repeatability s.d.:**	**0,020 % TM**
Mean ± U(Mean):	**4,398 ± 0,047 % TM**	**Range of tolerance:**	**4,183 - 4,614 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**4,398 % TM (Empirical value)**	**Target s.d.:**	**0,108 % TM (Empirical value)**

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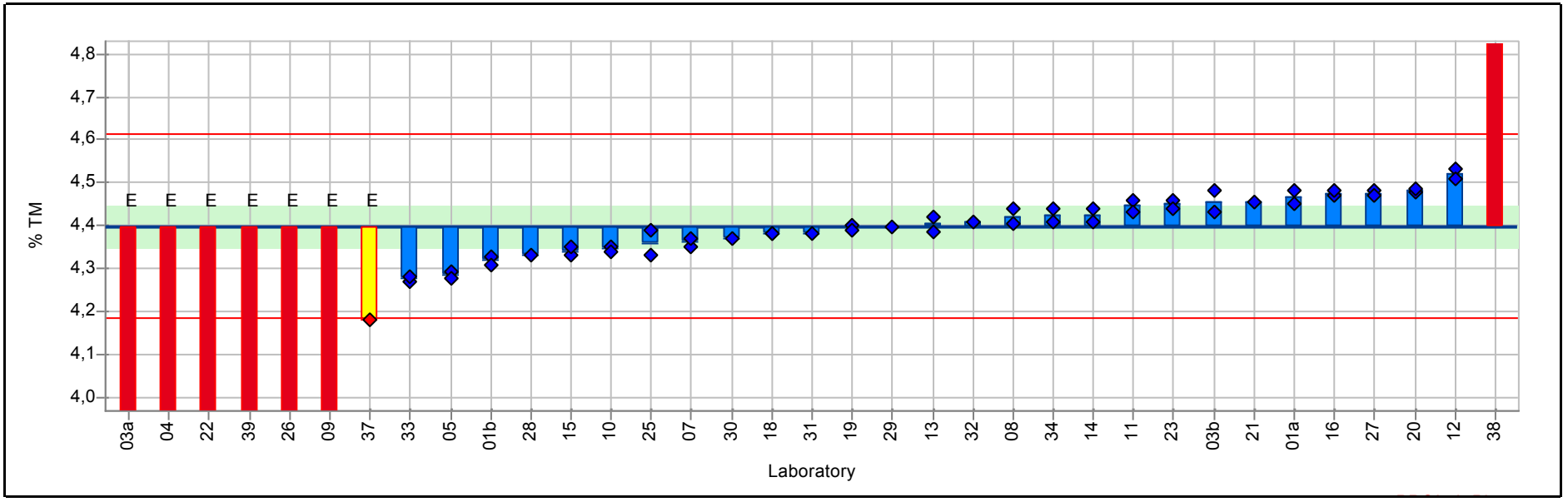


Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	4,465	0,021	0,617		4,450	4,480		XRF (fusion)	Reconstitution Method
01b	4,317	0,012	-0,751		4,326	4,309		Standardless info only	fusion
03a	3,185	0,120	-11,258	E	3,100	3,270		ICP-OES	ASTM D 6357
03b	4,455	0,035	0,524		4,430	4,480		XRF (fusion)	ASTM D 4326
04	3,570		-7,686	E	3,570			XRF (fusion)	

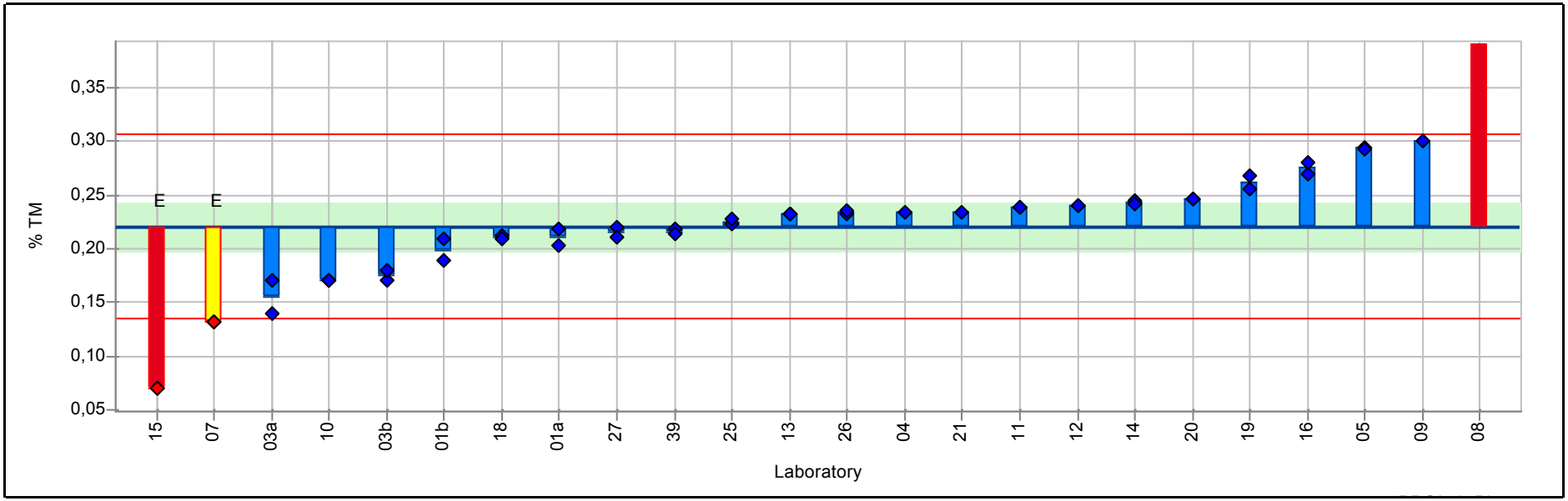
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	4,285	0,011	-1,052		4,293	4,278	ISO 17025	XRF (fusion)	
07	4,362	0,013	-0,343		4,352	4,371	ISO 17025	XRF (fusion)	
08	4,422	0,024	0,214		4,439	4,405		XRF (fusion)	
09	3,900		-4,625	E	3,900			XRF (Pellet) info only	
10	4,345	0,007	-0,496		4,350	4,340	ISO 17025	XRF (fusion)	
11	4,445	0,021	0,432		4,460	4,430	ISO 17025	XRF (fusion)	
12	4,520	0,014	1,127		4,530	4,510		XRF (fusion)	
13	4,402	0,025	0,037		4,385	4,420		XRF (fusion)	
14	4,425	0,022	0,251		4,410	4,441		XRF (fusion)	
15	4,339	0,013	-0,552		4,330	4,348		XRF (fusion)	
16	4,475	0,007	0,710		4,470	4,480	ISO 17025	XRF (fusion)	
18	4,380	0,000	-0,171		4,380	4,380		XRF (fusion)	
19	4,395	0,007	-0,032		4,400	4,390	ISO 17025	XRF (fusion)	
20	4,481	0,007	0,769		4,476	4,486		XRF (fusion)	
21	4,456		0,534		4,456			XRF (fusion)	
22	3,575	0,049	-7,640	E	3,610	3,540		XRF (fusion)	
23	4,450	0,014	0,478		4,460	4,440		XRF (fusion)	
25	4,360	0,040	-0,362		4,388	4,331		XRF (fusion)	
26	3,866	0,006	-4,940	E	3,870	3,862		XRF (fusion)	
27	4,475	0,007	0,710		4,480	4,470		XRF (fusion)	
28	4,330		-0,635		4,330			XRF (fusion)	
29	4,395		-0,032		4,395			XRF (fusion)	
30	4,370		-0,264		4,370			XRF (fusion)	
31	4,380		-0,171		4,380			XRF (fusion)	
32	4,410		0,107		4,410			XRF (fusion)	
33	4,275	0,007	-1,146		4,270	4,280	ISO 17025	XRF (fusion)	
34	4,425	0,021	0,246		4,410	4,440		XRF (fusion)	
37	4,180		-2,027	E	4,180			XRF (fusion)	
38	4,960	0,000	5,207	E	4,960	4,960		XRF (fusion)	
39	3,860	0,014	-4,996	E	3,850	3,870	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,043 % TM**
Measurand:	**Mn2O3**	**Repeatability s.d.:**	**0,005 % TM**
Mean ± U(Mean):	**0,221 ± 0,023 % TM**	**Range of tolerance:**	**0,135 - 0,307 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,221 % TM (Empirical value)**	**Target s.d.:**	**0,043 % TM (Empirical value)**

E



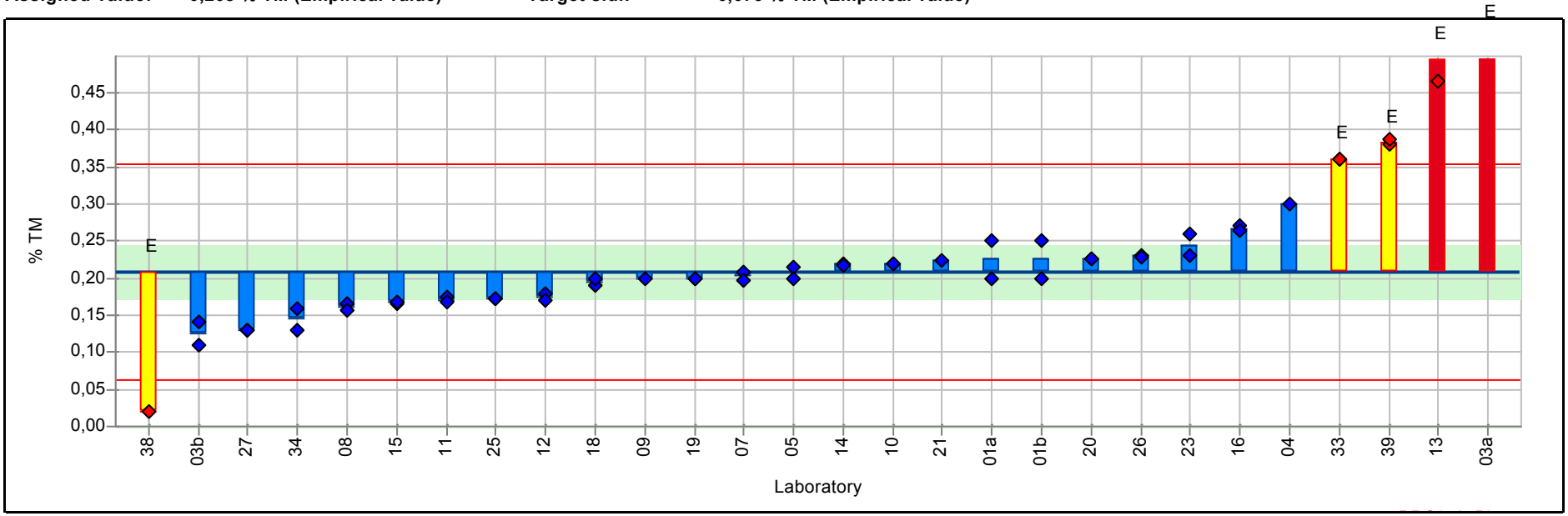
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,211	0,011	-0,236		0,218	0,203		XRF (fusion)	Reconstitution Method
01b	0,199	0,014	-0,503		0,209	0,189		Standardless info only	fusion
03a	0,155	0,021	-1,525		0,140	0,170		ICP-OES	ASTM D 6357
03b	0,175	0,007	-1,060		0,170	0,180		XRF (fusion)	ASTM D 4326
04	0,234		0,309		0,234			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,294	0,001	1,693		0,295	0,293	ISO 17025	XRF (fusion)	
07	0,132	0,000	-2,059	E	0,132	0,132		XRF (fusion)	
08	0,469	0,004	5,771	E	0,472	0,466		XRF (fusion)	
09	0,300		1,841		0,300			XRF (Pellet) info only	
10	0,170	0,000	-1,176		0,170	0,170	ISO 17025	XRF (fusion)	
11	0,238	0,000	0,402		0,238	0,238	ISO 17025	XRF (fusion)	
12	0,240	0,000	0,449		0,240	0,240		XRF (fusion)	
13	0,232	0,001	0,264		0,232	0,233		XRF (fusion)	
14	0,243	0,001	0,518		0,244	0,242		XRF (fusion)	
15	0,070	0,000	-3,493	E	0,070	0,070		XRF (fusion)	
16	0,275	0,007	1,261		0,270	0,280	ISO 17025	XRF (fusion)	
18	0,210	0,002	-0,236		0,212	0,209		XRF (fusion)	
19	0,261	0,008	0,948		0,256	0,267		XRF (fusion)	
20	0,246	0,000	0,599		0,246	0,246		XRF (fusion)	
21	0,234		0,309		0,234			XRF (fusion)	
22									
23									
25	0,225	0,003	0,100		0,223	0,227		XRF (fusion)	
26	0,233	0,002	0,298		0,232	0,235		XRF (fusion)	
27	0,215	0,007	-0,132		0,220	0,210		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,216	0,004	-0,109		0,219	0,213	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,073 % TM**
Measurand:	**Na2O**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**0,208 ± 0,036 % TM**	**Range of tolerance:**	**0,063 - 0,354 % TM (|z-score| <= 2,00)**
No. of laboratories:	**26**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,208 % TM (Empirical value)**	**Target s.d.:**	**0,073 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,226	0,036	0,238		0,200	0,251		XRF (fusion)	
01b	0,226	0,036	0,238		0,200	0,251		Standardless info only	fusion
03a	0,525	0,035	4,353	E	0,500	0,550		ICP-OES	ASTM D 6357
03b	0,125	0,021	-1,143		0,110	0,140		XRF (fusion)	ASTM D 4326
04	0,300		1,261		0,300			XRF (fusion)	

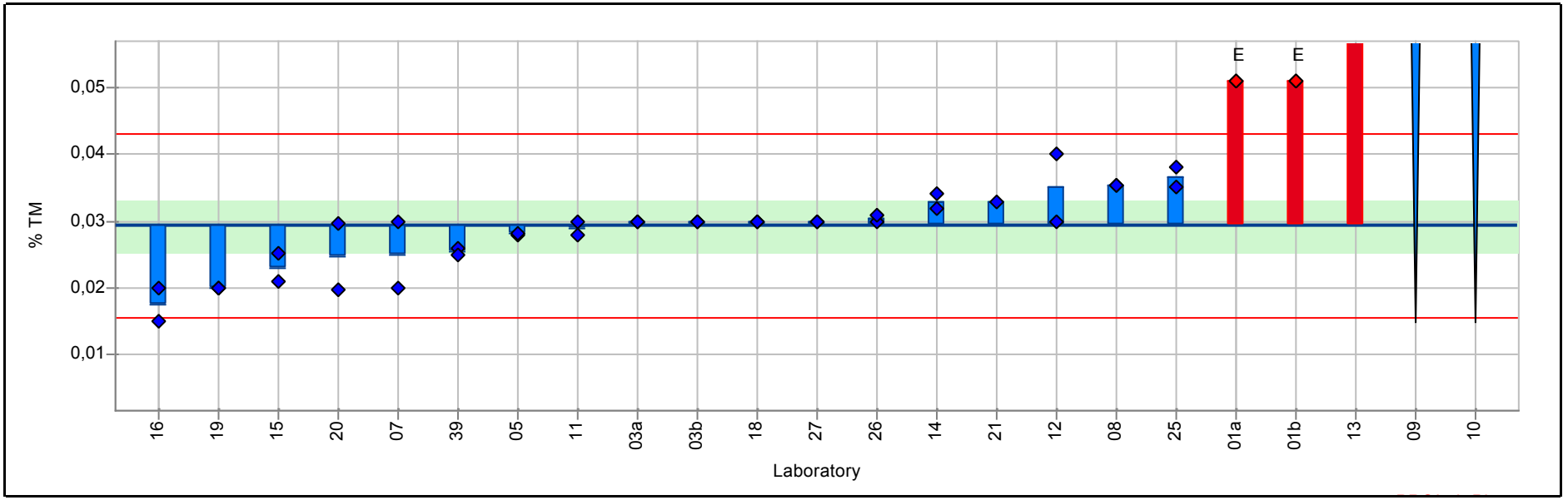
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,208	0,011	-0,003		0,216	0,200	ISO 17025	XRF (fusion)	
07	0,203	0,007	-0,071		0,208	0,198	ISO 17025	ICP-OES	
08	0,162	0,006	-0,637		0,166	0,158		XRF (fusion)	
09	0,200		-0,113		0,200			XRF (Pellet) info only	
10	0,220	0,000	0,162		0,220	0,220		ICP-OES	
11	0,170	0,005	-0,518		0,174	0,167	ISO 17025	XRF (fusion)	
12	0,175	0,007	-0,456		0,180	0,170		XRF (fusion)	
13	0,495	0,042	3,934	E	0,465	0,524		XRF (fusion)	
14	0,219	0,001	0,142		0,219	0,218		XRF (fusion)	
15	0,167	0,001	-0,566		0,166	0,168		XRF (fusion)	
16	0,268	0,004	0,815		0,270	0,265	ISO 17025	XRF (fusion)	
18	0,195	0,007	-0,181		0,190	0,200		XRF (fusion)	
19	0,200	0,000	-0,113		0,200	0,200		XRF (fusion)	
20	0,227	0,000	0,255		0,227	0,227		XRF (fusion)	
21	0,225		0,231		0,225			XRF (fusion)	
22									
23	0,245	0,021	0,506		0,260	0,230		XRF (fusion)	
25	0,172	0,001	-0,491		0,172	0,173		ICP-OES	
26	0,230	0,001	0,300		0,231	0,229		XRF (fusion)	
27	0,130	0,000	-1,074		0,130	0,130		XRF (fusion)	
28									
29									
30									
31									
32									
33	0,360	0,000	2,086	E	0,360	0,360	ISO 17025	XRF (fusion)	
34	0,145	0,021	-0,868		0,160	0,130		XRF (fusion)	
37									
38	0,020		-2,586	E	0,020			XRF (fusion)	
39	0,384	0,005	2,409	E	0,380	0,387	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

E

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,007 % TM**
Measurand:	**P2O5**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,029 ± 0,004 % TM**	**Range of tolerance:**	**0,015 - 0,043 % TM (|z-score| <= 2,00)**
No. of laboratories:	**20**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,029 % TM (Empirical value)**	**Target s.d.:**	**0,007 % TM (Empirical value)**



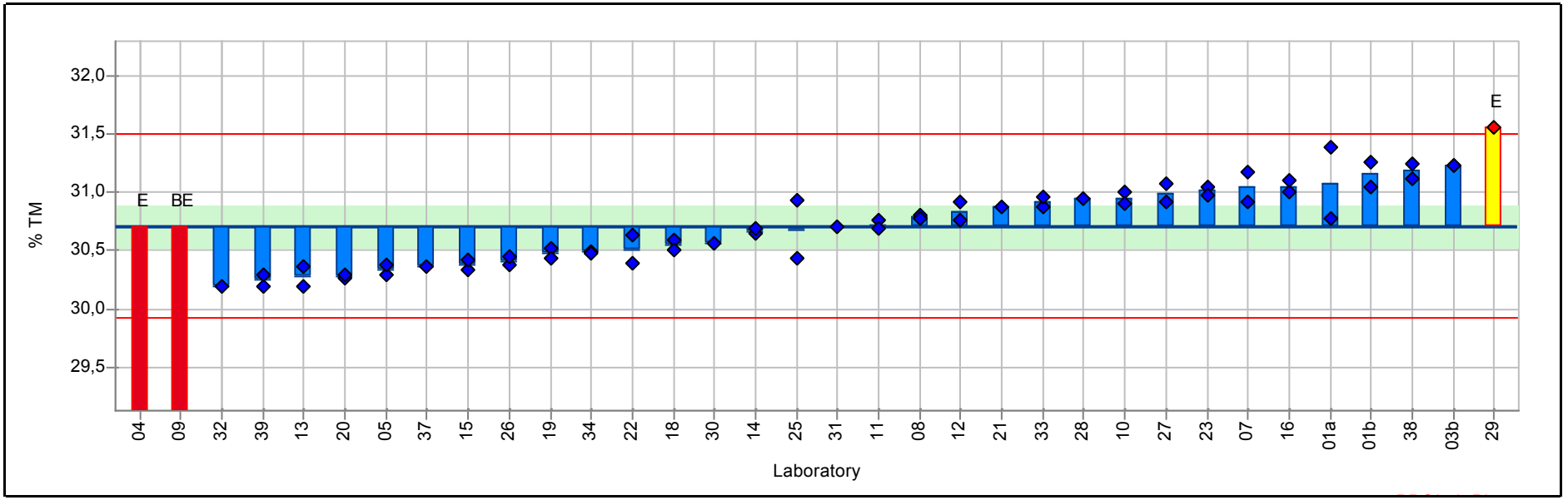
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,051	0,000	3,137	E	0,051	0,051		XRF (fusion)	
01b	0,051	0,000	3,137	E	0,051	0,051		Standardless info only	fusion
03a	0,030	0,000	0,104		0,030	0,030		ICP-OES	ASTM D 6357
03b	0,030	0,000	0,104		0,030	0,030		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,028	0,000	-0,177		0,028	0,028	ISO 17025	XRF (fusion)	
07	0,025	0,007	-0,618		0,020	0,030	ISO 17025	XRF (fusion)	
08	0,035	0,000	0,887		0,035	0,035		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,029	0,001	-0,040		0,030	0,028	ISO 17025	XRF (fusion)	
12	0,035	0,007	0,826		0,030	0,040		XRF (fusion)	
13	0,091	0,001	8,980	E	0,090	0,092		XRF (fusion)	
14	0,033	0,001	0,537		0,032	0,034		XRF (fusion)	
15	0,023	0,003	-0,897		0,025	0,021		XRF (fusion)	
16	0,018	0,004	-1,701		0,020	0,015	ISO 17025	XRF (fusion)	
18	0,030	0,000	0,104		0,030	0,030		XRF (fusion)	
19	0,020	0,000	-1,340		0,020	0,020		XRF (fusion)	
20	0,025	0,007	-0,669		0,030	0,020		XRF (fusion)	
21	0,033		0,537		0,033			XRF (fusion)	
22									
23									
25	0,037	0,002	1,043		0,038	0,035		XRF (fusion)	
26	0,030	0,001	0,176		0,030	0,031		XRF (fusion)	
27	0,030	0,000	0,104		0,030	0,030		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,026	0,001	-0,546		0,026	0,025	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,395 % TM**
Measurand:	**SiO2**	**Repeatability s.d.:**	**0,090 % TM**
Mean ± U(Mean):	**30,711 ± 0,175 % TM**	**Range of tolerance:**	**29,921 - 31,501 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**30,711 % TM (Empirical value)**	**Target s.d.:**	**0,395 % TM (Empirical value)**



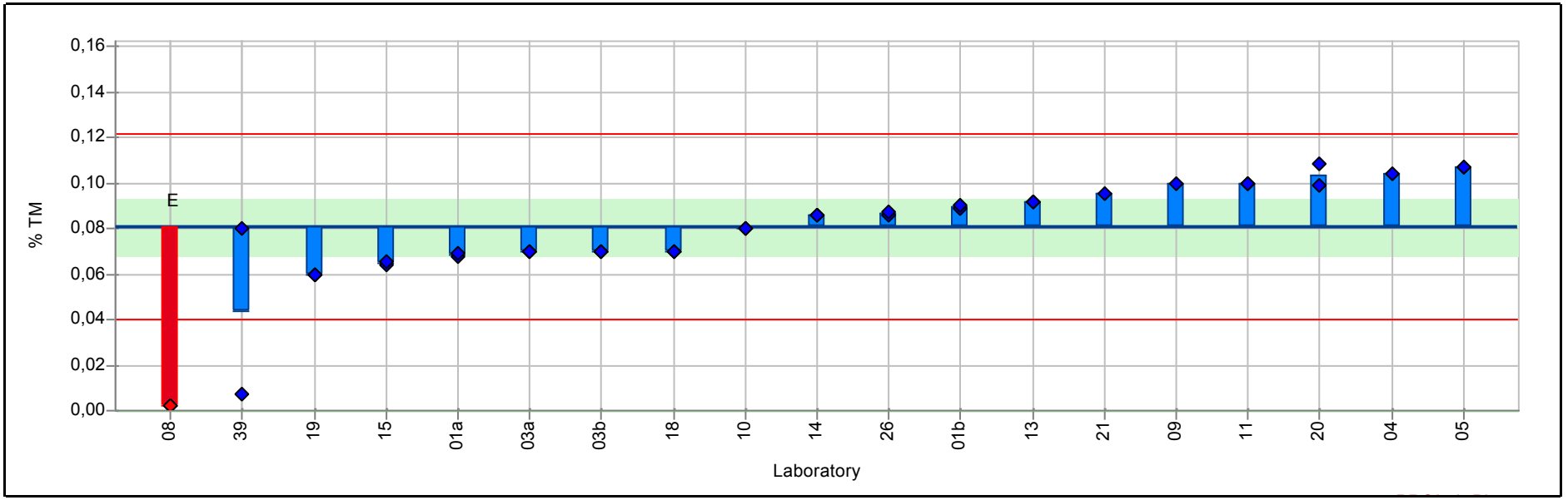
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	31,078	0,426	0,930		30,777	31,380		XRF (fusion)	Reconstitution Method
01b	31,152	0,155	1,118		31,043	31,262		Standardless info only	fusion
03a									
03b	31,230	0,000	1,314		31,230	31,230		XRF (fusion)	ASTM D 4326
04	24,600		-15,475	E	24,600			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	30,331	0,060	-0,963		30,288	30,374	ISO 17025	XRF (fusion)	
07	31,041	0,175	0,835		30,917	31,165	ISO 17025	XRF (fusion)	
08	30,790	0,015	0,199		30,800	30,779		XRF (fusion)	
09	27,100		-9,144	BE	27,100			XRF (Pellet) info only	
10	30,950	0,071	0,605		31,000	30,900	ISO 17025	XRF (fusion)	
11	30,725	0,049	0,035		30,760	30,690	ISO 17025	XRF (fusion)	
12	30,835	0,106	0,314		30,910	30,760		XRF (fusion)	
13	30,275	0,120	-1,104		30,190	30,360		XRF (fusion)	
14	30,669	0,039	-0,108		30,641	30,696		XRF (fusion)	
15	30,376	0,054	-0,849		30,338	30,414		XRF (fusion)	
16	31,050	0,071	0,858		31,000	31,100	ISO 17025	XRF (fusion)	
18	30,550	0,057	-0,408		30,590	30,510		XRF (fusion)	
19	30,480	0,057	-0,585		30,520	30,440	ISO 17025	XRF (fusion)	
20	30,280	0,028	-1,092		30,260	30,300		XRF (fusion)	
21	30,870		0,402		30,870			XRF (fusion)	
22	30,510	0,170	-0,509		30,630	30,390		XRF (fusion)	
23	31,010	0,057	0,757		31,050	30,970		XRF (fusion)	
25	30,681	0,349	-0,078		30,927	30,434		XRF (fusion)	
26	30,411	0,044	-0,760		30,380	30,442		XRF (fusion)	
27	30,990	0,113	0,706		31,070	30,910		XRF (fusion)	
28	30,940		0,580		30,940			XRF (fusion)	
29	31,555		2,137	E	31,555			XRF (fusion)	
30	30,560		-0,383		30,560			XRF (fusion)	
31	30,710		-0,003		30,710			XRF (fusion)	
32	30,200		-1,294		30,200			XRF (fusion)	
33	30,915	0,064	0,516		30,870	30,960	ISO 17025	XRF (fusion)	
34	30,485	0,007	-0,573		30,490	30,480		XRF (fusion)	
37	30,370		-0,864		30,370			XRF (fusion)	
38	31,180	0,085	1,187		31,120	31,240		XRF (fusion)	
39	30,250	0,071	-1,168		30,200	30,300	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,020 % TM**
Measurand:	**SrO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,081 ± 0,012 % TM**	**Range of tolerance:**	**0,040 - 0,122 % TM (|z-score| <= 2,00)**
No. of laboratories:	**17**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,081 % TM (Empirical value)**	**Target s.d.:**	**0,020 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,069	0,001	-0,611		0,068	0,069		XRF (fusion)	Reconstitution Method
01b	0,089	0,001	0,423		0,089	0,090		Standardless info only	fusion
03a	0,070	0,000	-0,537		0,070	0,070		ICP-OES	ASTM D 6357
03b	0,070	0,000	-0,537		0,070	0,070		XRF (fusion)	ASTM D 4326
04	0,104		1,136		0,104			XRF (fusion)	

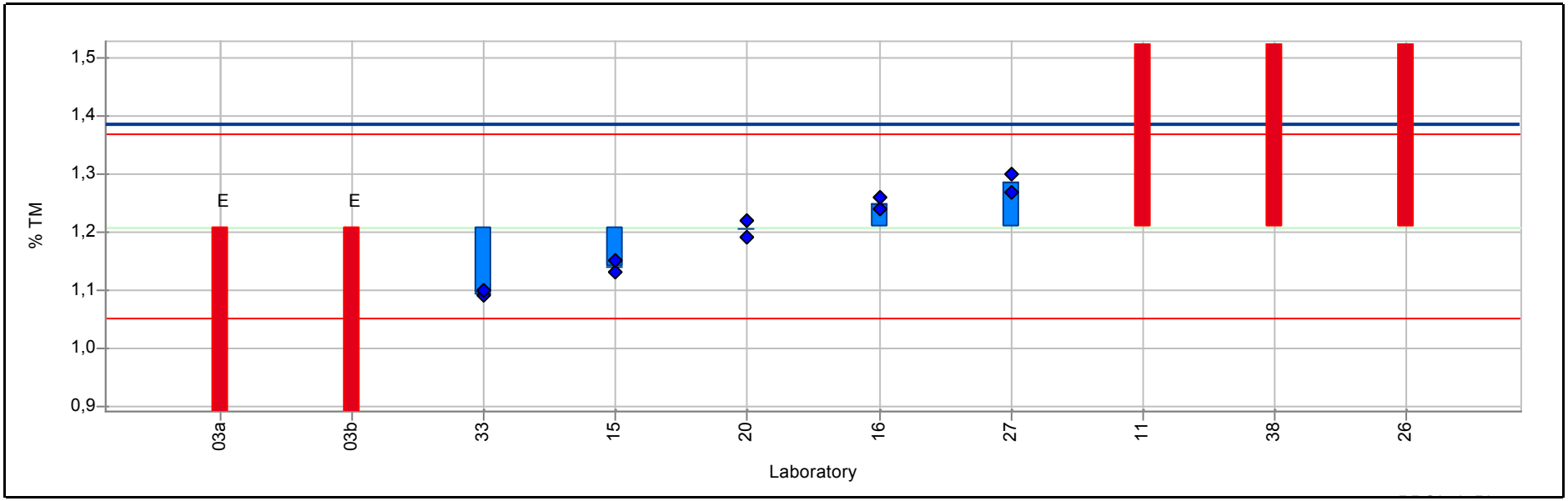
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,107	0,000	1,283		0,107	0,107	ISO 17025	XRF (fusion)	
07									
08	0,002	0,000	-3,875	E	0,002	0,002		XRF (fusion)	
09	0,100		0,939		0,100			XRF (Pellet) info only	
10	0,080	0,000	-0,045		0,080	0,080		ICP-OES	
11	0,100	0,000	0,939		0,100	0,100	ISO 17025	XRF (fusion)	
12									
13	0,092	0,000	0,529		0,091	0,092		XRF (fusion)	
14	0,086	0,000	0,250		0,086	0,086		XRF (fusion)	
15	0,065	0,001	-0,798		0,064	0,065		XRF (fusion)	
16									
18	0,070	0,000	-0,537		0,070	0,070		XRF (fusion)	
19	0,060	0,000	-1,029		0,060	0,060		XRF (fusion)	
20	0,104	0,007	1,113		0,108	0,099		XRF (fusion)	
21	0,095		0,693		0,095			XRF (fusion)	
22									
23									
25									
26	0,086	0,001	0,275		0,086	0,087		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,044	0,051	-1,826		0,080	0,008	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**1,032 % TM**
Measurand:	**Sulfate expressed as SO3**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**1,386 ± 0,860 % TM**	**Range of tolerance:**	**1,050 - 1,370 % TM (|z-score| <= 2,00)**
No. of laboratories:	**9**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,210 % TM (Reference value)**	**Target s.d.:**	**0,080 % TM (Reference value)**

E



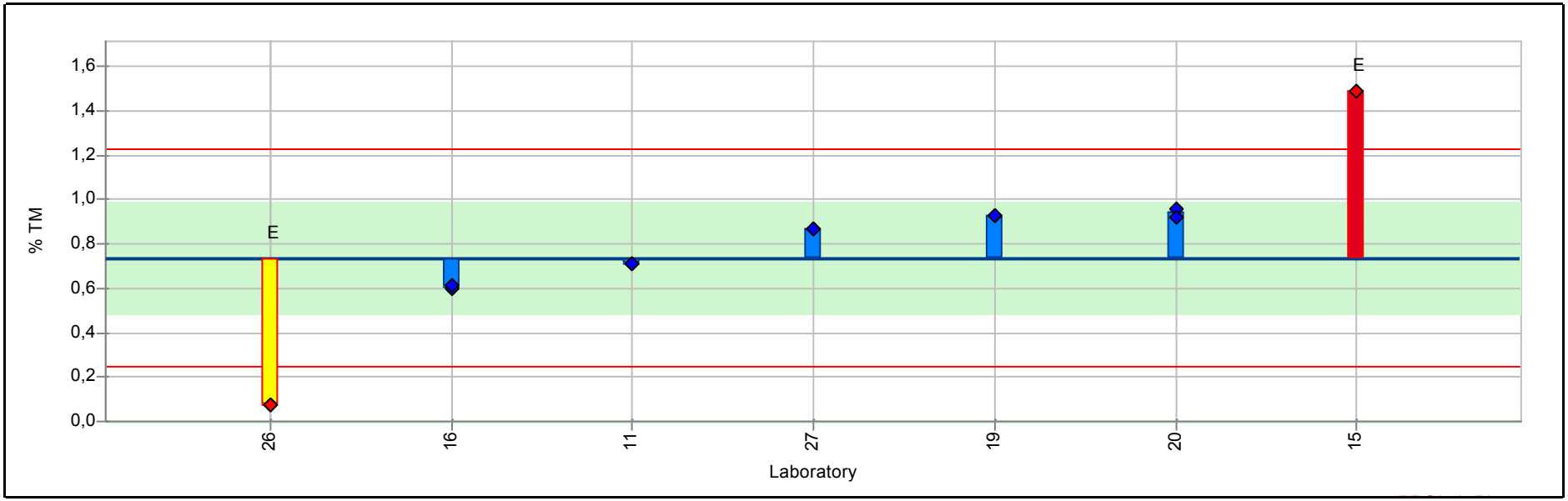
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,015	0,001	-14,931	E	0,016	0,015		Wet chemistry EN196-2	
03b	0,015	0,001	-14,931	E	0,016	0,015		Wet chemistry EN196-2	
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	1,740	0,000	6,625	E	1,740	1,740		Wet chemistry EN196-2	
12									
13									
14									
15	1,140	0,014	-0,875		1,130	1,150		XRF (Pellet) info only	WDXRF (pp) S-Kbs-Line
16	1,250	0,014	0,500		1,240	1,260	ISO 17025	Wet chemistry EN196-2	
18									
19									
20	1,205	0,021	-0,062		1,220	1,190		Wet chemistry EN196-2	
21									
22									
23									
25									
26	3,771	0,001	32,006	E	3,771	3,770		Wet chemistry EN196-2	
27	1,285	0,021	0,938		1,270	1,300		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33	1,095	0,007	-1,437		1,090	1,100	ISO 17025	Wet chemistry EN196-2	
34									
37									
38	3,580	0,000	29,625	E	3,580	3,580		Wet chemistry EN196-2	
39									

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,244 % TM**
Measurand:	**Sulfide expressed as S**	**Repeatability s.d.:**	**0,006 % TM**
Mean ± U(Mean):	**0,737 ± 0,249 % TM**	**Range of tolerance:**	**0,249 - 1,225 % TM (|z-score| <= 2,00)**
No. of laboratories:	**6**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,737 % TM (Empirical value)**	**Target s.d.:**	**0,244 % TM (Empirical value)**



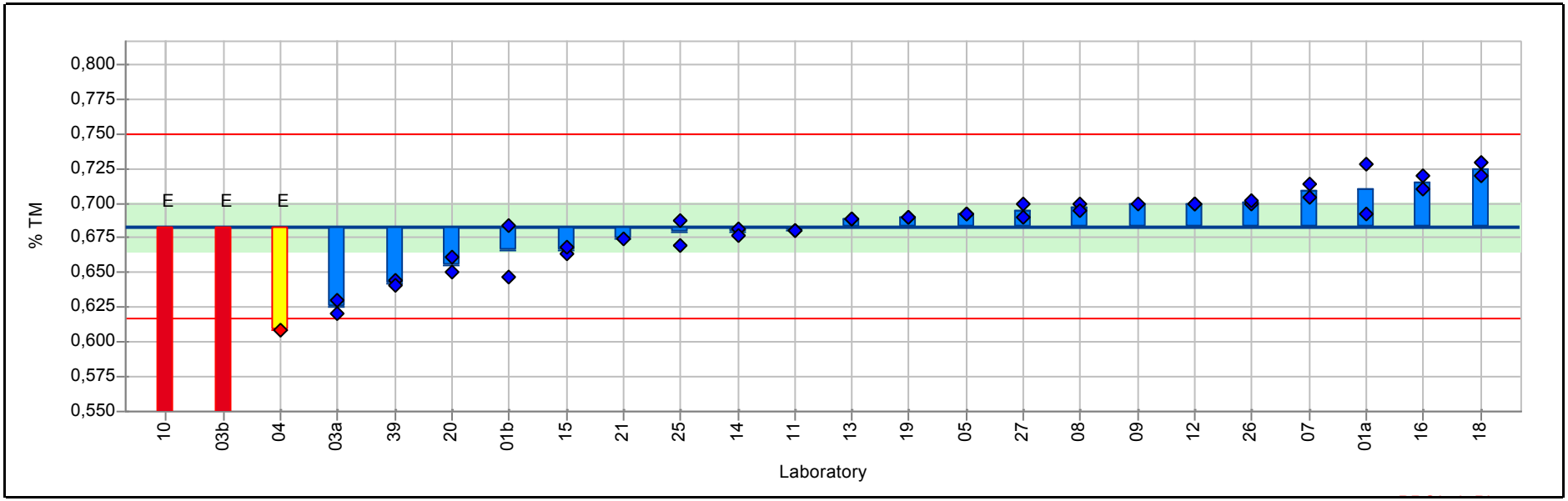
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a									
03b									
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	0,710	0,000	-0,110		0,710	0,710		Wet chemistry EN196-2	
12									
13									
14									
15	1,492		3,093	E	1,492			XRF (Pellet) info only	WDXRF (pp) S-Ka (Kbs-
16	0,605	0,007	-0,541		0,600	0,610	ISO 17025	Wet chemistry EN196-2	
18									
19	0,926	0,000	0,774		0,926	0,926	ISO 17025	Wet chemistry EN196-2	
20	0,940	0,028	0,832		0,960	0,920		Wet chemistry EN196-2	
21									
22									
23									
25									
26	0,076	0,001	-2,708	E	0,077	0,075		Wet chemistry EN196-2	
27	0,870	0,000	0,545		0,870	0,870		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39									

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,033 % TM**
Measurand:	**TiO2**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**0,683 ± 0,018 % TM**	**Range of tolerance:**	**0,616 - 0,750 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,683 % TM (Empirical value)**	**Target s.d.:**	**0,033 % TM (Empirical value)**



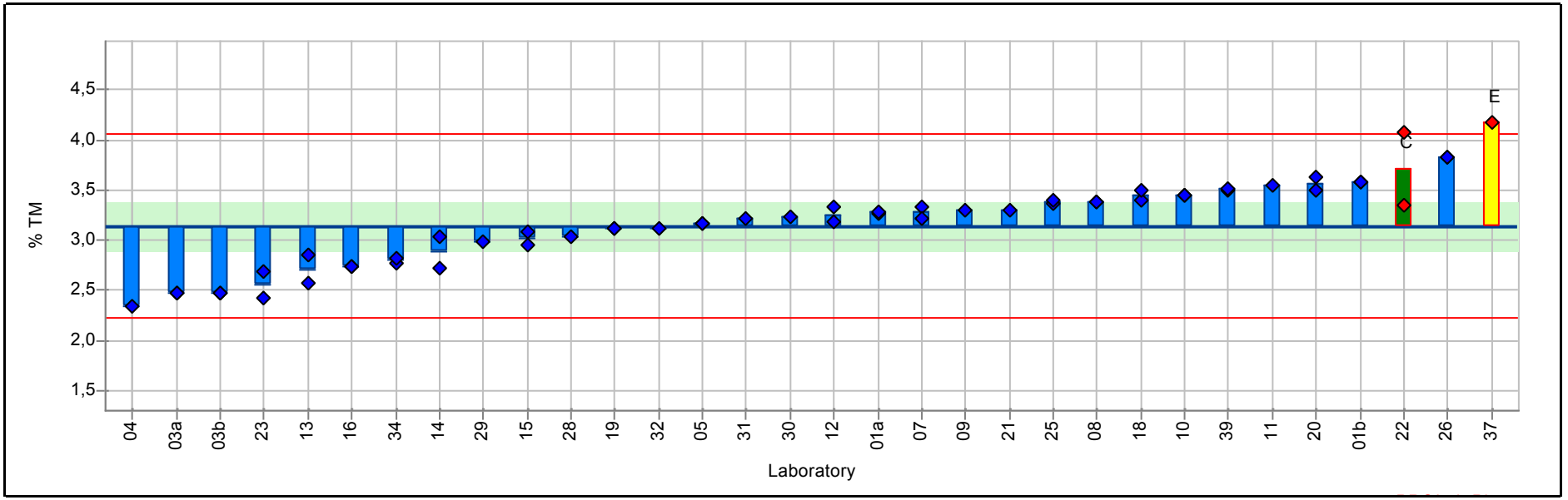
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,710	0,025	0,800		0,728	0,692		XRF (fusion)	Reconstitution Method
01b	0,665	0,026	-0,532		0,684	0,647		Standardless info only	fusion
03a	0,625	0,007	-1,744		0,630	0,620		ICP-OES	ASTM D 6357
03b	0,520	0,000	-4,885	E	0,520	0,520		XRF (fusion)	ASTM D 4326
04	0,608		-2,252	E	0,608			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,692	0,000	0,274		0,693	0,692	ISO 17025	XRF (fusion)	
07	0,709	0,007	0,770		0,704	0,714	ISO 17025	XRF (fusion)	
08	0,697	0,003	0,407		0,699	0,695		XRF (fusion)	
09	0,700		0,500		0,700			XRF (Pellet) info only	
10	0,500	0,000	-5,484	E	0,500	0,500	ISO 17025	XRF (fusion)	
11	0,680	0,000	-0,098		0,680	0,680	ISO 17025	XRF (fusion)	
12	0,700	0,000	0,500		0,700	0,700		XRF (fusion)	
13	0,689	0,000	0,164		0,689	0,689		XRF (fusion)	
14	0,679	0,004	-0,113		0,682	0,677		XRF (fusion)	
15	0,666	0,003	-0,517		0,664	0,668		XRF (fusion)	
16	0,715	0,007	0,949		0,710	0,720		XRF (fusion)	
18	0,725	0,007	1,248		0,730	0,720		XRF (fusion)	
19	0,690	0,000	0,201		0,690	0,690		XRF (fusion)	
20	0,656	0,007	-0,825		0,651	0,661		XRF (fusion)	
21	0,674		-0,278		0,674			XRF (fusion)	
22									
23									
25	0,679	0,012	-0,143		0,687	0,670		XRF (fusion)	
26	0,701	0,001	0,530		0,700	0,702		XRF (fusion)	
27	0,695	0,007	0,351		0,700	0,690		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,643	0,002	-1,220		0,644	0,641	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,461 % TM**
Measurand:	**Total S expressed as SO3**	**Repeatability s.d.:**	**0,033 % TM**
Mean ± U(Mean):	**3,142 ± 0,235 % TM**	**Range of tolerance:**	**2,220 - 4,063 % TM (|z-score| <= 2,00)**
No. of laboratories:	**24**	**Method:**	**DIN 38402 A45**
Assigned value:	**3,142 % TM (Empirical value)**	**Target s.d.:**	**0,461 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	3,274	0,015	0,289		3,264	3,285		XRF (fusion)	Reconstitution Method
01b	3,581	0,006	0,954		3,585	3,577		Standardless info only	fusion
03a	2,475	0,007	-1,447		2,470	2,480		combustion	ASTM D 5016
03b	2,475	0,007	-1,447		2,470	2,480		combustion	
04	2,340		-1,741		2,340			XRF (fusion)	

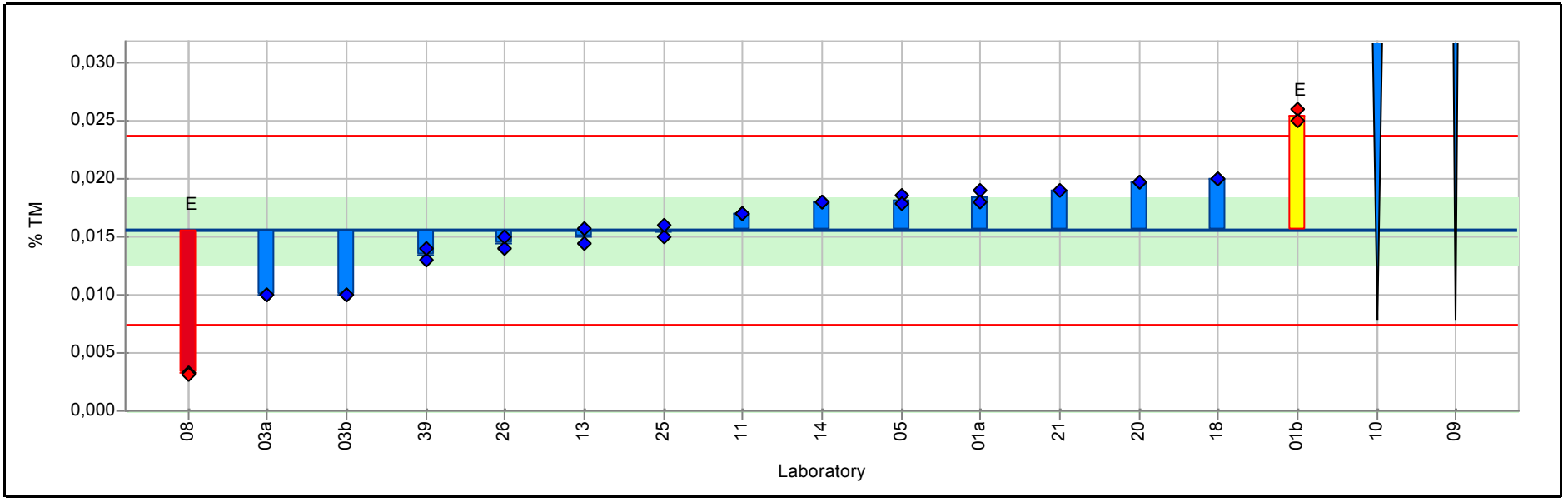
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	3,159	0,000	0,039		3,159	3,159	ISO 17025	XRF (fusion)	
07	3,276	0,077	0,293		3,331	3,222	ISO 17025	XRF (fusion)	
08	3,383	0,003	0,523		3,380	3,385		XRF (fusion)	
09	3,300		0,344		3,300			XRF (Pellet) info only	
10	3,450	0,000	0,670		3,450	3,450	ISO 17025	combustion	
11	3,540		0,865		3,540		ISO 17025	combustion	
12	3,255	0,106	0,246		3,180	3,330		XRF (fusion)	
13	2,708	0,202	-0,943		2,850	2,565		XRF (fusion)	
14	2,881	0,221	-0,567		2,724	3,037		XRF (fusion)	
15	3,016	0,088	-0,273		3,078	2,954		XRF (fusion)	
16	2,735	0,007	-0,883		2,730	2,740	ISO 17025	Wet chemistry EN196-2	
18	3,440	0,071	0,648		3,390	3,490		XRF (fusion)	
19	3,120	0,000	-0,047		3,120	3,120		XRF (fusion)	
20	3,560	0,099	0,909		3,630	3,490		combustion	With LECO instrument - S
21	3,300		0,344		3,300			XRF (fusion)	
22	3,705	0,516	1,223	C	4,070	3,340		XRF (Pellet) info only	
23	2,550	0,184	-1,285		2,420	2,680		XRF (fusion)	
25	3,381	0,014	0,520		3,371	3,391		combustion	
26	3,832	0,002	1,498		3,830	3,833		XRF (fusion)	
27									
28	3,030		-0,242		3,030			XRF (Pellet) info only	
29	2,985		-0,340		2,985			XRF (Pellet) info only	
30	3,235		0,203		3,235			XRF (Pellet) info only	
31	3,220		0,170		3,220			XRF (Pellet) info only	
32	3,125		-0,036		3,125			XRF (Pellet) info only	
33									
34	2,795	0,035	-0,753		2,770	2,820		XRF (fusion)	
37	4,180		2,255	E	4,180			XRF (fusion)	
38									
39	3,510	0,014	0,800		3,500	3,520	ISO 17025	combustion	Leco DIN 51085

RV113

<0,050 (QL)

Sample:	**FLX-CRM 116**	**Reproducibility s.d.:**	**0,004 % TM**
Measurand:	**ZnO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,016 ± 0,003 % TM**	**Range of tolerance:**	**0,007 - 0,024 % TM (|z-score| <= 2,00)**
No. of laboratories:	**13**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,016 % TM (Empirical value)**	**Target s.d.:**	**0,004 % TM (Empirical value)**



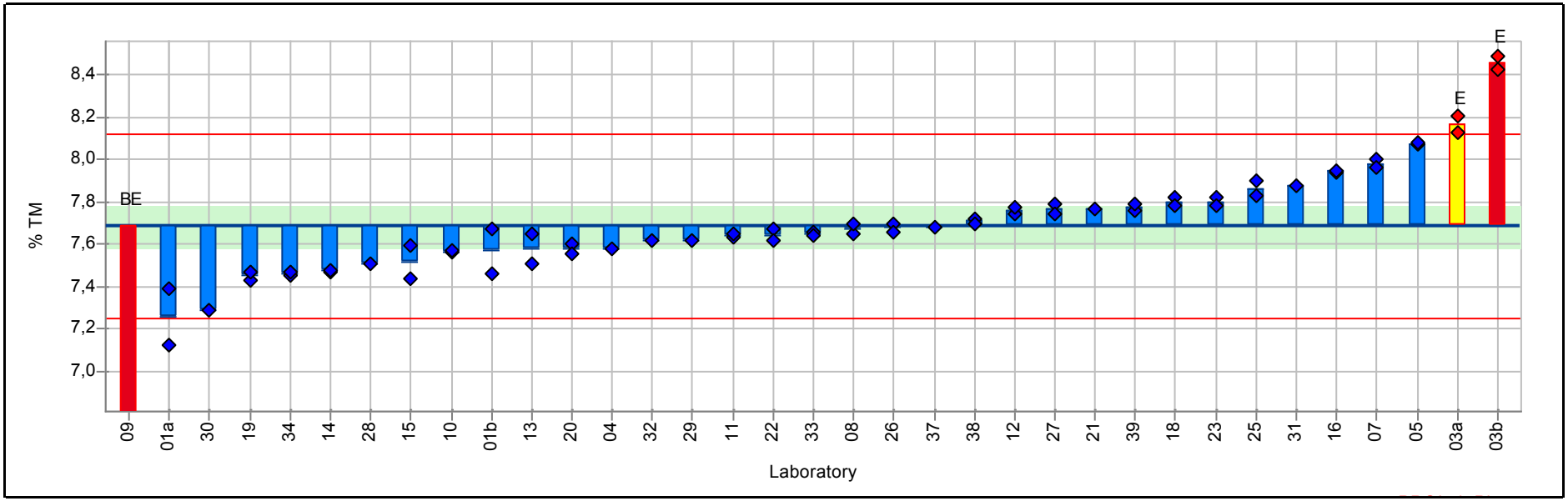
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,018	0,001	0,705		0,019	0,018		XRF (fusion)	Reconstitution Method
01b	0,026	0,001	2,424	E	0,026	0,025		Standardless info only	fusion
03a	0,010	0,000	-1,382		0,010	0,010		ICP-OES	ASTM D 6357
03b	0,010	0,000	-1,382		0,010	0,010		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,018	0,001	0,631		0,019	0,018	ISO 17025	XRF (fusion)	
07									
08	0,003	0,000	-3,041	E	0,003	0,003		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,050	<0,050		ICP-OES	
11	0,017	0,000	0,337		0,017	0,017	ISO 17025	XRF (fusion)	
12									
13	0,015	0,001	-0,140		0,014	0,016		XRF (fusion)	
14	0,018	0,000	0,582		0,018	0,018		XRF (fusion)	
15									
16									
18	0,020	0,000	1,074		0,020	0,020		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,020	0,000	1,005		0,020	0,020		XRF (fusion)	
21	0,019		0,828		0,019			XRF (fusion)	
22									
23									
25	0,015	0,001	-0,031		0,015	0,016		XRF (Pellet) info only	XRF pressed pellet
26	0,014	0,001	-0,277		0,014	0,015		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,013	0,001	-0,523		0,013	0,014	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,219 % TM**
Measurand:	**Al2O3**	**Repeatability s.d.:**	**0,042 % TM**
Mean ± U(Mean):	**7,684 ± 0,095 % TM**	**Range of tolerance:**	**7,246 - 8,123 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**7,684 % TM (Empirical value)**	**Target s.d.:**	**0,219 % TM (Empirical value)**



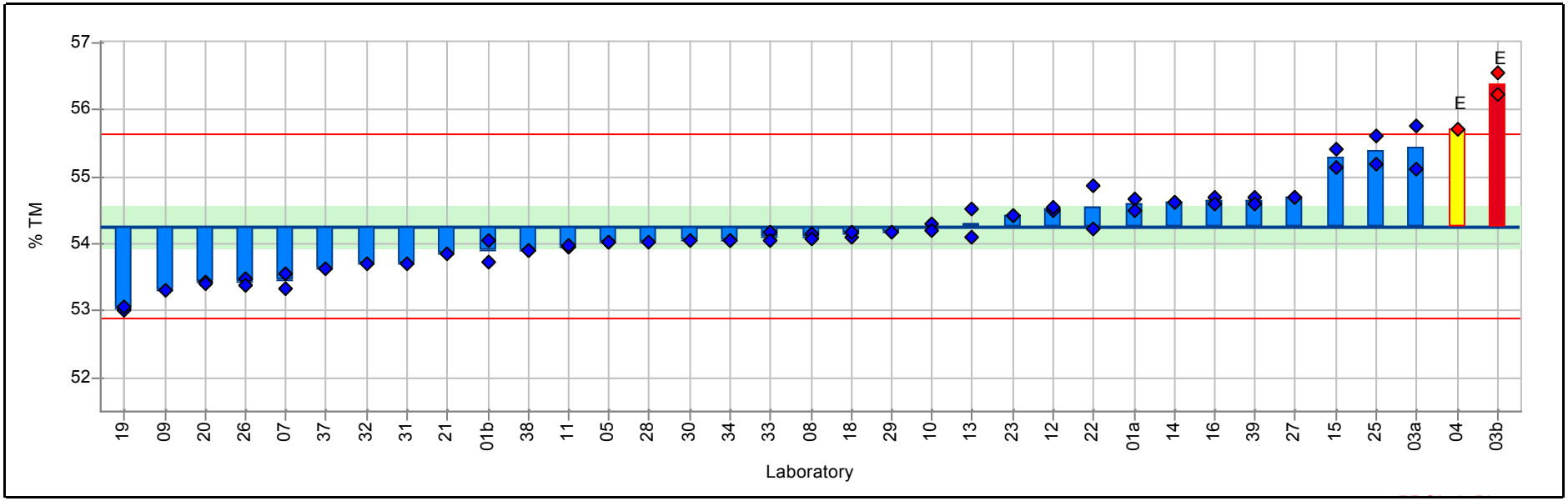
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	7,254	0,187	-1,967		7,386	7,121		XRF (fusion)	Reconstitution Method
01b	7,568	0,147	-0,532		7,672	7,464		Standardless info only	fusion
03a	8,170	0,057	2,215	E	8,130	8,210		ICP-OES	ASTM D 6357
03b	8,460	0,042	3,538	E	8,490	8,430		XRF (fusion)	ASTM D 4326
04	7,580		-0,477		7,580			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	8,076	0,006	1,785		8,072	8,080	ISO 17025	XRF (fusion)	
07	7,981	0,028	1,351		8,000	7,961	ISO 17025	XRF (fusion)	
08	7,673	0,034	-0,053		7,649	7,697		XRF (fusion)	
09	6,400		-5,861	BE	6,400			XRF (Pellet) info only	
10	7,565	0,007	-0,545		7,560	7,570	ISO 17025	XRF (fusion)	
11	7,640	0,014	-0,203		7,630	7,650	ISO 17025	XRF (fusion)	
12	7,759	0,019	0,342		7,746	7,773		XRF (fusion)	
13	7,579	0,095	-0,484		7,511	7,646		XRF (fusion)	
14	7,473	0,004	-0,967		7,470	7,475		XRF (fusion)	
15	7,514	0,110	-0,778		7,592	7,436		XRF (fusion)	
16	7,945	0,007	1,189		7,940	7,950	ISO 17025	XRF (fusion)	
18	7,800	0,028	0,527		7,820	7,780		XRF (fusion)	
19	7,450	0,028	-1,070		7,430	7,470	ISO 17025	XRF (fusion)	
20	7,580	0,035	-0,479		7,604	7,555		XRF (fusion)	
21	7,770		0,390		7,770			XRF (fusion)	
22	7,645	0,035	-0,180		7,670	7,620		XRF (fusion)	
23	7,800	0,028	0,527		7,820	7,780		XRF (fusion)	
25	7,863	0,048	0,814		7,829	7,897		XRF (fusion)	
26	7,680	0,028	-0,021		7,700	7,660		XRF (fusion)	
27	7,765	0,035	0,367		7,790	7,740		XRF (fusion)	
28	7,510		-0,796		7,510			XRF (fusion)	
29	7,620		-0,294		7,620			XRF (fusion)	
30	7,285		-1,823		7,285			XRF (fusion)	
31	7,875		0,869		7,875			XRF (fusion)	
32	7,615		-0,317		7,615			XRF (fusion)	
33	7,650	0,014	-0,157		7,660	7,640	ISO 17025	XRF (fusion)	
34	7,460	0,014	-1,024		7,450	7,470		XRF (fusion)	
37	7,680		-0,021		7,680			XRF (fusion)	
38	7,710	0,014	0,116		7,720	7,700		XRF (fusion)	
39	7,775	0,021	0,413		7,760	7,790	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,690 % TM**
Measurand:	**CaO**	**Repeatability s.d.:**	**0,100 % TM**
Mean ± U(Mean):	**54,262 ± 0,300 % TM**	**Range of tolerance:**	**52,882 - 55,642 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**54,262 % TM (Empirical value)**	**Target s.d.:**	**0,690 % TM (Empirical value)**



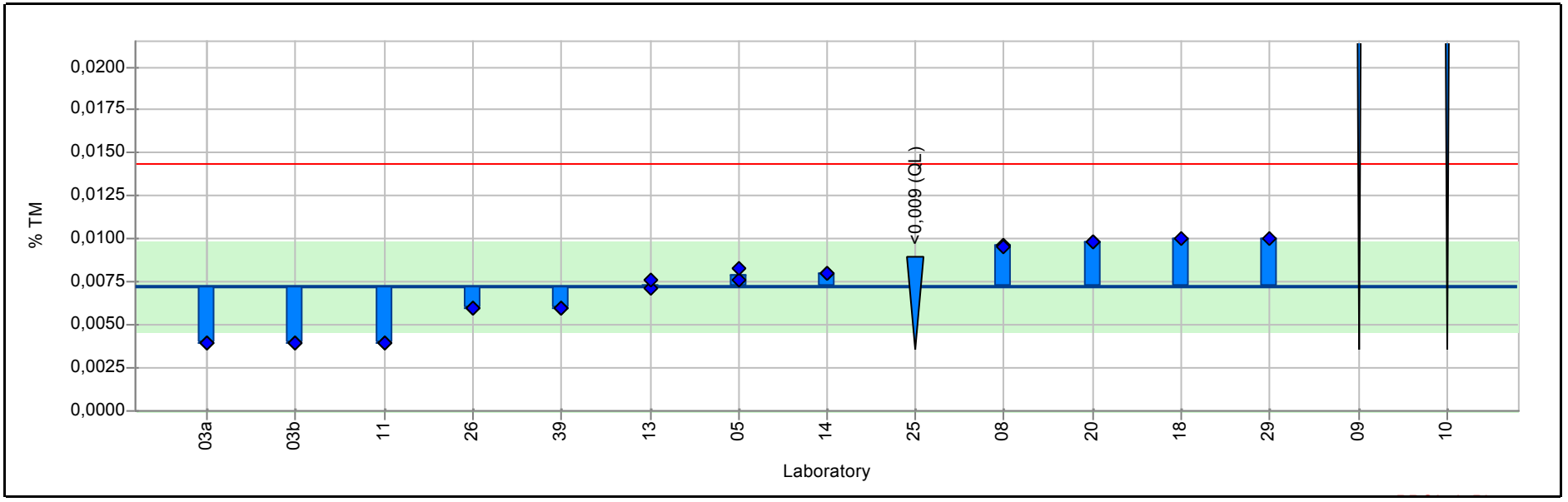
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	54,589	0,124	0,474		54,677	54,501		XRF (fusion)	Reconstitution Method
01b	53,892	0,228	-0,535		53,731	54,054		Standardless info only	fusion
03a	55,430	0,453	1,693		55,750	55,110		ICP-OES	ASTM D 6357
03b	56,385	0,233	3,077	E	56,550	56,220		XRF (fusion)	ASTM D 4326
04	55,700		2,085	E	55,700			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	54,025	0,014	-0,343		54,035	54,015	ISO 17025	XRF (fusion)	
07	53,448	0,158	-1,179		53,560	53,336	ISO 17025	XRF (fusion)	
08	54,112	0,049	-0,217		54,147	54,077		XRF (fusion)	
09	53,300		-1,394		53,300			XRF (Pellet) info only	
10	54,250	0,071	-0,017		54,300	54,200	ISO 17025	XRF (fusion)	
11	53,960	0,028	-0,437		53,940	53,980	ISO 17025	XRF (fusion)	
12	54,525	0,035	0,382		54,501	54,550		XRF (fusion)	
13	54,300	0,297	0,056		54,090	54,510		XRF (fusion)	
14	54,618	0,011	0,516		54,626	54,610		XRF (fusion)	
15	55,286	0,188	1,484		55,419	55,152		XRF (fusion)	
16	54,650	0,071	0,563		54,700	54,600	ISO 17025	XRF (fusion)	
18	54,145	0,049	-0,169		54,110	54,180		XRF (fusion)	
19	53,025	0,035	-1,792		53,000	53,050	ISO 17025	XRF (fusion)	
20	53,421	0,021	-1,218		53,436	53,407		XRF (fusion)	
21	53,850		-0,597		53,850			XRF (fusion)	
22	54,550	0,453	0,418		54,870	54,230		XRF (fusion)	
23	54,430	0,000	0,244		54,430	54,430		XRF (fusion)	
25	55,397	0,294	1,645		55,189	55,605		XRF (fusion)	
26	53,430	0,075	-1,205		53,483	53,377		XRF (fusion)	
27	54,695	0,007	0,628		54,700	54,690		XRF (fusion)	
28	54,030		-0,336		54,030			XRF (fusion)	
29	54,175		-0,126		54,175			XRF (fusion)	
30	54,040		-0,321		54,040			XRF (fusion)	
31	53,715		-0,792		53,715			XRF (fusion)	
32	53,695		-0,821		53,695			XRF (fusion)	
33	54,110	0,099	-0,220		54,180	54,040	ISO 17025	XRF (fusion)	
34	54,050	0,014	-0,307		54,040	54,060		XRF (fusion)	
37	53,620		-0,930		53,620			XRF (fusion)	
38	53,905	0,007	-0,517		53,910	53,900		XRF (fusion)	
39	54,650	0,071	0,563		54,700	54,600	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,004 % TM**
Measurand:	**Cr2O3**	**Repeatability s.d.:**	**0,000 % TM**
Mean ± U(Mean):	**0,007 ± 0,003 % TM**	**Range of tolerance:**	**0,000 - 0,014 % TM (|z-score| <= 2,00)**
No. of laboratories:	**12**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,007 % TM (Empirical value)**	**Target s.d.:**	**0,004 % TM (Empirical value)**



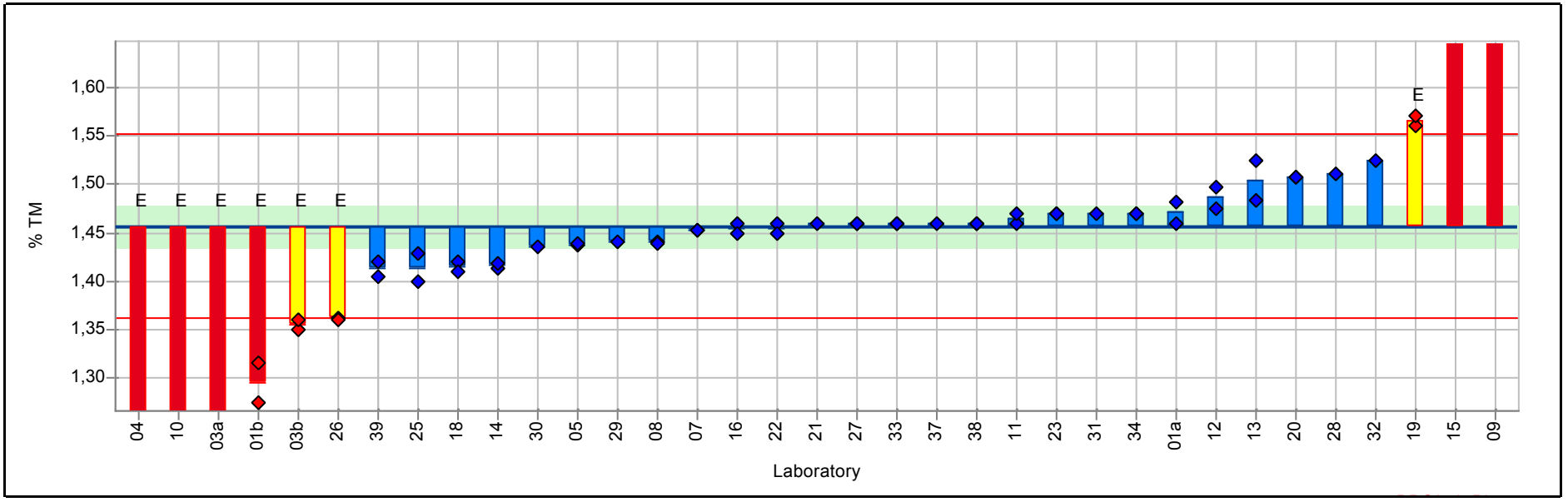
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a								XRF (fusion)	Reconstitution Method
01b									
03a	0,004	0,000	-0,905		0,004	0,004		ICP-OES	ASTM D 6357
03b	0,004	0,000	-0,905		0,004	0,004		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,008	0,001	0,202		0,008	0,008	ISO 17025	XRF (fusion)	
07									
08	0,010	0,000	0,666		0,010	0,010		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,004	0,000	-0,905		0,004	0,004	ISO 17025	XRF (fusion)	
12									
13	0,007	0,000	0,029		0,007	0,008		XRF (fusion)	
14	0,008	0,000	0,216		0,008	0,008		XRF (fusion)	
15								XRF (fusion)	
16									
18	0,010		0,777		<0,010	0,010		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,010	0,000	0,735		0,010	0,010		XRF (fusion)	
21									
22									
23									
25					<0,009	<0,009		XRF (fusion)	
26	0,006	0,000	-0,344		0,006	0,006		XRF (fusion)	
27									
28									
29	0,010		0,777		0,010			XRF (fusion)	
30									
31									
32									
33									
34									
37									
38									
39	0,006	0,000	-0,344		0,006	0,006	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,048 % TM**
Measurand:	**Fe2O3**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**1,457 ± 0,021 % TM**	**Range of tolerance:**	**1,361 - 1,552 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,457 % TM (Empirical value)**	**Target s.d.:**	**0,048 % TM (Empirical value)**



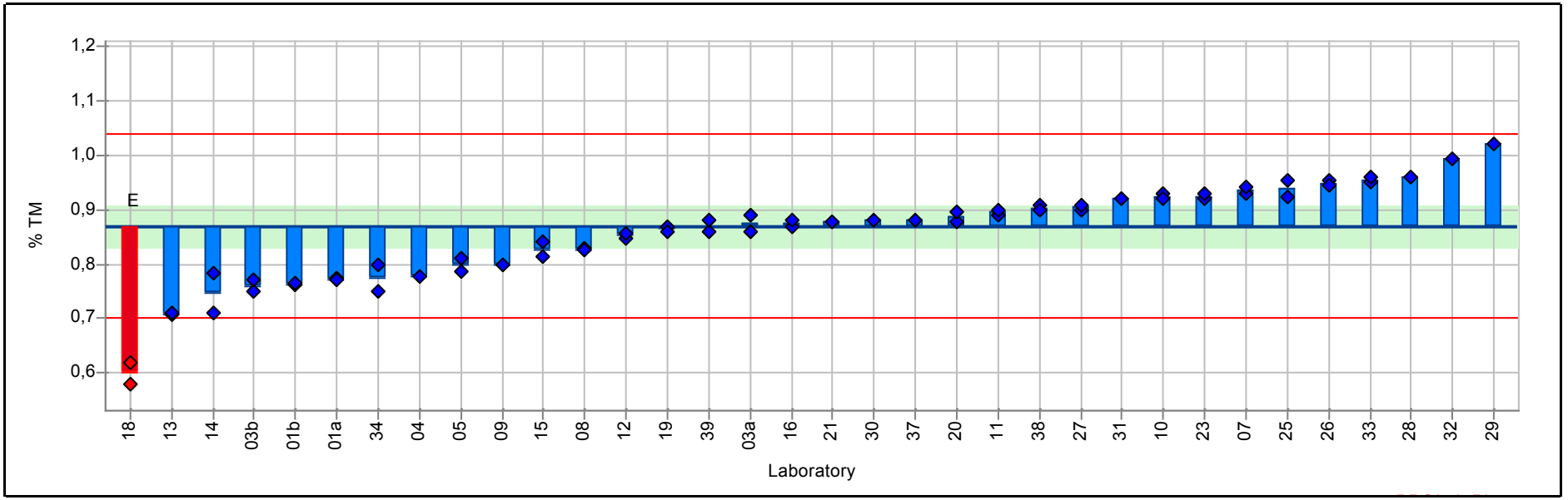
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	1,471	0,016	0,296		1,460	1,482		XRF (fusion)	Reconstitution Method
01b	1,295	0,028	-3,389	E	1,275	1,315		Standardless info only	fusion
03a	1,190	0,099	-5,588	E	1,260	1,120		ICP-OES	ASTM D 6357
03b	1,355	0,007	-2,133	E	1,350	1,360		XRF (fusion)	ASTM D 4326
04	1,085		-7,786	E	1,085			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	1,438	0,001	-0,403		1,437	1,438	ISO 17025	XRF (fusion)	
07	1,452	0,000	-0,102		1,452	1,452	ISO 17025	XRF (fusion)	
08	1,440	0,001	-0,352		1,441	1,439		XRF (fusion)	
09	1,700		5,090	E	1,700			XRF (Pellet) info only	
10	1,100	0,000	-7,472	E	1,100	1,100	ISO 17025	XRF (fusion)	
11	1,465	0,007	0,170		1,460	1,470	ISO 17025	XRF (fusion)	
12	1,486	0,015	0,611		1,475	1,497		XRF (fusion)	
13	1,504	0,029	0,997		1,484	1,525		XRF (fusion)	
14	1,416	0,004	-0,856		1,413	1,419		XRF (fusion)	
15	1,699	0,013	5,062	E	1,708	1,689		XRF (fusion)	
16	1,455	0,007	-0,039		1,460	1,450	ISO 17025	XRF (fusion)	
18	1,415	0,007	-0,877		1,420	1,410		XRF (fusion)	
19	1,565	0,007	2,264	E	1,560	1,570	ISO 17025	XRF (fusion)	
20	1,507	0,000	1,051		1,507	1,507		XRF (fusion)	
21	1,460		0,066		1,460			XRF (fusion)	
22	1,455	0,007	-0,039		1,460	1,450		XRF (fusion)	
23	1,470	0,000	0,275		1,470	1,470		XRF (fusion)	
25	1,413	0,021	-0,908		1,399	1,428		XRF (fusion)	
26	1,361	0,001	-2,007	E	1,362	1,360		XRF (fusion)	
27	1,460	0,000	0,066		1,460	1,460		XRF (fusion)	
28	1,510		1,112		1,510			XRF (fusion)	
29	1,440		-0,353		1,440			XRF (fusion)	
30	1,435		-0,458		1,435			XRF (fusion)	
31	1,470		0,275		1,470			XRF (fusion)	
32	1,525		1,426		1,525			XRF (fusion)	
33	1,460	0,000	0,066		1,460	1,460	ISO 17025	XRF (fusion)	
34	1,470	0,000	0,275		1,470	1,470		XRF (fusion)	
37	1,460		0,066		1,460			XRF (fusion)	
38	1,460	0,000	0,066		1,460	1,460		XRF (fusion)	
39	1,413	0,011	-0,929		1,405	1,420	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,085 % TM**
Measurand:	**K2O**	**Repeatability s.d.:**	**0,011 % TM**
Mean ± U(Mean):	**0,871 ± 0,038 % TM**	**Range of tolerance:**	**0,701 - 1,040 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,871 % TM (Empirical value)**	**Target s.d.:**	**0,085 % TM (Empirical value)**



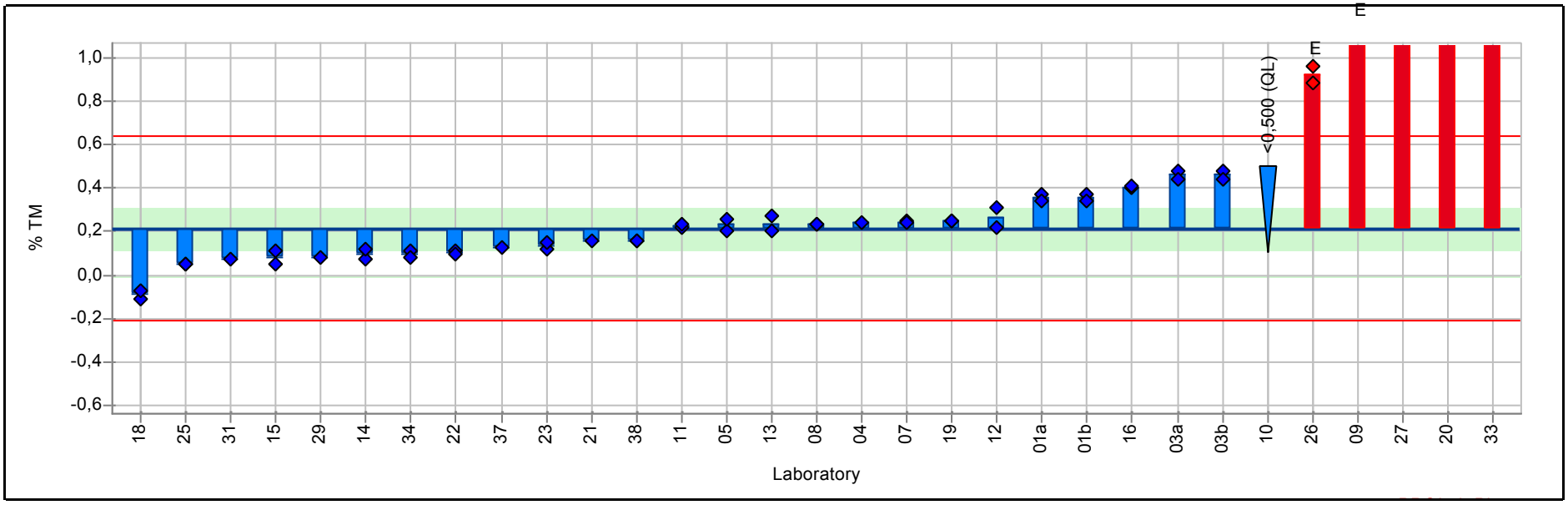
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,772	0,003	-1,160		0,774	0,770		XRF (fusion)	Reconstitution Method
01b	0,762	0,002	-1,272		0,761	0,764		Standardless info only	fusion
03a	0,875	0,021	0,053		0,890	0,860		ICP-OES	ASTM D 6357
03b	0,760	0,014	-1,302		0,750	0,770		XRF (fusion)	ASTM D 4326
04	0,779		-1,078		0,779			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,799	0,019	-0,845		0,786	0,812	ISO 17025	XRF (fusion)	
07	0,936	0,007	0,771		0,931	0,941	ISO 17025	XRF (fusion)	
08	0,828	0,002	-0,505		0,829	0,826		XRF (fusion)	
09	0,800		-0,830		0,800			XRF (Pellet) info only	
10	0,925	0,007	0,642		0,930	0,920	ISO 17025	XRF (fusion)	
11	0,895	0,007	0,288		0,890	0,900	ISO 17025	XRF (fusion)	
12	0,853	0,008	-0,209		0,847	0,858		XRF (fusion)	
13	0,708	0,002	-1,911		0,707	0,710		XRF (fusion)	
14	0,748	0,052	-1,449		0,711	0,784		XRF (fusion)	
15	0,827	0,019	-0,509		0,841	0,814		XRF (fusion)	
16	0,875	0,007	0,053		0,870	0,880	ISO 17025	XRF (fusion)	
18	0,600	0,028	-3,186	E	0,620	0,580		XRF (fusion)	
19	0,865	0,007	-0,065		0,870	0,860	ISO 17025	XRF (fusion)	
20	0,887	0,014	0,188		0,877	0,896		XRF (fusion)	
21	0,878		0,088		0,878			XRF (fusion)	
22									
23	0,925	0,007	0,642		0,920	0,930		XRF (fusion)	
25	0,939	0,021	0,801		0,924	0,953		ICP-OES	
26	0,949	0,007	0,924		0,954	0,944		XRF (fusion)	
27	0,905	0,007	0,406		0,900	0,910		XRF (fusion)	
28	0,960		1,054		0,960			XRF (fusion)	
29	1,020		1,761		1,020			XRF (fusion)	
30	0,880		0,112		0,880			XRF (fusion)	
31	0,920		0,583		0,920			XRF (fusion)	
32	0,995		1,466		0,995			XRF (fusion)	
33	0,955	0,007	0,995		0,950	0,960	ISO 17025	XRF (fusion)	
34	0,775	0,035	-1,125		0,750	0,800		XRF (fusion)	
37	0,880		0,112		0,880			XRF (fusion)	
38	0,903	0,007	0,389		0,908	0,898		XRF (fusion)	
39	0,870	0,014	-0,006		0,860	0,880	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,213 % TM**
Measurand:	**LOI (1h @ 950°C) observed**	**Repeatability s.d.:**	**0,026 % TM**
Mean ± U(Mean):	**0,215 ± 0,097 % TM**	**Range of tolerance:**	**-0,211 - 0,640 % TM (|z-score| <= 2,00)**
No. of laboratories:	**30**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,215 % TM (Empirical value)**	**Target s.d.:**	**0,213 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,356	0,018	0,664		0,369	0,343		1h@950°C	Gravimetry
01b	0,356	0,018	0,664		0,369	0,343		1h@950°C	Gravimetry
03a	0,460	0,028	1,153		0,480	0,440		1h@950°C	
03b	0,460	0,028	1,153		0,480	0,440		1h@950°C	
04	0,240		0,119		0,240			1h@950°C	

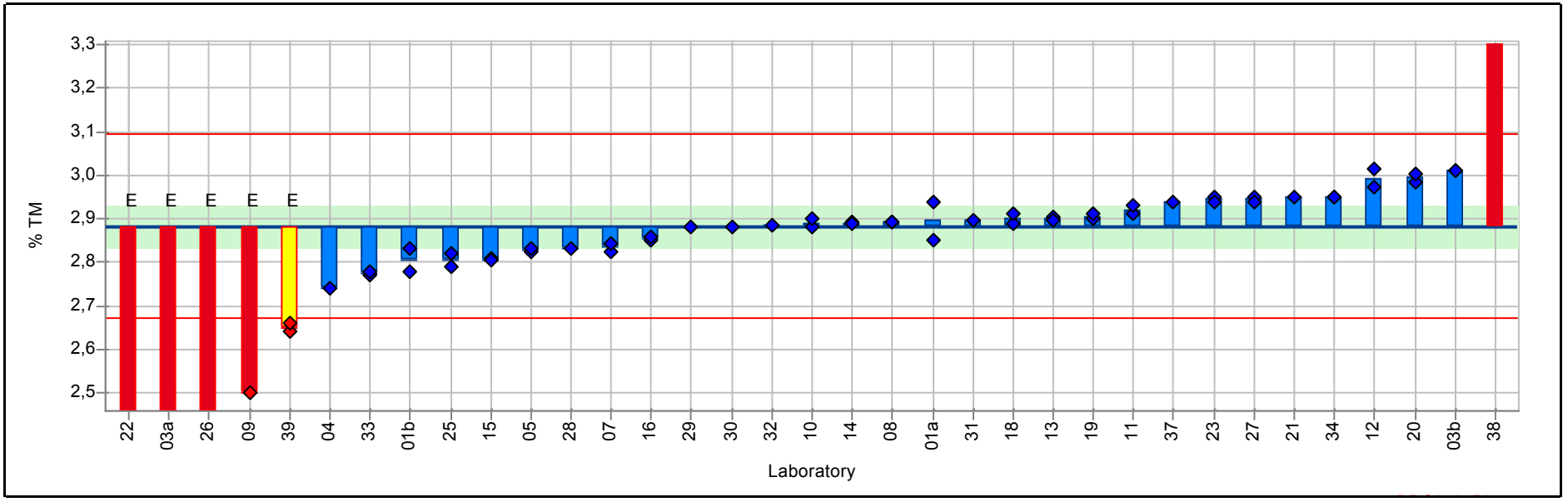
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,231	0,040	0,078		0,203	0,259	ISO 17025	DIN EN 15169	
07	0,245	0,007	0,143		0,250	0,240	ISO 17025	1h@950°C	
08	0,237	0,000	0,107		0,237	0,237		1h@950°C	
09	1,100		4,159	E	1,100		ISO 17025	DIN 51719	
10					<0,500	<0,500	ISO 17025	1h@950°C	Thermogravimetric analyzer
11	0,225	0,007	0,049		0,220	0,230	ISO 17025	Wet chemistry EN196-2	
12	0,265	0,063	0,234		0,309	0,220		1h@950°C	
13	0,235	0,049	0,096		0,200	0,270		1h@950°C	gravimetric
14	0,095	0,035	-0,562		0,070	0,120		1h@950°C	
15	0,080	0,042	-0,633		0,110	0,050		1h@950°C	
16	0,405	0,007	0,894		0,400	0,410	ISO 17025	Wet chemistry EN196-2	
18	-0,090	0,028	-1,431		-0,110	-0,070		1h@950°C	
19	0,250	0,000	0,166		0,250	0,250	ISO 17025	1h@950°C	TGA - not corrected -
20	1,495	0,010	6,015	E	1,488	1,502		Wet chemistry EN196-2	
21	0,160		-0,257		0,160			1h@950°C	
22	0,105	0,007	-0,515		0,110	0,100		1h@950°C	
23	0,135	0,021	-0,374		0,120	0,150		1h@950°C	
25	0,051	0,003	-0,769		0,049	0,053		1h@950°C	
26	0,920	0,057	3,314	E	0,960	0,880		1h@950°C	
27	1,400	0,014	5,569	E	1,410	1,390		1h@950°C	
28									
29	0,080		-0,633		0,080			1h@950°C	
30									
31	0,075		-0,656		0,075			1h@950°C	
32									
33	1,634	0,011	6,668	E	1,626	1,642		1h@950°C	
34	0,095	0,021	-0,562		0,110	0,080		1h@950°C	
37	0,130		-0,398		0,130			1h@950°C	
38	0,160	0,000	-0,257		0,160	0,160		1h@950°C	
39									

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,106 % TM**
Measurand:	**MgO**	**Repeatability s.d.:**	**0,019 % TM**
Mean ± U(Mean):	**2,883 ± 0,046 % TM**	**Range of tolerance:**	**2,671 - 3,095 % TM (|z-score| <= 2,00)**
No. of laboratories:	**33**	**Method:**	**DIN 38402 A45**
Assigned value:	**2,883 % TM (Empirical value)**	**Target s.d.:**	**0,106 % TM (Empirical value)**

E



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	2,895	0,061	0,114		2,938	2,852		XRF (fusion)	Reconstitution Method
01b	2,805	0,035	-0,734		2,830	2,780		Standardless info only	fusion
03a	2,395	0,035	-4,595	E	2,420	2,370		ICP-OES	ASTM D 6357
03b	3,010	0,000	1,197		3,010	3,010		XRF (fusion)	ASTM D 4326
04	2,740		-1,346		2,740			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	2,827	0,005	-0,529		2,823	2,830	ISO 17025	XRF (fusion)	
07	2,834	0,014	-0,461		2,824	2,844	ISO 17025	XRF (fusion)	
08	2,893	0,001	0,093		2,894	2,892		XRF (fusion)	
09	2,500		-3,606	E	2,500			XRF (Pellet) info only	
10	2,890	0,014	0,067		2,880	2,900	ISO 17025	XRF (fusion)	
11	2,920	0,014	0,349		2,910	2,930	ISO 17025	XRF (fusion)	
12	2,992	0,030	1,028		2,971	3,013		XRF (fusion)	
13	2,901	0,004	0,165		2,903	2,898		XRF (fusion)	
14	2,890	0,004	0,067		2,893	2,887		XRF (fusion)	
15	2,806	0,002	-0,727		2,807	2,805		XRF (fusion)	
16	2,855	0,007	-0,263		2,850	2,860	ISO 17025	XRF (fusion)	
18	2,900	0,014	0,161		2,890	2,910		XRF (fusion)	
19	2,905	0,007	0,208		2,900	2,910	ISO 17025	XRF (fusion)	
20	2,994	0,014	1,050		2,985	3,004		XRF (fusion)	
21	2,950		0,632		2,950			XRF (fusion)	
22	2,140	0,057	-6,997	E	2,180	2,100		XRF (fusion)	
23	2,945	0,007	0,585		2,950	2,940		XRF (fusion)	
25	2,805	0,021	-0,729		2,791	2,820		XRF (fusion)	
26	2,455	0,004	-4,026	E	2,453	2,458		XRF (fusion)	
27	2,945	0,007	0,585		2,950	2,940		XRF (fusion)	
28	2,830		-0,499		2,830			XRF (fusion)	
29	2,880		-0,028		2,880			XRF (fusion)	
30	2,880		-0,028		2,880			XRF (fusion)	
31	2,895		0,114		2,895			XRF (fusion)	
32	2,885		0,019		2,885			XRF (fusion)	
33	2,775	0,007	-1,017		2,770	2,780	ISO 17025	XRF (fusion)	
34	2,950	0,000	0,632		2,950	2,950		XRF (fusion)	
37	2,940		0,537		2,940			XRF (fusion)	
38	3,464	0,028	5,472	E	3,484	3,444		XRF (fusion)	
39	2,650	0,014	-2,194	E	2,640	2,660	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,033 % TM**
Measurand:	**Mn2O3**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,181 ± 0,017 % TM**	**Range of tolerance:**	**0,115 - 0,246 % TM (|z-score| <= 2,00)**
No. of laboratories:	**22**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,181 % TM (Empirical value)**	**Target s.d.:**	**0,033 % TM (Empirical value)**

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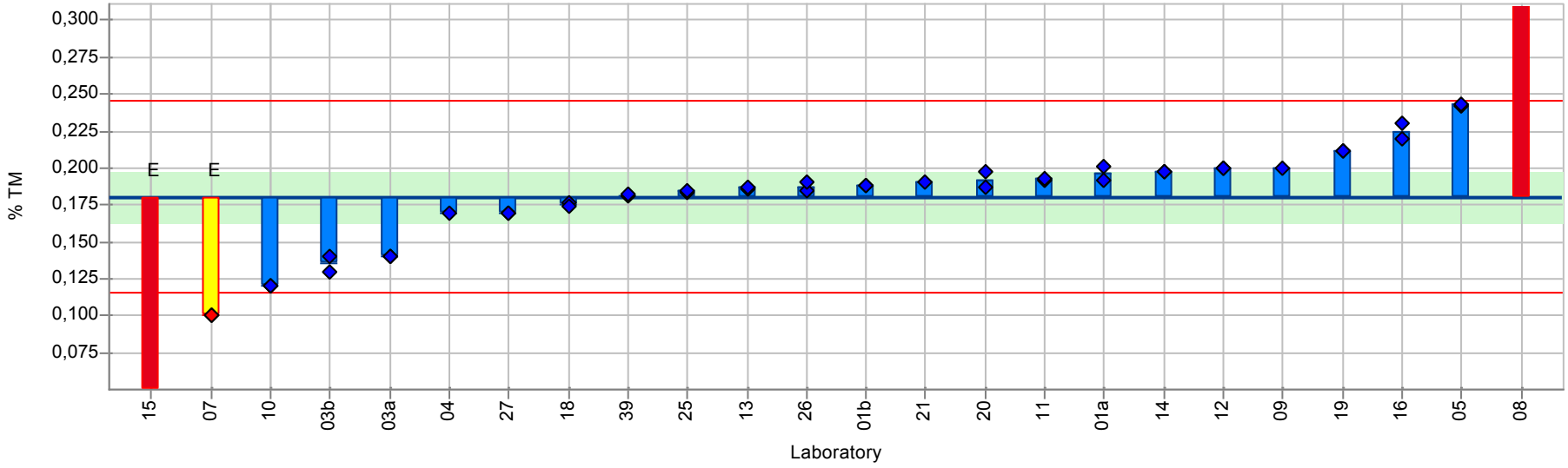


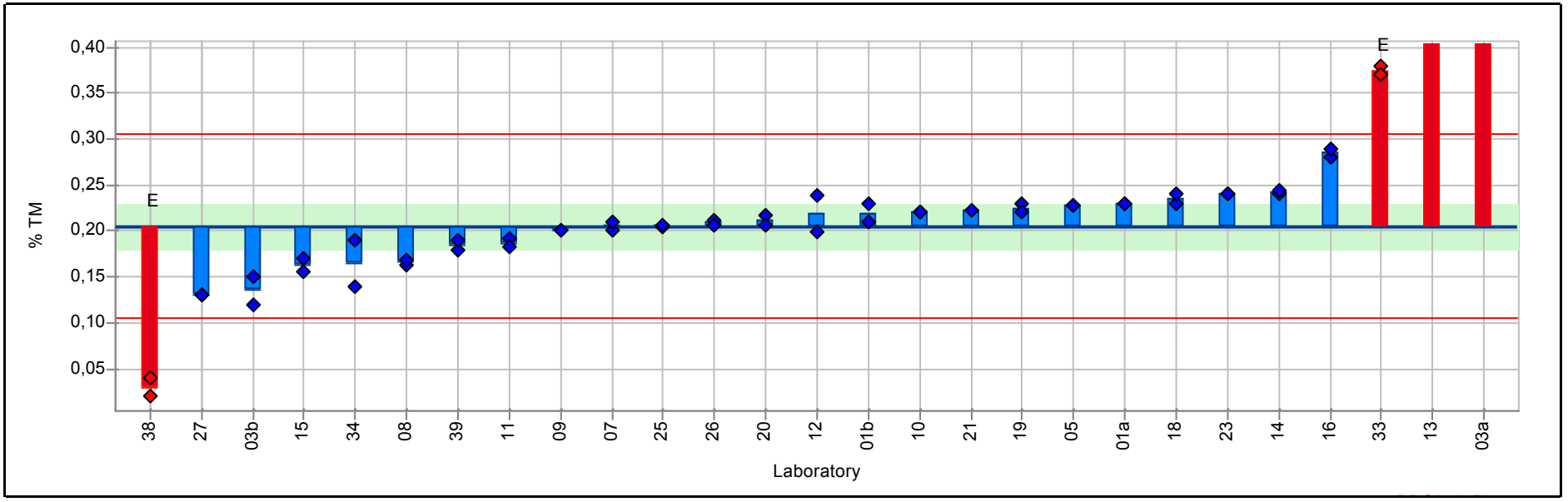
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,197	0,006	0,488		0,192	0,201		XRF (fusion)	Reconstitution Method
01b	0,188	0,000	0,227		0,188	0,188		Standardless info only	fusion
03a	0,140	0,000	-1,244		0,140	0,140		ICP-OES	ASTM D 6357
03b	0,135	0,007	-1,397		0,130	0,140		XRF (fusion)	ASTM D 4326
04	0,170		-0,324		0,170			XRF (fusion)	RS:MnO in Mn2O3

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,243	0,001	1,908		0,242	0,243	ISO 17025	XRF (fusion)	
07	0,100	0,000	-2,470	E	0,100	0,100		XRF (fusion)	
08	0,382	0,001	6,169	E	0,383	0,381		XRF (fusion)	
09	0,200		0,595		0,200			XRF (Pellet) info only	
10	0,120	0,000	-1,857		0,120	0,120	ISO 17025	XRF (fusion)	
11	0,193	0,001	0,365		0,192	0,193	ISO 17025	XRF (fusion)	
12	0,199	0,000	0,579		0,199	0,200		XRF (fusion)	
13	0,187	0,001	0,187		0,186	0,188		XRF (fusion)	
14	0,197	0,000	0,503		0,197	0,197		XRF (fusion)	
15	0,050	0,000	-4,003	E	0,050	0,050		XRF (fusion)	
16	0,225	0,007	1,361		0,230	0,220	ISO 17025	XRF (fusion)	
18	0,175	0,001	-0,171		0,176	0,174		XRF (fusion)	
19	0,211	0,000	0,945		0,211	0,211		XRF (fusion)	
20	0,192	0,007	0,352		0,187	0,197		XRF (fusion)	
21	0,191		0,319		0,191			XRF (fusion)	
22									
23									
25	0,184	0,001	0,120		0,184	0,185		XRF (fusion)	
26	0,188	0,004	0,212		0,185	0,190		XRF (fusion)	
27	0,170	0,000	-0,324		0,170	0,170		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,181	0,001	0,028		0,181	0,182	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,050 % TM**
Measurand:	**Na2O**	**Repeatability s.d.:**	**0,009 % TM**
Mean ± U(Mean):	**0,205 ± 0,025 % TM**	**Range of tolerance:**	**0,105 - 0,306 % TM (|z-score| <= 2,00)**
No. of laboratories:	**25**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,205 % TM (Empirical value)**	**Target s.d.:**	**0,050 % TM (Empirical value)**



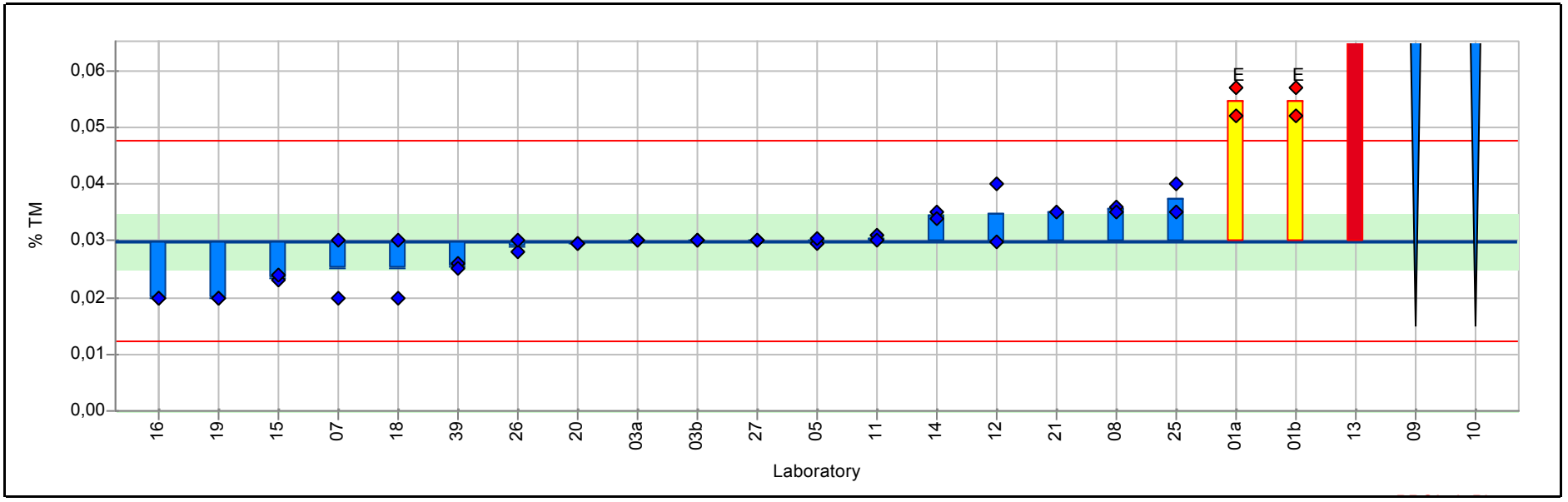
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,230	0,000	0,489		0,230	0,230		XRF (fusion)	
01b	0,220	0,015	0,281		0,209	0,230		Standardless info only	fusion
03a	0,585	0,049	7,538	E	0,550	0,620		ICP-OES	ASTM D 6357
03b	0,135	0,021	-1,397		0,150	0,120		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,228	0,001	0,448		0,227	0,228	ISO 17025	XRF (fusion)	
07	0,206	0,006	0,003		0,201	0,210	ISO 17025	ICP-OES	
08	0,166	0,004	-0,780		0,163	0,169		XRF (fusion)	
09	0,200		-0,107		0,200			XRF (Pellet) info only	
10	0,220	0,000	0,290		0,220	0,220		ICP-OES	
11	0,187	0,007	-0,365		0,192	0,182	ISO 17025	XRF (fusion)	
12	0,219	0,028	0,279		0,239	0,200		XRF (fusion)	
13	0,544	0,027	6,724	E	0,525	0,563		XRF (fusion)	
14	0,242	0,002	0,737		0,241	0,244		XRF (fusion)	
15	0,163	0,010	-0,844		0,156	0,170		XRF (fusion)	
16	0,285	0,007	1,581		0,280	0,290	ISO 17025	XRF (fusion)	
18	0,235	0,007	0,588		0,230	0,240		XRF (fusion)	
19	0,225	0,007	0,390		0,230	0,220		XRF (fusion)	
20	0,212	0,007	0,127		0,217	0,207		XRF (fusion)	
21	0,223		0,350		0,223			XRF (fusion)	
22									
23	0,240	0,000	0,688		0,240	0,240		XRF (fusion)	
25	0,206	0,001	0,012		0,205	0,207		ICP-OES	
26	0,209	0,003	0,072		0,211	0,207		XRF (fusion)	
27	0,130	0,000	-1,497		0,130	0,130		XRF (fusion)	
28									
29									
30									
31									
32									
33	0,375	0,007	3,368	E	0,380	0,370	ISO 17025	XRF (fusion)	
34	0,165	0,035	-0,802		0,190	0,140		XRF (fusion)	
37									
38	0,030	0,014	-3,484	E	0,040	0,020		XRF (fusion)	
39	0,185	0,007	-0,405		0,180	0,190	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,009 % TM**
Measurand:	**P2O5**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,030 ± 0,005 % TM**	**Range of tolerance:**	**0,012 - 0,048 % TM (|z-score| <= 2,00)**
No. of laboratories:	**20**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,030 % TM (Empirical value)**	**Target s.d.:**	**0,009 % TM (Empirical value)**



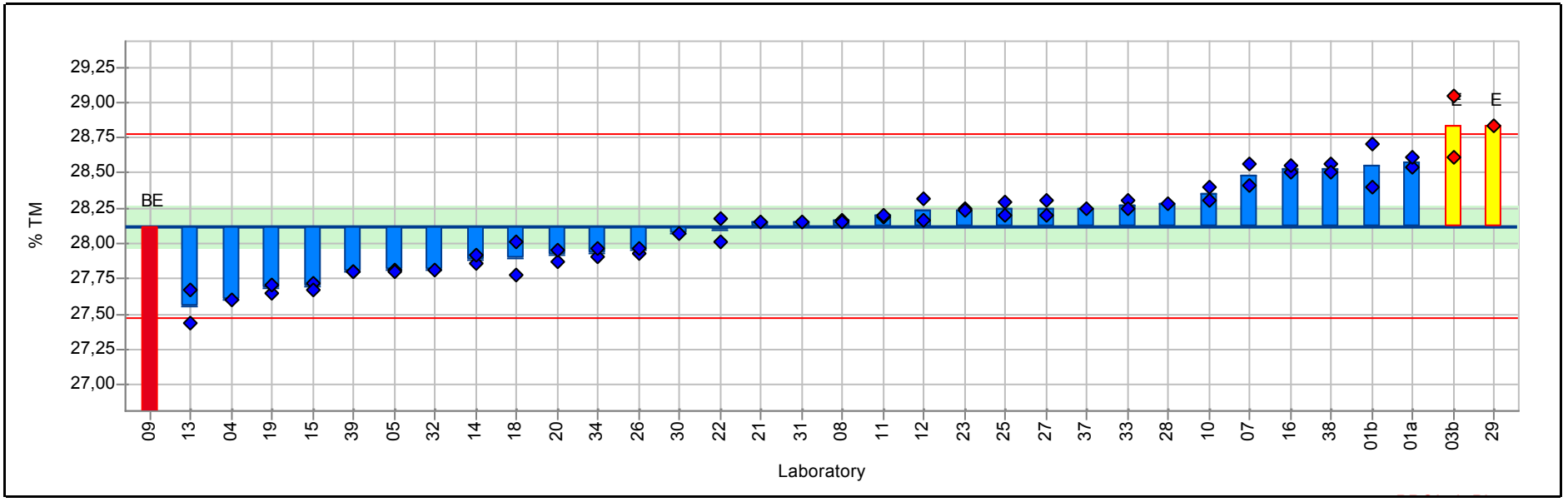
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,054	0,004	2,790	E	0,052	0,057		XRF (fusion)	
01b	0,054	0,004	2,790	E	0,052	0,057		Standardless info only	fusion
03a	0,030	0,000	0,008		0,030	0,030		ICP-OES	ASTM D 6357
03b	0,030	0,000	0,008		0,030	0,030		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,030	0,001	0,011		0,030	0,030	ISO 17025	XRF (fusion)	
07	0,025	0,007	-0,560		0,020	0,030	ISO 17025	XRF (fusion)	
08	0,036	0,001	0,640		0,036	0,035		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,100	<0,100	ISO 17025	XRF (fusion)	
11	0,030	0,001	0,065		0,031	0,030	ISO 17025	XRF (fusion)	
12	0,035	0,007	0,565		0,030	0,040		XRF (fusion)	
13	0,081	0,011	5,823	E	0,073	0,089		XRF (fusion)	
14	0,035	0,001	0,519		0,035	0,034		XRF (fusion)	
15	0,023	0,001	-0,732		0,023	0,024		XRF (fusion)	
16	0,020	0,000	-1,128		0,020	0,020	ISO 17025	XRF (fusion)	
18	0,025	0,007	-0,560		0,030	0,020		XRF (fusion)	
19	0,020	0,000	-1,128		0,020	0,020		XRF (fusion)	
20	0,030	0,000	-0,043		0,030	0,030		XRF (fusion)	
21	0,035		0,576		0,035			XRF (fusion)	
22									
23									
25	0,038	0,004	0,860		0,035	0,040		XRF (fusion)	
26	0,029	0,001	-0,106		0,028	0,030		XRF (fusion)	
27	0,030	0,000	0,008		0,030	0,030		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,026	0,001	-0,503		0,026	0,025	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,328 % TM**
Measurand:	**SiO2**	**Repeatability s.d.:**	**0,062 % TM**
Mean ± U(Mean):	**28,123 ± 0,145 % TM**	**Range of tolerance:**	**27,468 - 28,779 % TM (|z-score| <= 2,00)**
No. of laboratories:	**32**	**Method:**	**DIN 38402 A45**
Assigned value:	**28,123 % TM (Empirical value)**	**Target s.d.:**	**0,328 % TM (Empirical value)**



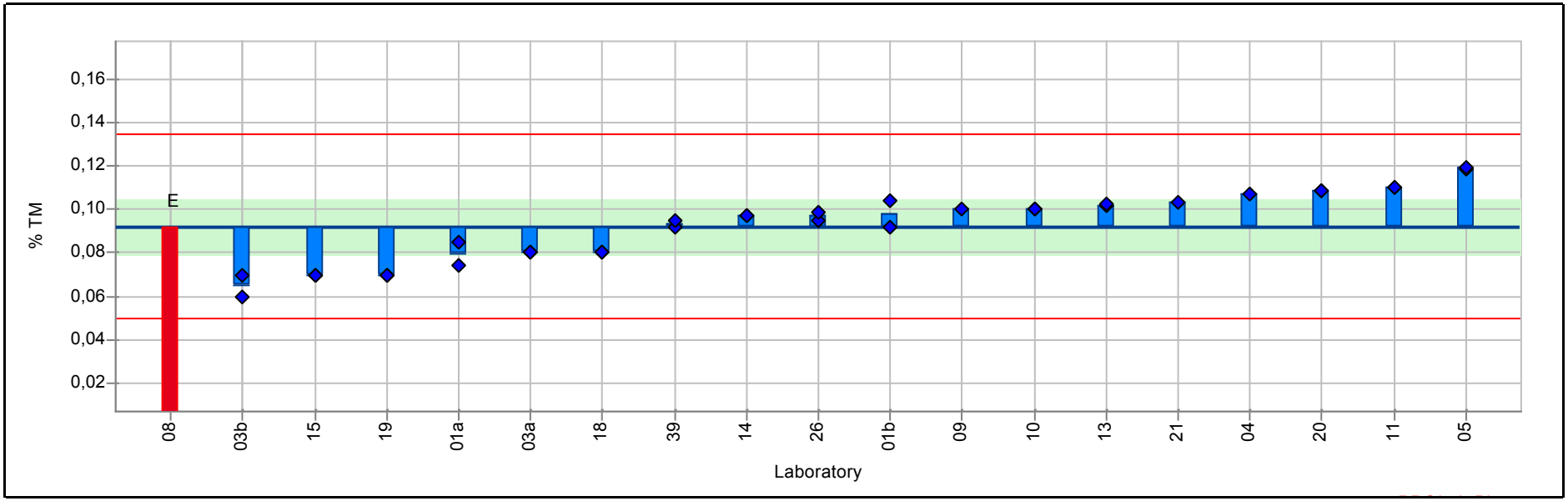
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	28,574	0,047	1,375		28,541	28,607		XRF (fusion)	Reconstitution Method
01b	28,548	0,216	1,295		28,395	28,701		Standardless info only	fusion
03a									
03b	28,830	0,311	2,155	E	28,610	29,050		XRF (fusion)	ASTM D 4326
04	27,600		-1,597		27,600			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	27,810	0,008	-0,956		27,816	27,804	ISO 17025	XRF (fusion)	
07	28,486	0,113	1,106		28,566	28,406	ISO 17025	XRF (fusion)	
08	28,163	0,007	0,119		28,168	28,157		XRF (fusion)	
09	23,900		-12,883	BE	23,900			XRF (Pellet) info only	
10	28,350	0,071	0,691		28,400	28,300	ISO 17025	XRF (fusion)	
11	28,195	0,007	0,218		28,190	28,200	ISO 17025	XRF (fusion)	
12	28,240	0,110	0,356		28,162	28,318		XRF (fusion)	
13	27,550	0,170	-1,749		27,430	27,670		XRF (fusion)	
14	27,886	0,040	-0,726		27,857	27,914		XRF (fusion)	
15	27,698	0,031	-1,298		27,719	27,676		XRF (fusion)	
16	28,525	0,035	1,225		28,500	28,550	ISO 17025	XRF (fusion)	
18	27,895	0,163	-0,697		28,010	27,780		XRF (fusion)	
19	27,680	0,042	-1,353		27,650	27,710	ISO 17025	XRF (fusion)	
20	27,915	0,056	-0,636		27,875	27,954		XRF (fusion)	
21	28,150		0,081		28,150			XRF (fusion)	
22	28,095	0,120	-0,087		28,180	28,010		XRF (fusion)	
23	28,240	0,014	0,356		28,250	28,230		XRF (fusion)	
25	28,246	0,070	0,376		28,197	28,296		XRF (fusion)	
26	27,949	0,025	-0,533		27,931	27,966		XRF (fusion)	
27	28,250	0,071	0,386		28,200	28,300		XRF (fusion)	
28	28,280		0,478		28,280			XRF (fusion)	
29	28,840		2,186	E	28,840			XRF (fusion)	
30	28,070		-0,163		28,070			XRF (fusion)	
31	28,155		0,096		28,155			XRF (fusion)	
32	27,814		-0,944		27,814			XRF (fusion)	
33	28,275	0,035	0,462		28,300	28,250	ISO 17025	XRF (fusion)	
34	27,930	0,042	-0,590		27,900	27,960		XRF (fusion)	
37	28,250		0,386		28,250			XRF (fusion)	
38	28,535	0,035	1,256		28,560	28,510		XRF (fusion)	
39	27,800	0,000	-0,986		27,800	27,800	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,021 % TM**
Measurand:	**SrO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,092 ± 0,013 % TM**	**Range of tolerance:**	**0,050 - 0,135 % TM (|z-score| <= 2,00)**
No. of laboratories:	**17**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,092 % TM (Empirical value)**	**Target s.d.:**	**0,021 % TM (Empirical value)**



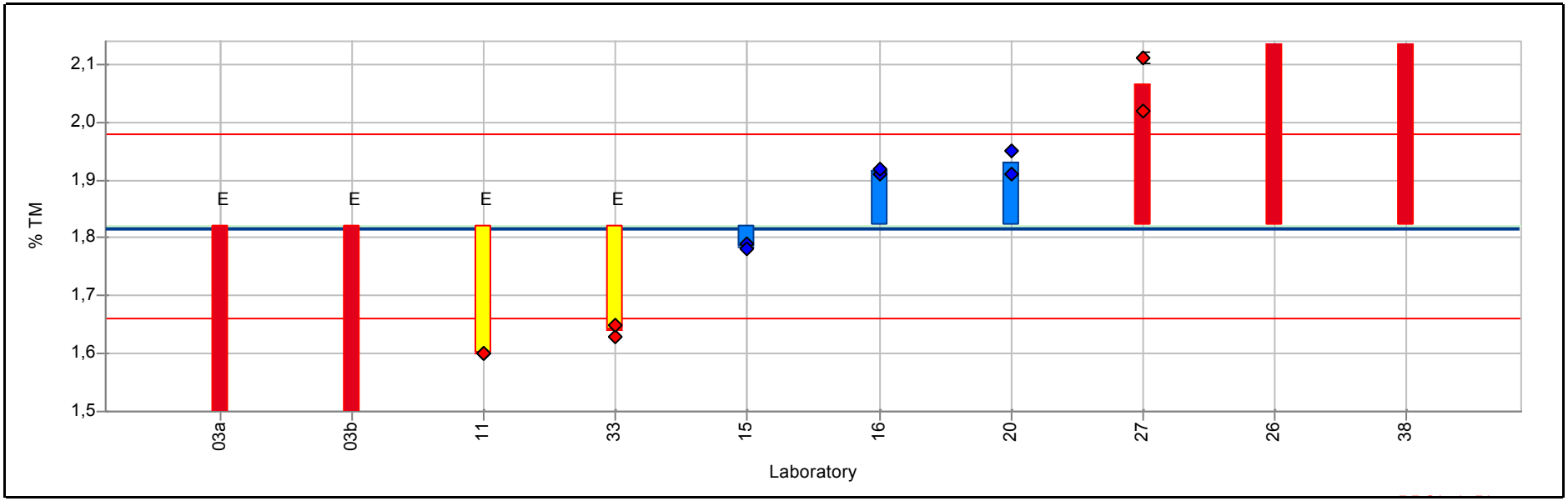
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,080	0,008	-0,596		0,085	0,074		XRF (fusion)	Reconstitution Method
01b	0,098	0,008	0,273		0,104	0,092		Standardless info only	fusion
03a	0,080	0,000	-0,572		0,080	0,080		ICP-OES	ASTM D 6357
03b	0,065	0,007	-1,277		0,060	0,070		XRF (fusion)	ASTM D 4326
04	0,107		0,696		0,107			XRF (fusion)	

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,119	0,001	1,272		0,119	0,120	ISO 17025	XRF (fusion)	
07									
08	0,003	0,000	-4,191	E	0,003	0,003		XRF (fusion)	
09	0,100		0,367		0,100			XRF (Pellet) info only	
10	0,100	0,000	0,367		0,100	0,100		ICP-OES	
11	0,110	0,000	0,837		0,110	0,110	ISO 17025	XRF (fusion)	
12									
13	0,102	0,001	0,461		0,102	0,102		XRF (fusion)	
14	0,097	0,000	0,226		0,097	0,097		XRF (fusion)	
15	0,070	0,000	-1,045		0,070	0,070		XRF (fusion)	
16									
18	0,080	0,000	-0,572		0,080	0,080		XRF (fusion)	
19	0,070	0,000	-1,042		0,070	0,070		XRF (fusion)	
20	0,108	0,000	0,759		0,108	0,108		XRF (fusion)	
21	0,103		0,508		0,103			XRF (fusion)	
22									
23									
25									
26	0,097	0,003	0,226		0,095	0,099		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,093	0,002	0,062		0,092	0,095	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,844 % TM**
Measurand:	**Sulfate expressed as SO3**	**Repeatability s.d.:**	**0,008 % TM**
Mean ± U(Mean):	**1,814 ± 0,703 % TM**	**Range of tolerance:**	**1,660 - 1,980 % TM (|z-score| <= 2,00)**
No. of laboratories:	**9**	**Method:**	**DIN 38402 A45**
Assigned value:	**1,820 % TM (Reference value)**	**Target s.d.:**	**0,080 % TM (Reference value)**



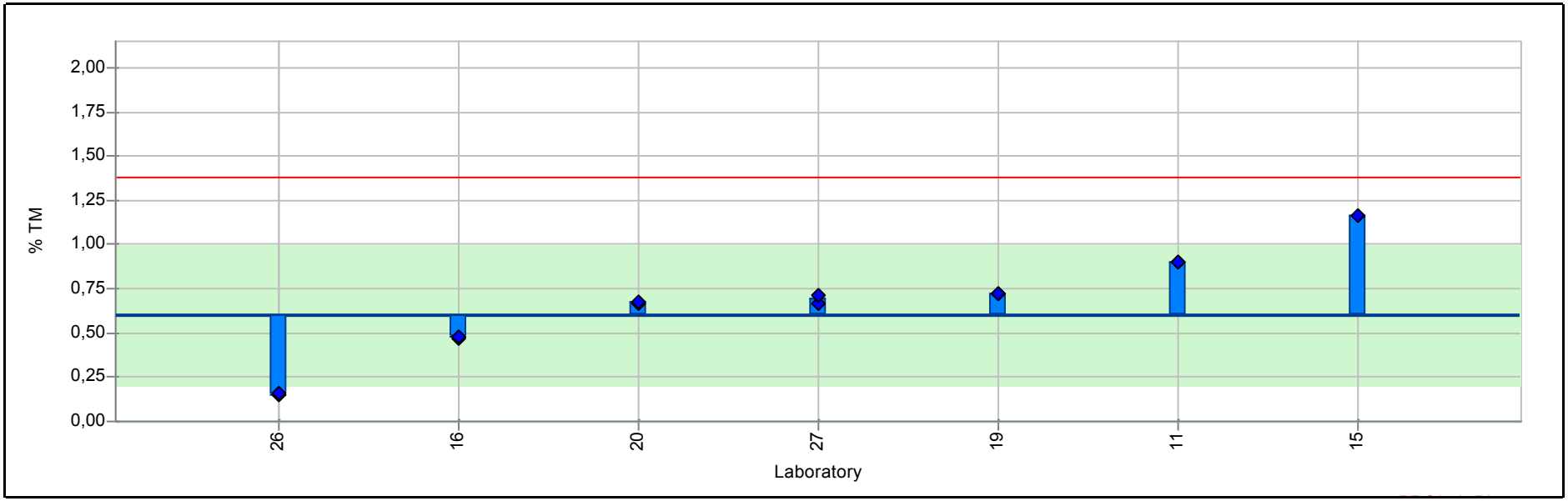
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a	0,024	0,003	-22,450	E	0,022	0,026		Wet chemistry EN196-2	
03b	0,024	0,003	-22,450	E	0,022	0,026		Wet chemistry EN196-2	
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	1,600	0,000	-2,750	E	1,600	1,600		Wet chemistry EN196-2	
12									
13									
14									
15	1,785	0,007	-0,437		1,790	1,780		XRF (Pellet) info only	WDXRF (pp) S-Kbs-Line
16	1,915	0,007	1,187		1,910	1,920	ISO 17025	Wet chemistry EN196-2	
18									
19									
20	1,930	0,028	1,375		1,950	1,910		Wet chemistry EN196-2	
21									
22									
23									
25									
26	3,002	0,004	14,781	E	3,005	3,000		Wet chemistry EN196-2	
27	2,065	0,064	3,062	E	2,020	2,110		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33	1,640	0,014	-2,250	E	1,630	1,650	ISO 17025	Wet chemistry EN196-2	
34									
37									
38	3,680	0,000	23,250	E	3,680	3,680		Wet chemistry EN196-2	
39									

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,387 % TM**
Measurand:	**Sulfide expressed as S**	**Repeatability s.d.:**	**0,007 % TM**
Mean ± U(Mean):	**0,602 ± 0,395 % TM**	**Range of tolerance:**	**-0,171 - 1,376 % TM (|z-score| <= 2,00)**
No. of laboratories:	**6**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,602 % TM (Empirical value)**	**Target s.d.:**	**0,387 % TM (Empirical value)**



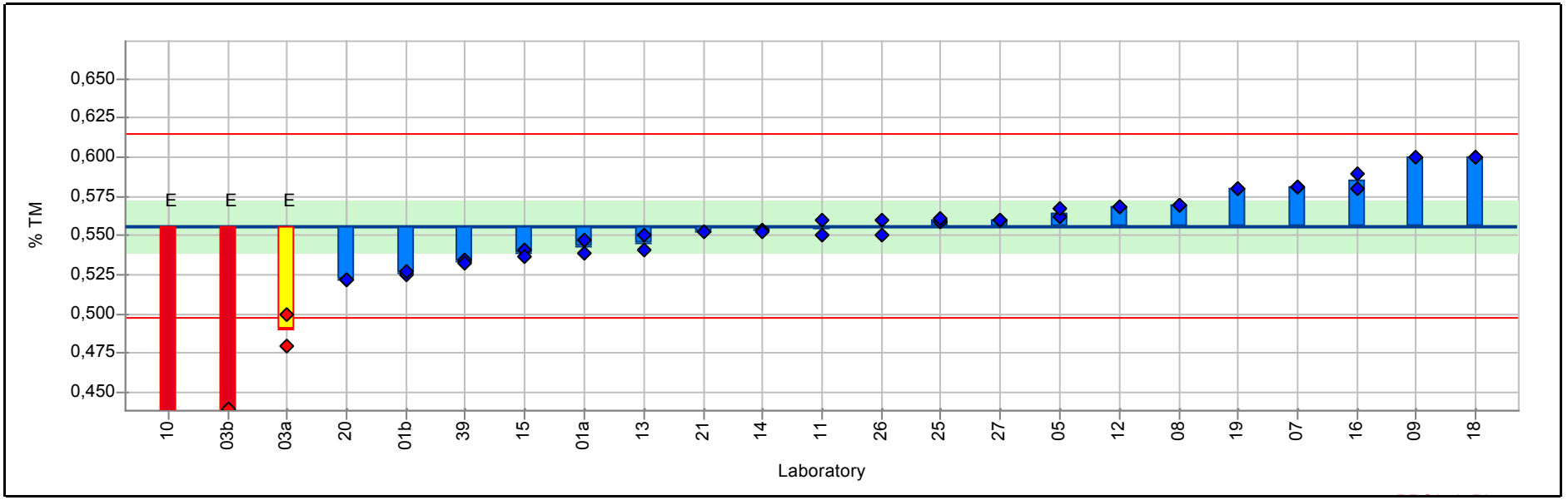
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a									
01b									
03a									
03b									
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05									
07									
08									
09									
10									
11	0,900	0,000	0,770		0,900	0,900		Wet chemistry EN196-2	
12									
13									
14									
15	1,166		1,458		1,166			XRF (Pellet) info only	WDXRF (pp) S-Ka (Kbs-
16	0,475	0,007	-0,330		0,470	0,480	ISO 17025	Wet chemistry EN196-2	
18									
19	0,722	0,000	0,309		0,722	0,722	ISO 17025	Wet chemistry EN196-2	
20	0,675	0,007	0,188		0,670	0,680		Wet chemistry EN196-2	
21									
22									
23									
25									
26	0,152	0,004	-1,164		0,150	0,155		Wet chemistry EN196-2	
27	0,690	0,028	0,227		0,670	0,710		Wet chemistry EN196-2	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39									

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,029 % TM**
Measurand:	**TiO2**	**Repeatability s.d.:**	**0,005 % TM**
Mean ± U(Mean):	**0,556 ± 0,016 % TM**	**Range of tolerance:**	**0,497 - 0,615 % TM (|z-score| <= 2,00)**
No. of laboratories:	**21**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,556 % TM (Empirical value)**	**Target s.d.:**	**0,029 % TM (Empirical value)**



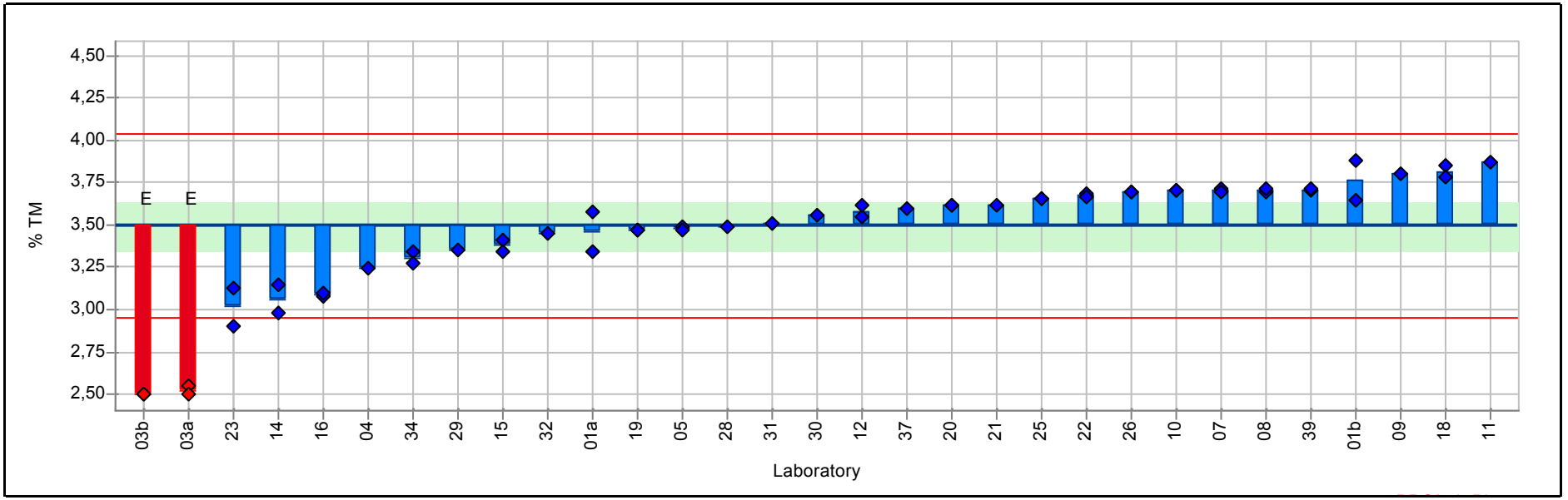
Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,543	0,006	-0,452		0,547	0,539		XRF (fusion)	Reconstitution Method
01b	0,526	0,001	-1,029		0,525	0,527		Standardless info only	fusion
03a	0,490	0,014	-2,251	E	0,480	0,500		ICP-OES	ASTM D 6357
03b	0,435	0,007	-4,118	E	0,430	0,440		XRF (fusion)	ASTM D 4326
04									

RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,565	0,003	0,280		0,562	0,567	ISO 17025	XRF (fusion)	
07	0,581	0,000	0,838		0,581	0,581	ISO 17025	XRF (fusion)	
08	0,570	0,000	0,450		0,570	0,569		XRF (fusion)	
09	0,600		1,483		0,600			XRF (Pellet) info only	
10	0,400	0,000	-5,306	E	0,400	0,400	ISO 17025	XRF (fusion)	
11	0,555	0,007	-0,044		0,550	0,560	ISO 17025	XRF (fusion)	
12	0,568	0,000	0,414		0,568	0,569		XRF (fusion)	
13	0,546	0,006	-0,360		0,541	0,550		XRF (fusion)	
14	0,554	0,001	-0,095		0,554	0,553		XRF (fusion)	
15	0,539	0,003	-0,585		0,541	0,537		XRF (fusion)	
16	0,585	0,007	0,974		0,580	0,590		XRF (fusion)	
18	0,600	0,000	1,483		0,600	0,600		XRF (fusion)	
19	0,580	0,000	0,804		0,580	0,580		XRF (fusion)	
20	0,522	0,000	-1,163		0,522	0,522		XRF (fusion)	
21	0,553		-0,112		0,553			XRF (fusion)	
22									
23									
25	0,560	0,001	0,126		0,559	0,561		XRF (fusion)	
26	0,556	0,006	-0,027		0,551	0,560		XRF (fusion)	
27	0,560	0,000	0,126		0,560	0,560		XRF (fusion)	
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,534	0,002	-0,774		0,535	0,532	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,273 % TM**
Measurand:	**Total S expressed as SO3**	**Repeatability s.d.:**	**0,042 % TM**
Mean ± U(Mean):	**3,494 ± 0,142 % TM**	**Range of tolerance:**	**2,948 - 4,039 % TM (|z-score| <= 2,00)**
No. of laboratories:	**23**	**Method:**	**DIN 38402 A45**
Assigned value:	**3,494 % TM (Empirical value)**	**Target s.d.:**	**0,273 % TM (Empirical value)**



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	3,462	0,166	-0,118		3,579	3,344		XRF (fusion)	Reconstitution Method
01b	3,761	0,162	0,983		3,876	3,647		Standardless info only	fusion
03a	2,525	0,035	-3,553	E	2,550	2,500		combustion	ASTM D 5016
03b	2,500	0,000	-3,645	E	2,500	2,500		combustion	
04	3,240		-0,930		3,240			XRF (fusion)	

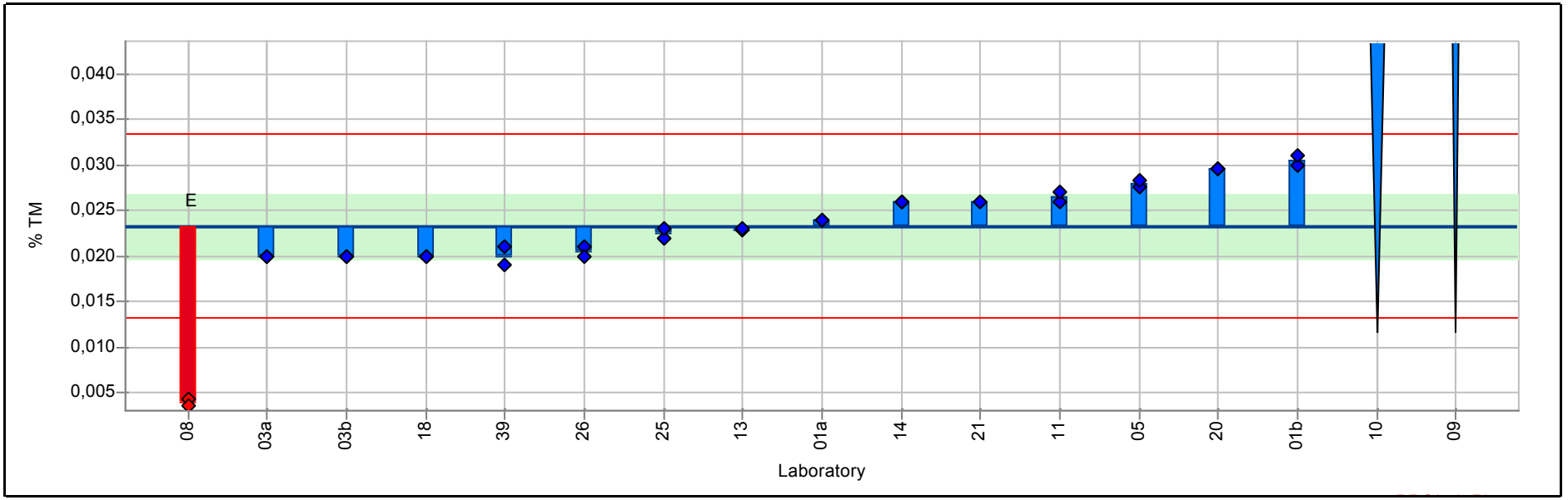
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	3,480	0,020	-0,051		3,494	3,466	ISO 17025	XRF (fusion)	
07	3,702	0,018	0,766		3,715	3,690	ISO 17025	XRF (fusion)	
08	3,704	0,011	0,772		3,696	3,712		XRF (fusion)	
09	3,800		1,124		3,800			XRF (Pellet) info only	
10	3,700	0,000	0,757		3,700	3,700	ISO 17025	combustion	
11	3,870		1,381		3,870		ISO 17025	combustion	
12	3,580	0,045	0,319		3,549	3,612		XRF (fusion)	
13									
14	3,062	0,115	-1,583		3,143	2,981		XRF (fusion)	
15	3,377	0,043	-0,429		3,407	3,346		XRF (fusion)	
16	3,090	0,014	-1,481		3,080	3,100	ISO 17025	Wet chemistry EN196-2	
18	3,815	0,049	1,179		3,850	3,780		XRF (fusion)	
19	3,470	0,000	-0,087		3,470	3,470		XRF (fusion)	
20	3,620	0,000	0,464		3,620	3,620		combustion	With LECO instrument - S
21	3,620		0,464		3,620			XRF (fusion)	
22	3,670	0,014	0,647		3,680	3,660		XRF (Pellet) info only	
23	3,015	0,163	-1,756		3,130	2,900		XRF (fusion)	
25	3,655	0,002	0,590		3,653	3,656		combustion	
26	3,694	0,005	0,733		3,690	3,697		XRF (fusion)	
27									
28	3,490		-0,013		3,490			XRF (Pellet) info only	
29	3,355		-0,509		3,355			XRF (Pellet) info only	
30	3,555		0,225		3,555			XRF (Pellet) info only	
31	3,510		0,060		3,510			XRF (Pellet) info only	
32	3,450		-0,160		3,450			XRF (Pellet) info only	
33									
34	3,305	0,049	-0,692		3,340	3,270		XRF (fusion)	
37	3,600		0,390		3,600			XRF (fusion)	
38									
39	3,705	0,007	0,775		3,700	3,710	ISO 17025	combustion	Leco DIN 51085

RV113

Sample:	**FLX-CRM 117**	**Reproducibility s.d.:**	**0,005 % TM**
Measurand:	**ZnO**	**Repeatability s.d.:**	**0,001 % TM**
Mean ± U(Mean):	**0,023 ± 0,004 % TM**	**Range of tolerance:**	**0,013 - 0,033 % TM (|z-score| <= 2,00)**
No. of laboratories:	**13**	**Method:**	**DIN 38402 A45**
Assigned value:	**0,023 % TM (Empirical value)**	**Target s.d.:**	**0,005 % TM (Empirical value)**

<0,050 (QL)



Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
01a	0,024	0,000	0,132		0,024	0,024		XRF (fusion)	Reconstitution Method
01b	0,030	0,001	1,415		0,030	0,031		Standardless info only	fusion
03a	0,020	0,000	-0,658		0,020	0,020		ICP-OES	ASTM D 6357
03b	0,020	0,000	-0,658		0,020	0,020		XRF (fusion)	ASTM D 4326
04									

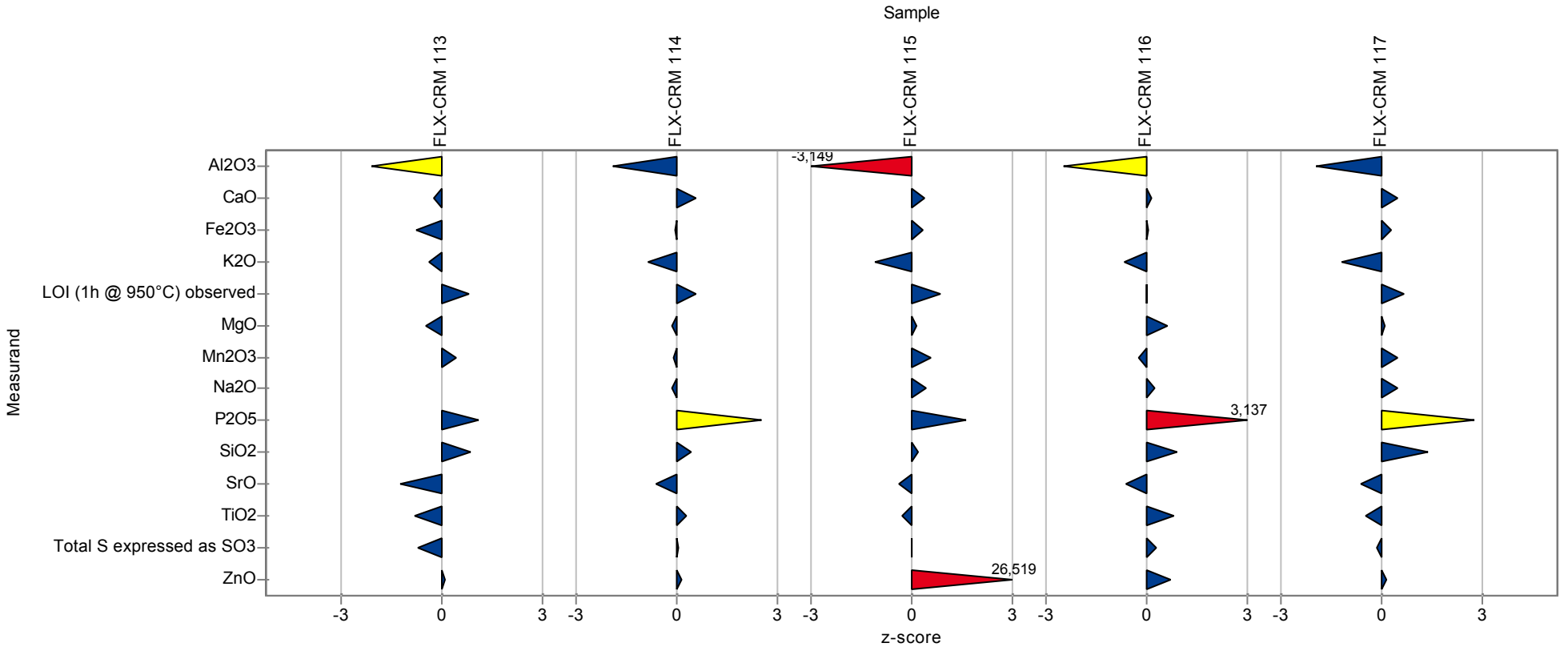
RV113

Lab code	Laboratory mean	s.d.	z-score	Outlier	Sample 1	Sample 2	Accreditation	Analytical method	Comment
05	0,028	0,001	0,906		0,028	0,028	ISO 17025	XRF (fusion)	
07									
08	0,004	0,001	-3,822	E	0,004	0,004		XRF (fusion)	
09					<0,100			XRF (Pellet) info only	
10					<0,050	<0,050		ICP-OES	
11	0,026	0,001	0,625		0,026	0,027	ISO 17025	XRF (fusion)	
12									
13	0,023	0,000	-0,074		0,023	0,023		XRF (fusion)	
14	0,026	0,000	0,526		0,026	0,026		XRF (fusion)	
15									
16									
18	0,020	0,000	-0,658		0,020	0,020		XRF (fusion)	AP WROXI-PANalytical
19									
20	0,030	0,000	1,227		0,030	0,030		XRF (fusion)	
21	0,026		0,526		0,026			XRF (fusion)	
22									
23									
25	0,022	0,001	-0,164		0,022	0,023		XRF (Pellet) info only	XRF pressed pellet
26	0,021	0,001	-0,559		0,021	0,020		XRF (fusion)	
27									
28									
29									
30									
31									
32									
33									
34									
37									
38									
39	0,020	0,001	-0,658		0,021	0,019	ISO 17025	XRF (fusion)	ISO 29581-2:2010

RV113

Laboratory chart of z-scores

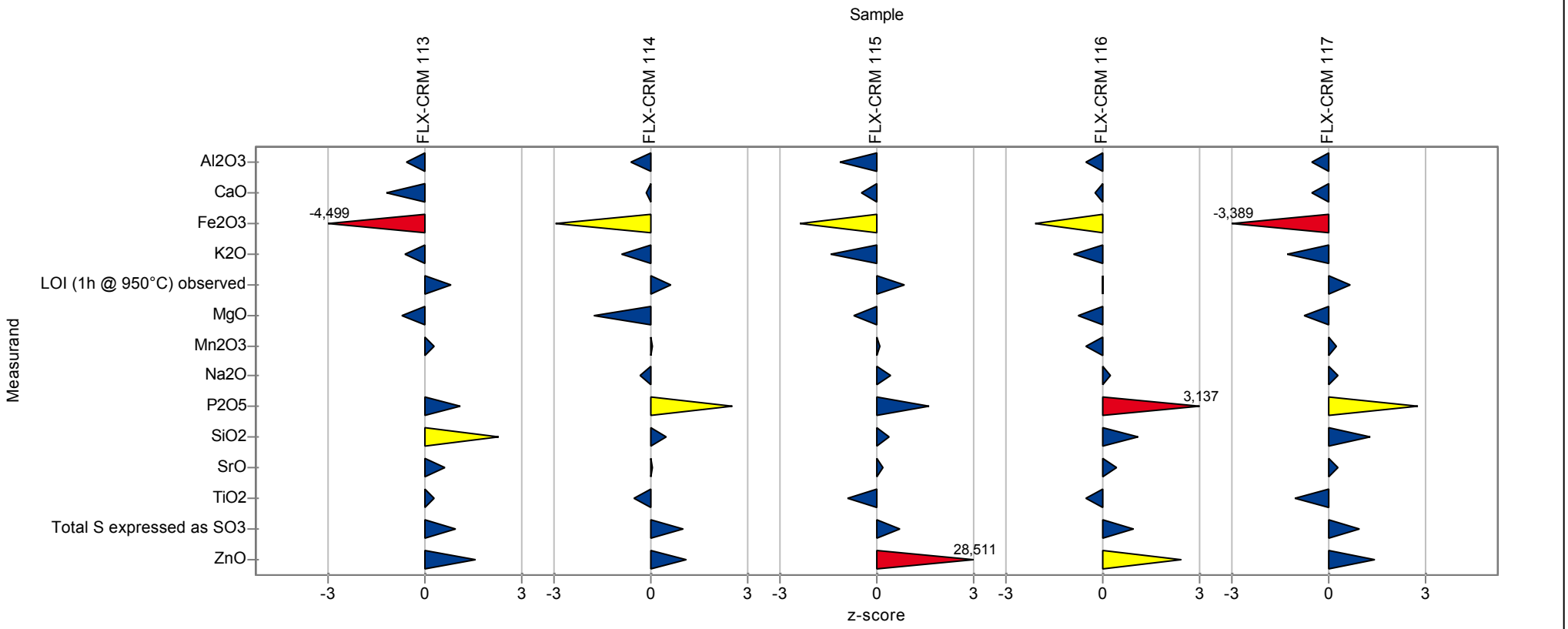
Laboratory: 01a



RV113

Laboratory chart of z-scores

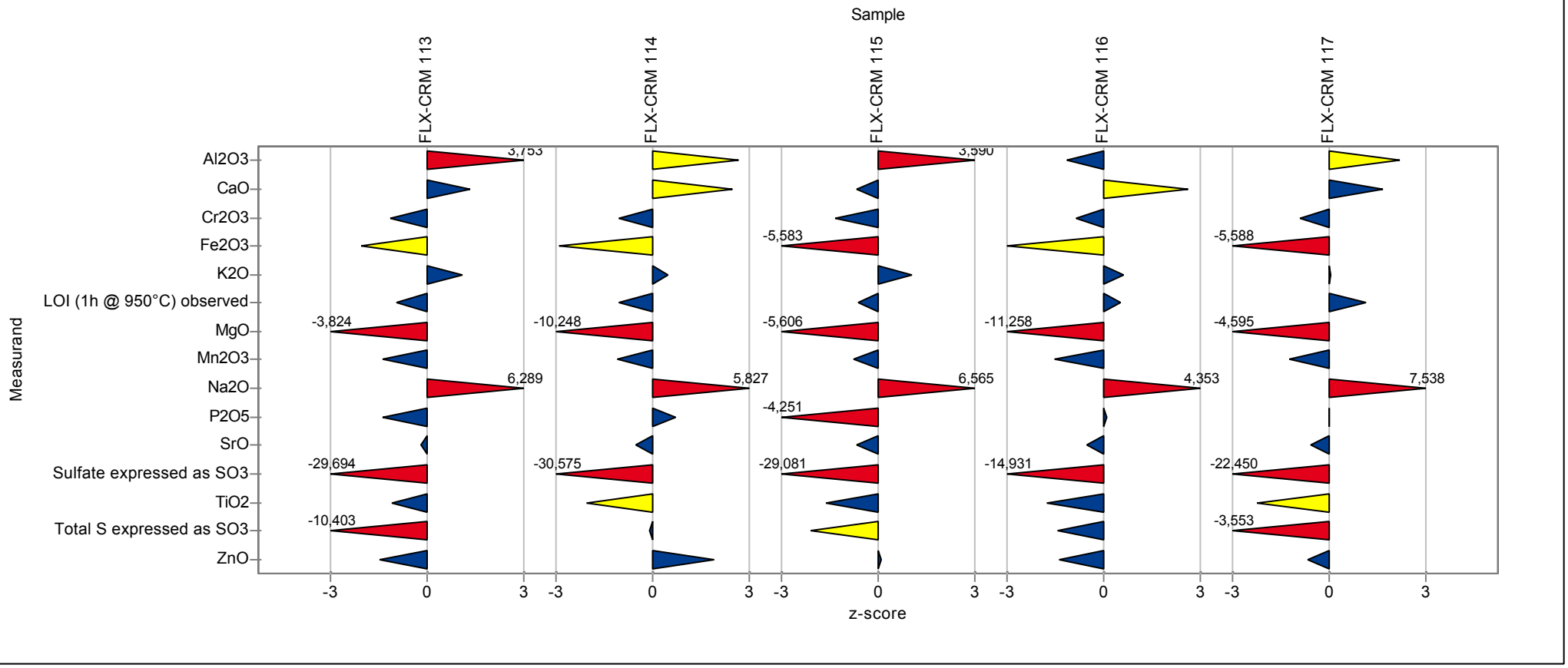
Laboratory: 01b



RV113

Laboratory chart of z-scores

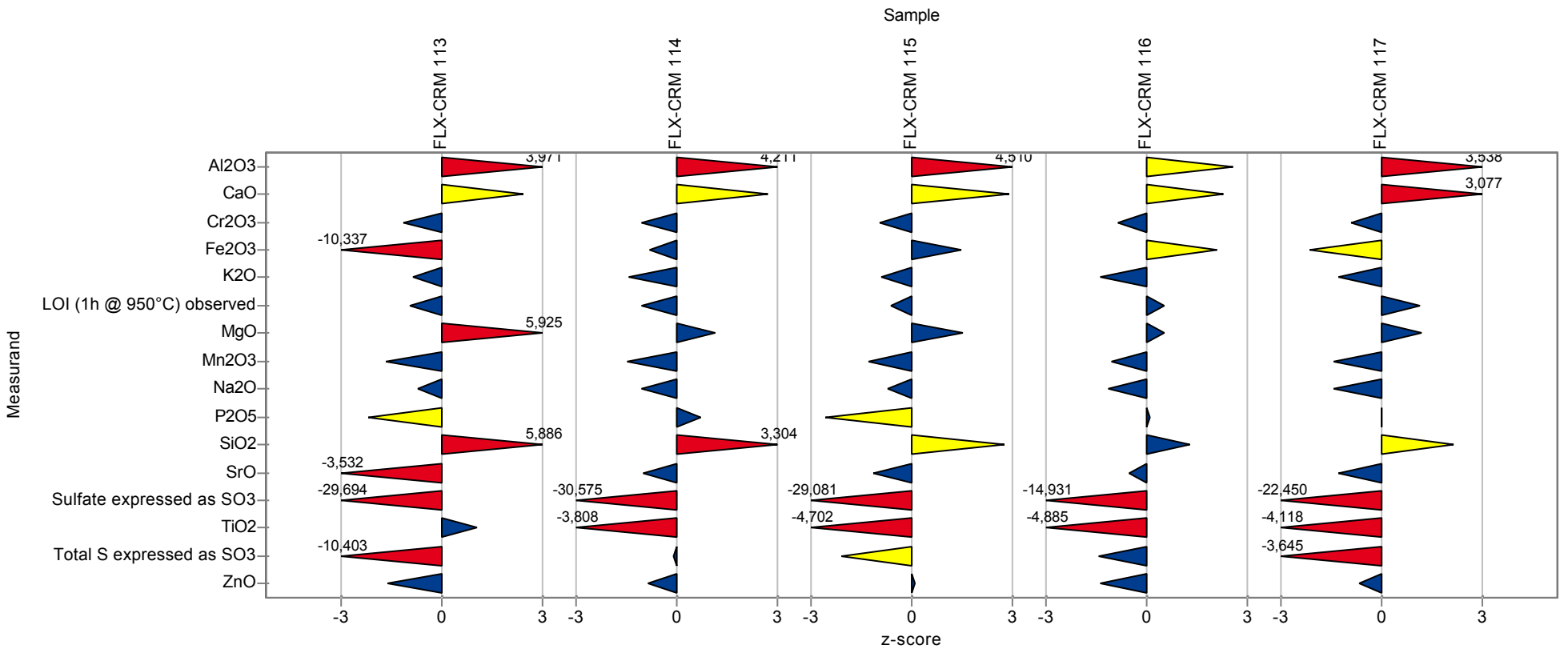
Laboratory: 03a



RV113

Laboratory chart of z-scores

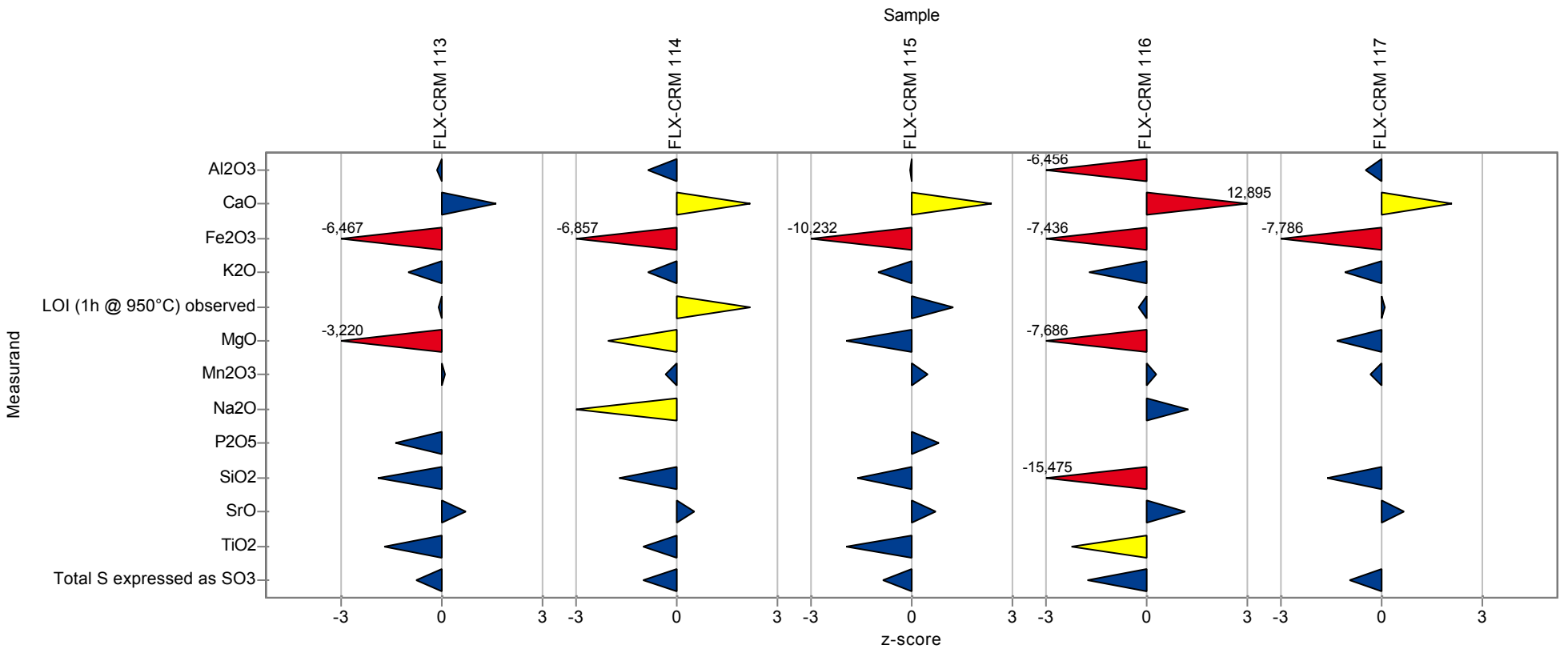
Laboratory: 03b



RV113

Laboratory chart of z-scores

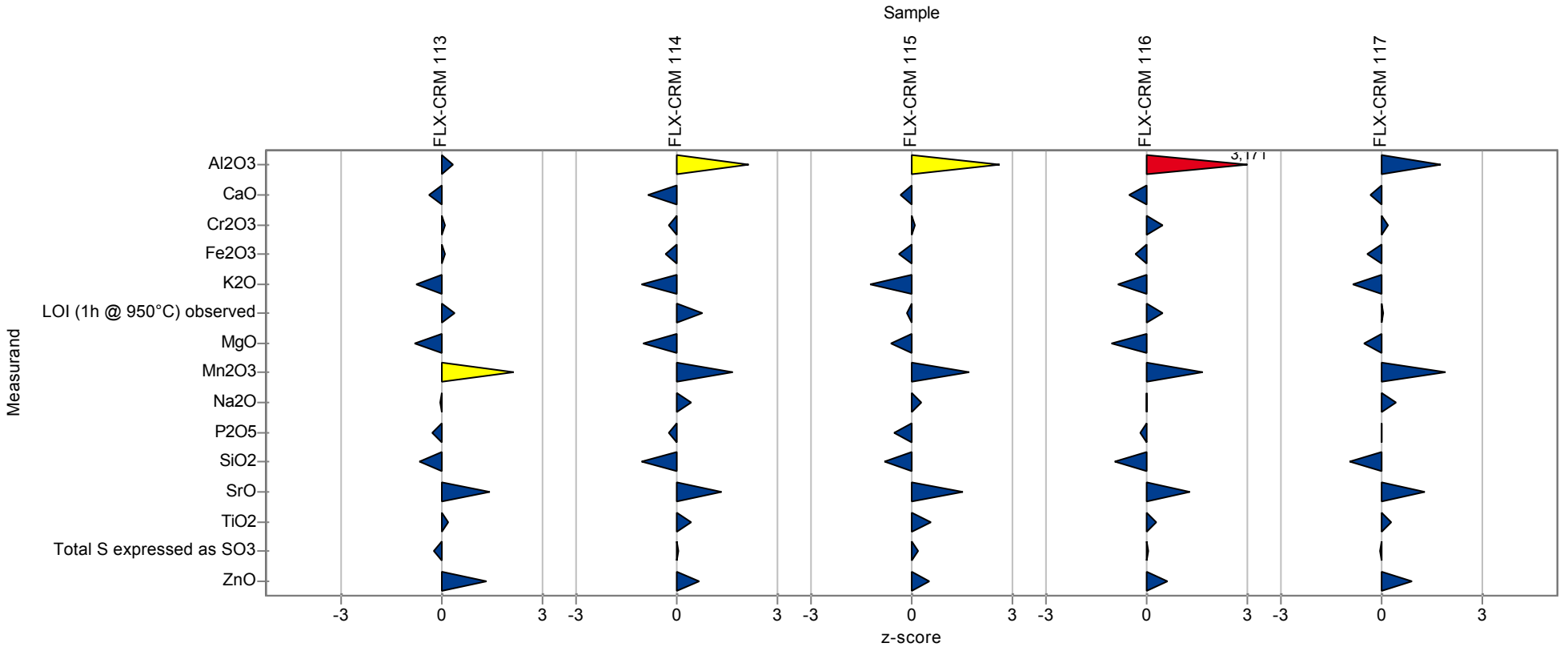
Laboratory: 04



RV113

Laboratory chart of z-scores

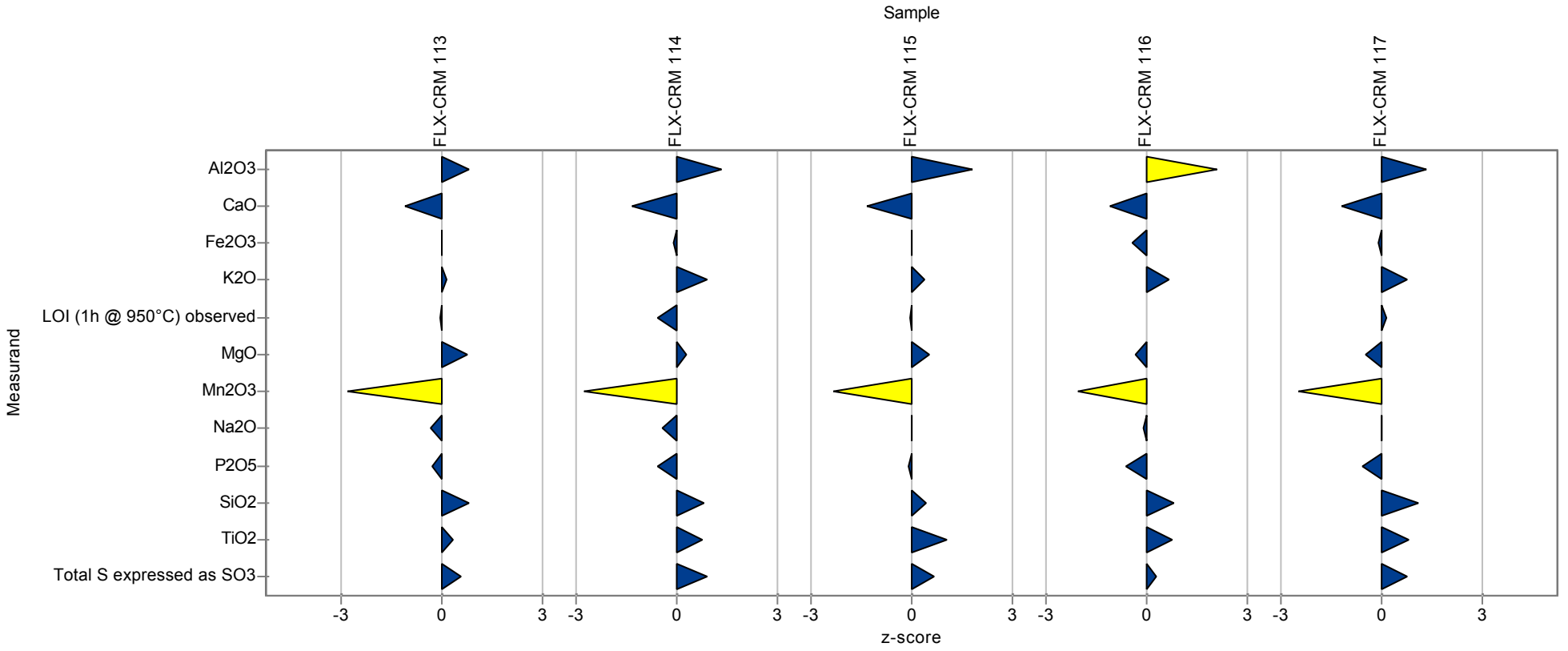
Laboratory: 05



RV113

Laboratory chart of z-scores

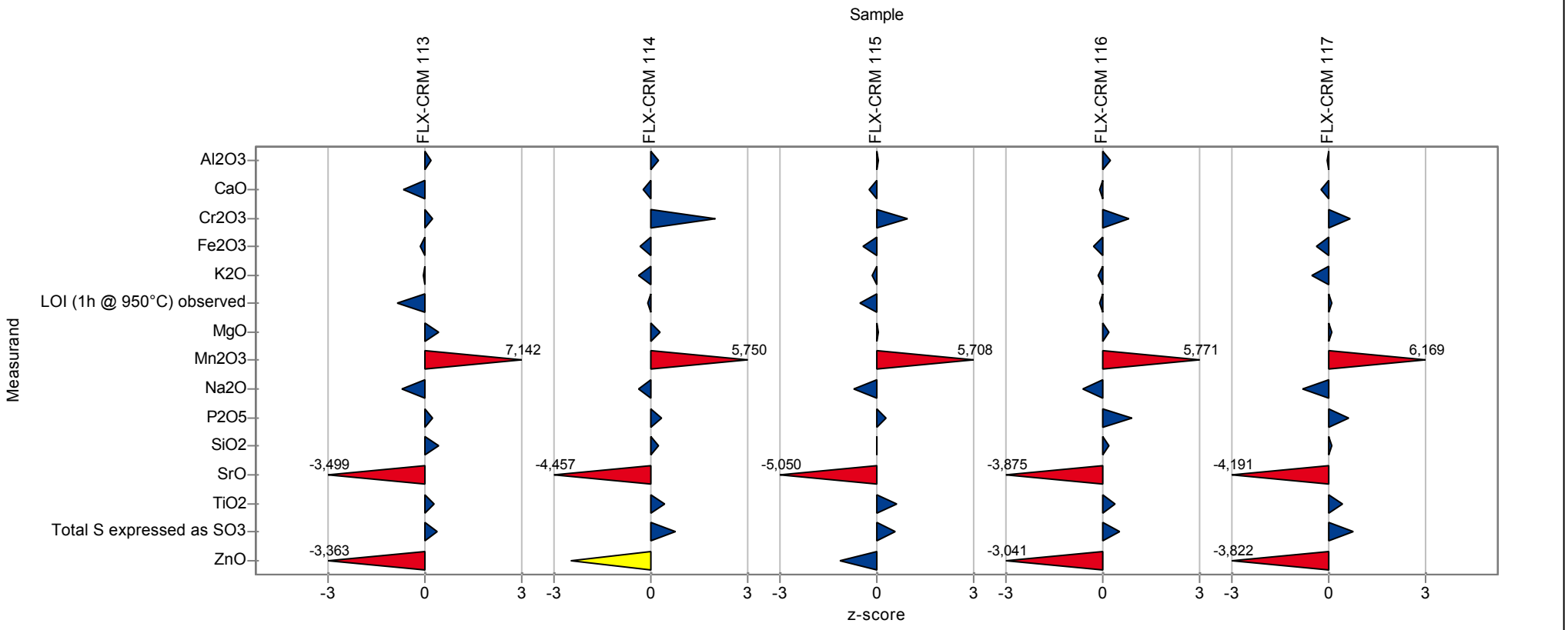
Laboratory: 07



RV113

Laboratory chart of z-scores

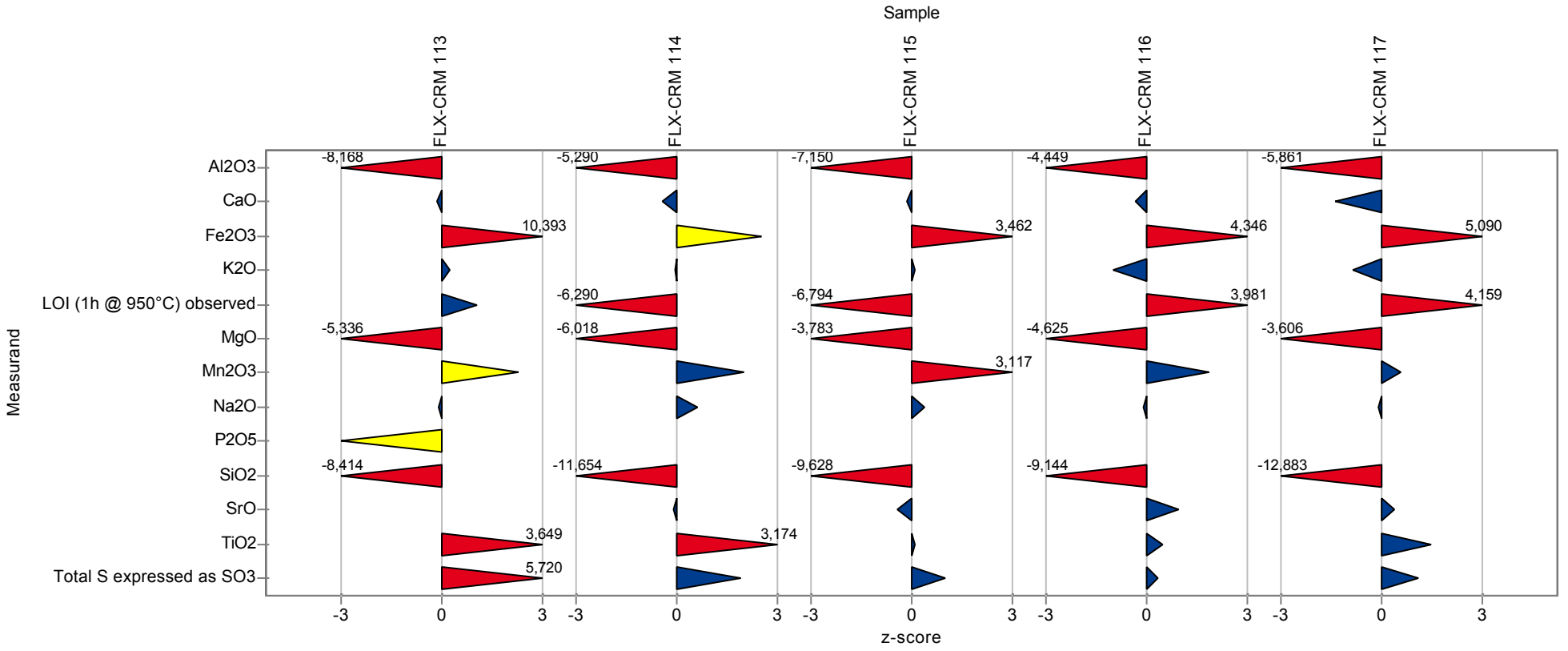
Laboratory: 08



RV113

Laboratory chart of z-scores

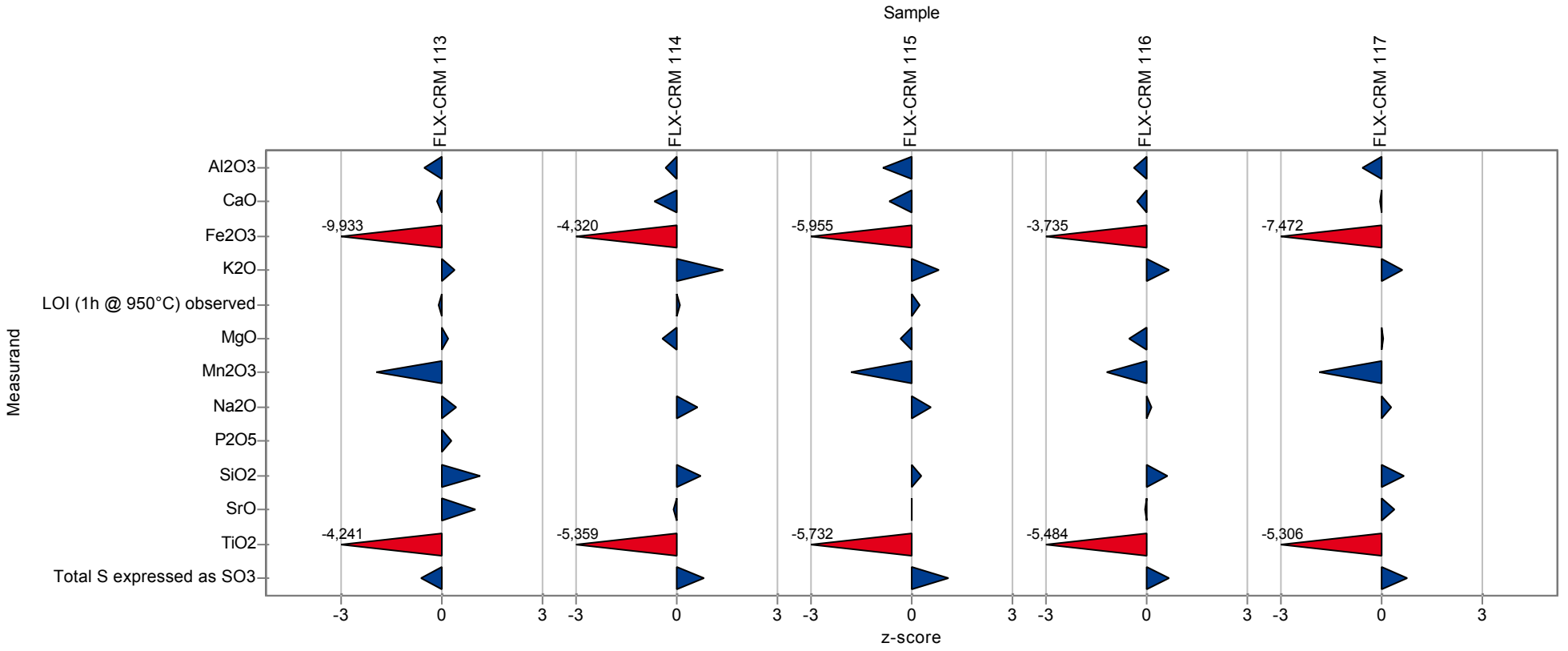
Laboratory: 09



RV113

Laboratory chart of z-scores

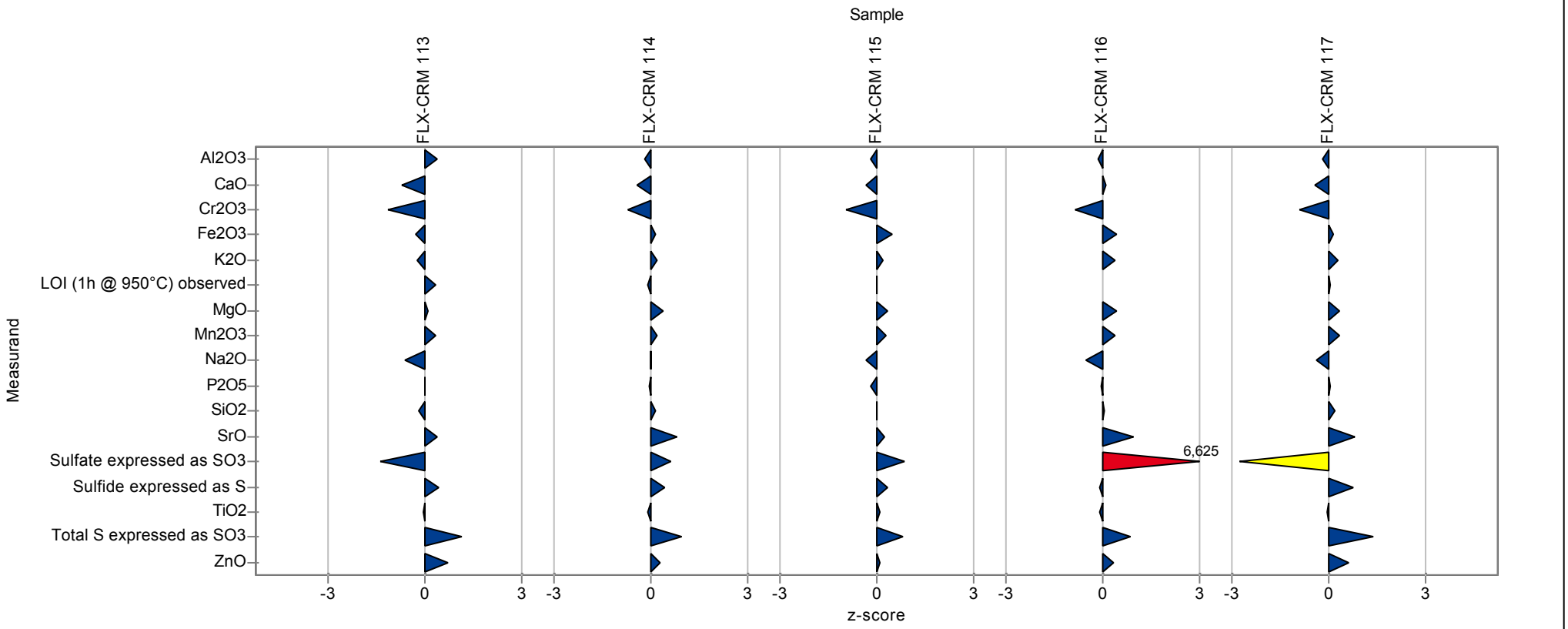
Laboratory: 10



RV113

Laboratory chart of z-scores

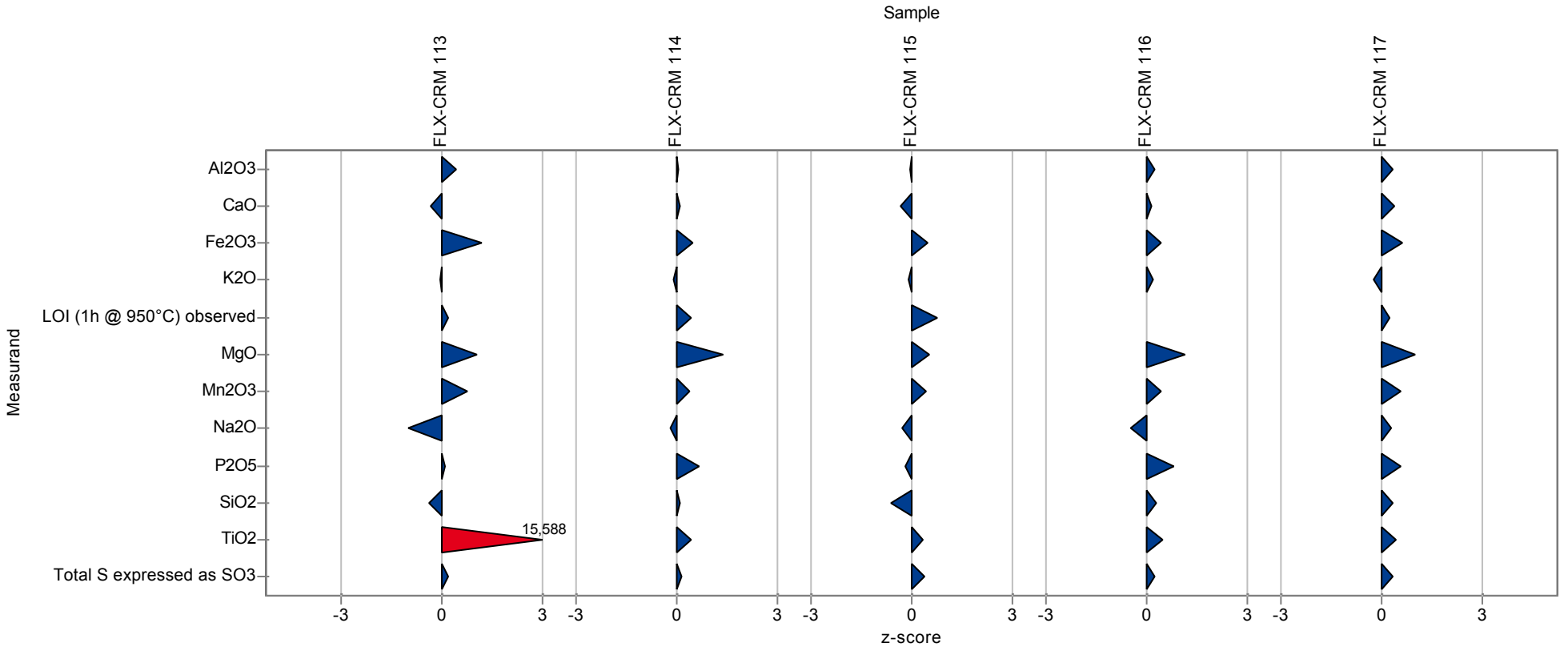
Laboratory: 11



RV113

Laboratory chart of z-scores

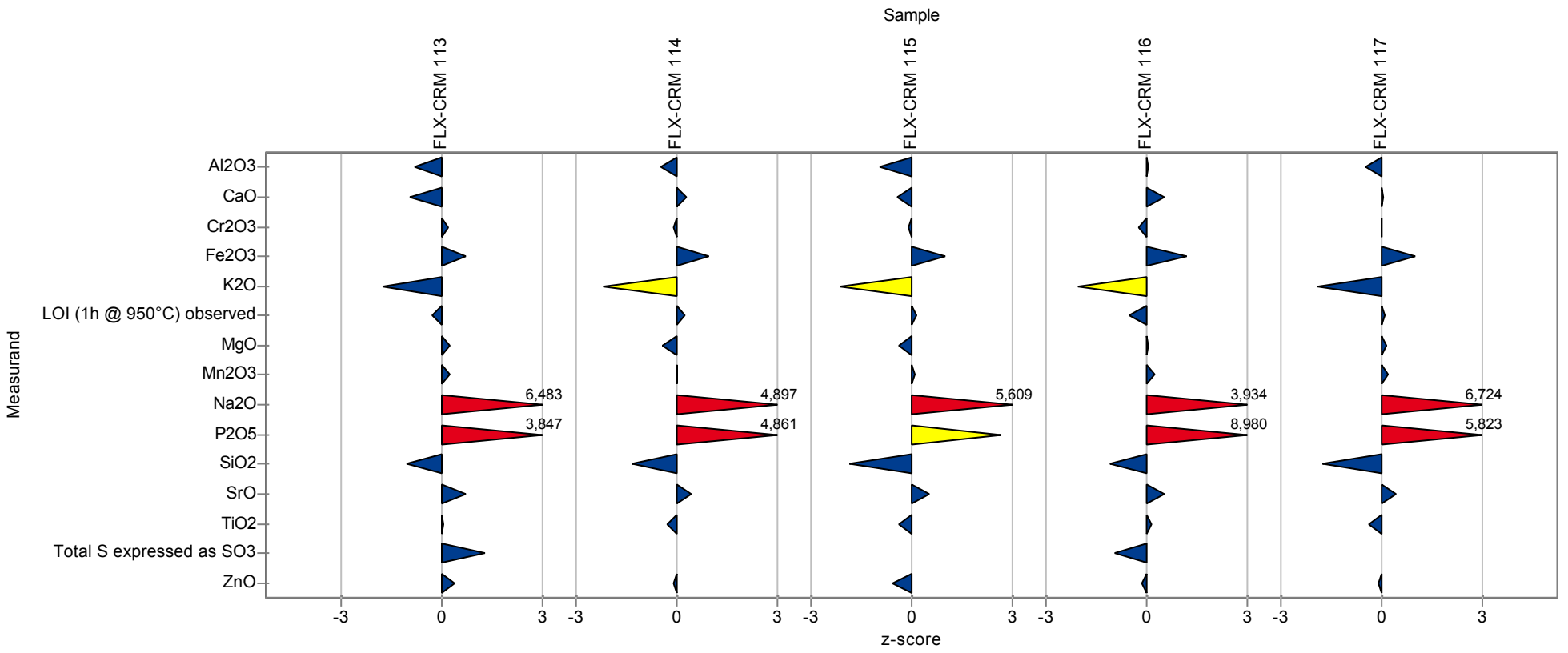
Laboratory: 12



RV113

Laboratory chart of z-scores

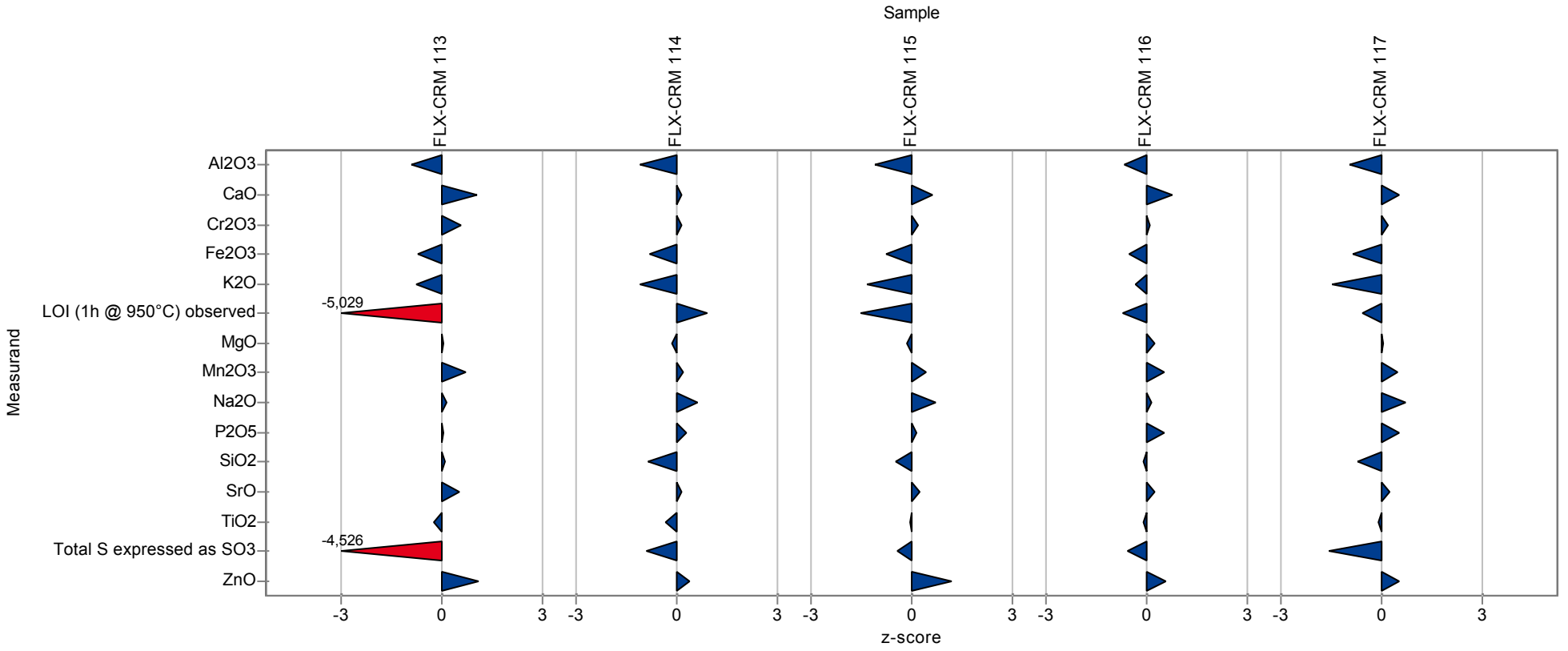
Laboratory: 13



RV113

Laboratory chart of z-scores

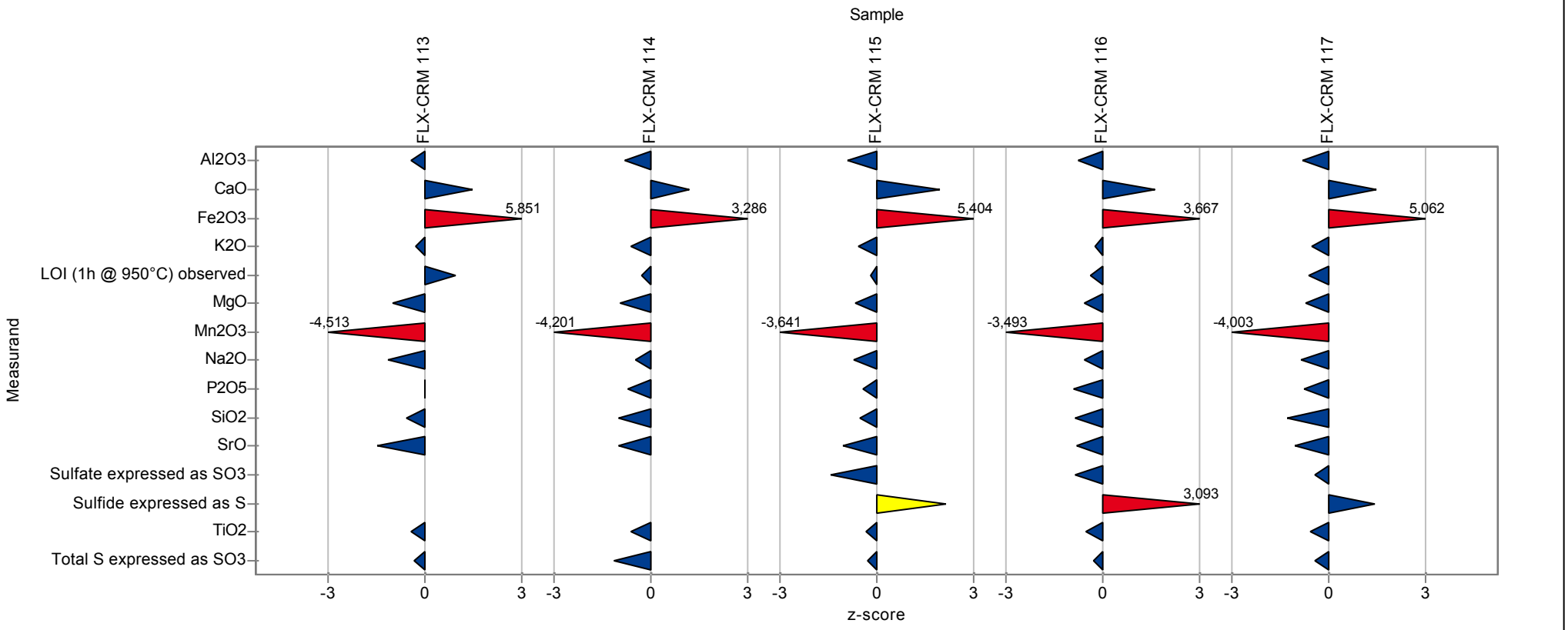
Laboratory: 14



RV113

Laboratory chart of z-scores

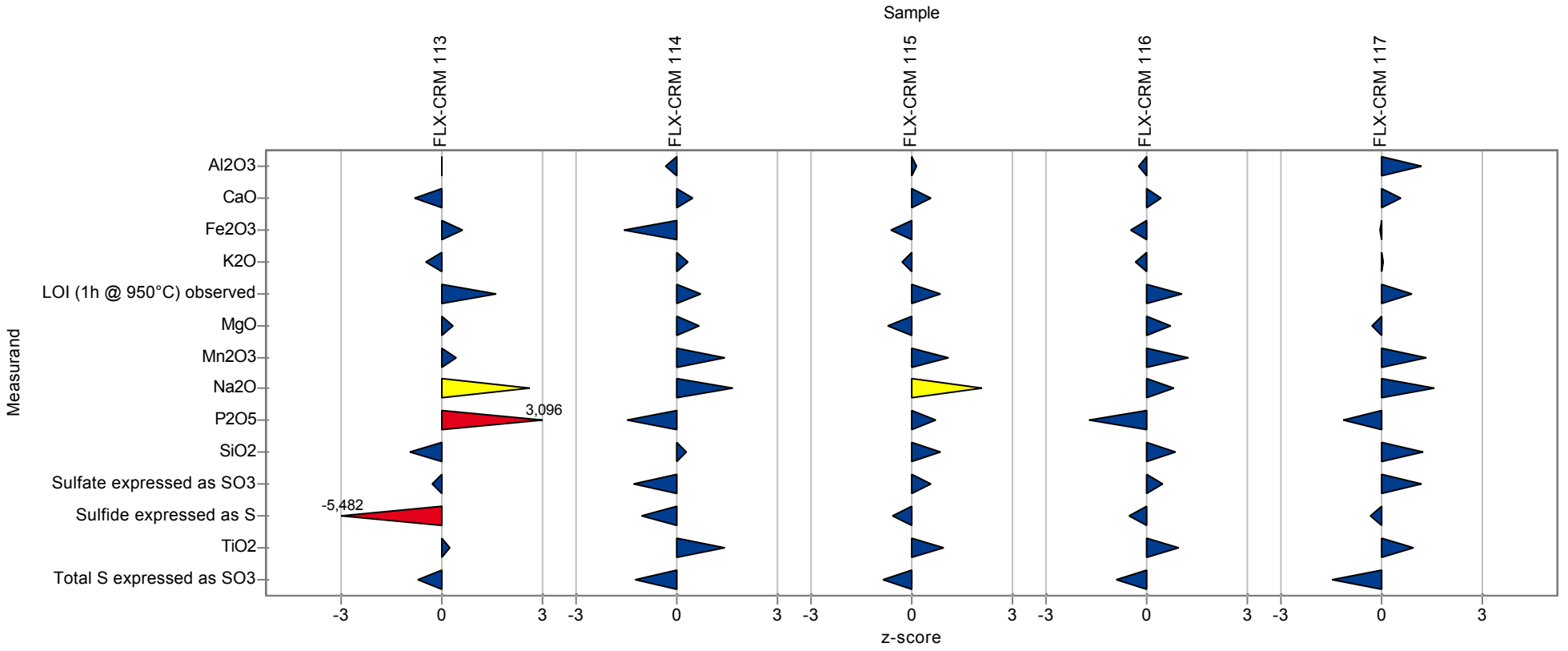
Laboratory: 15



RV113

Laboratory chart of z-scores

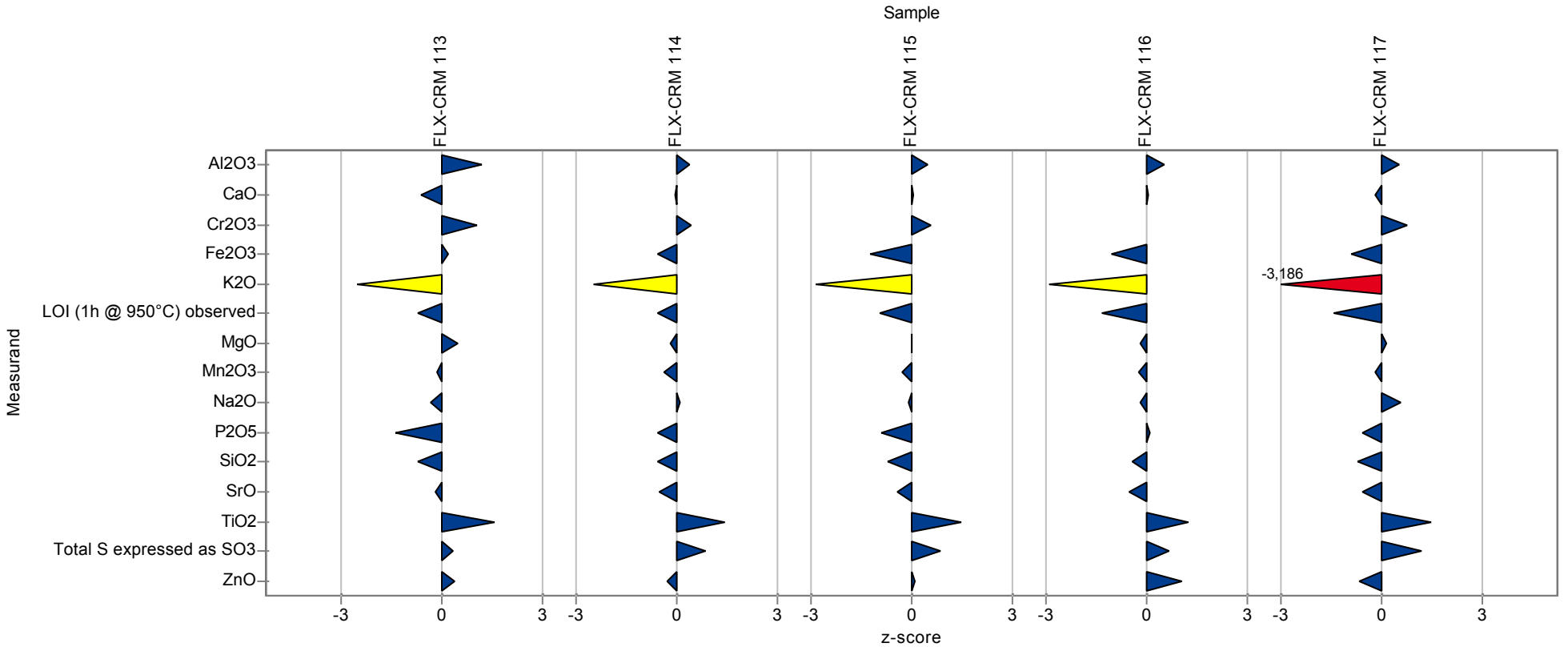
Laboratory: 16



RV113

Laboratory chart of z-scores

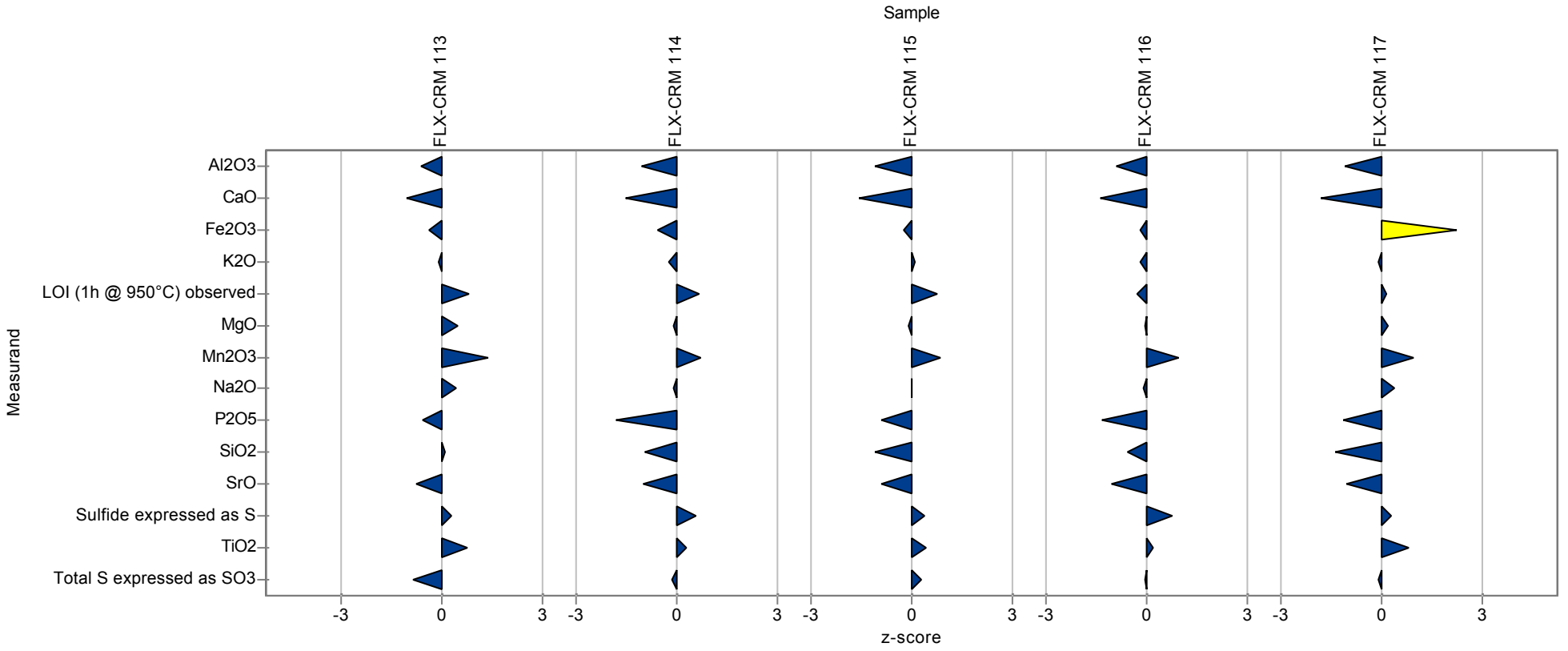
Laboratory: 18



RV113

Laboratory chart of z-scores

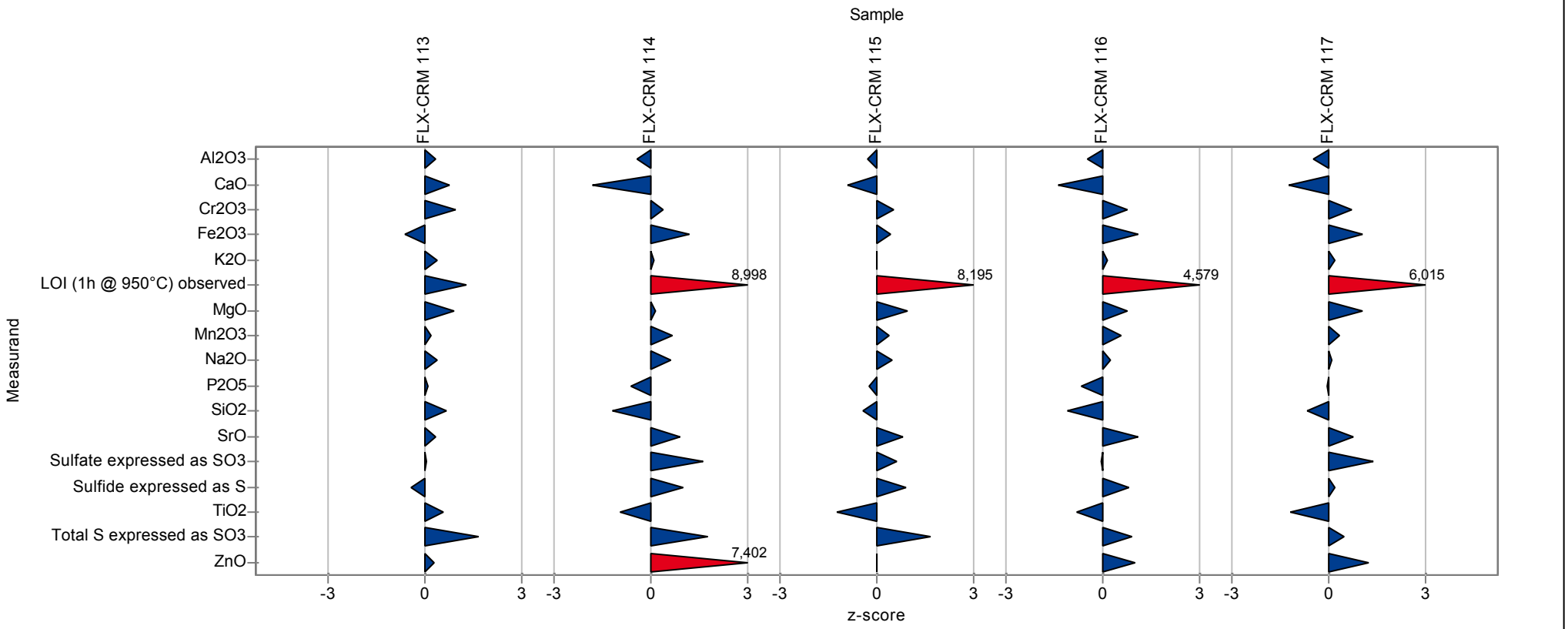
Laboratory: 19



RV113

Laboratory chart of z-scores

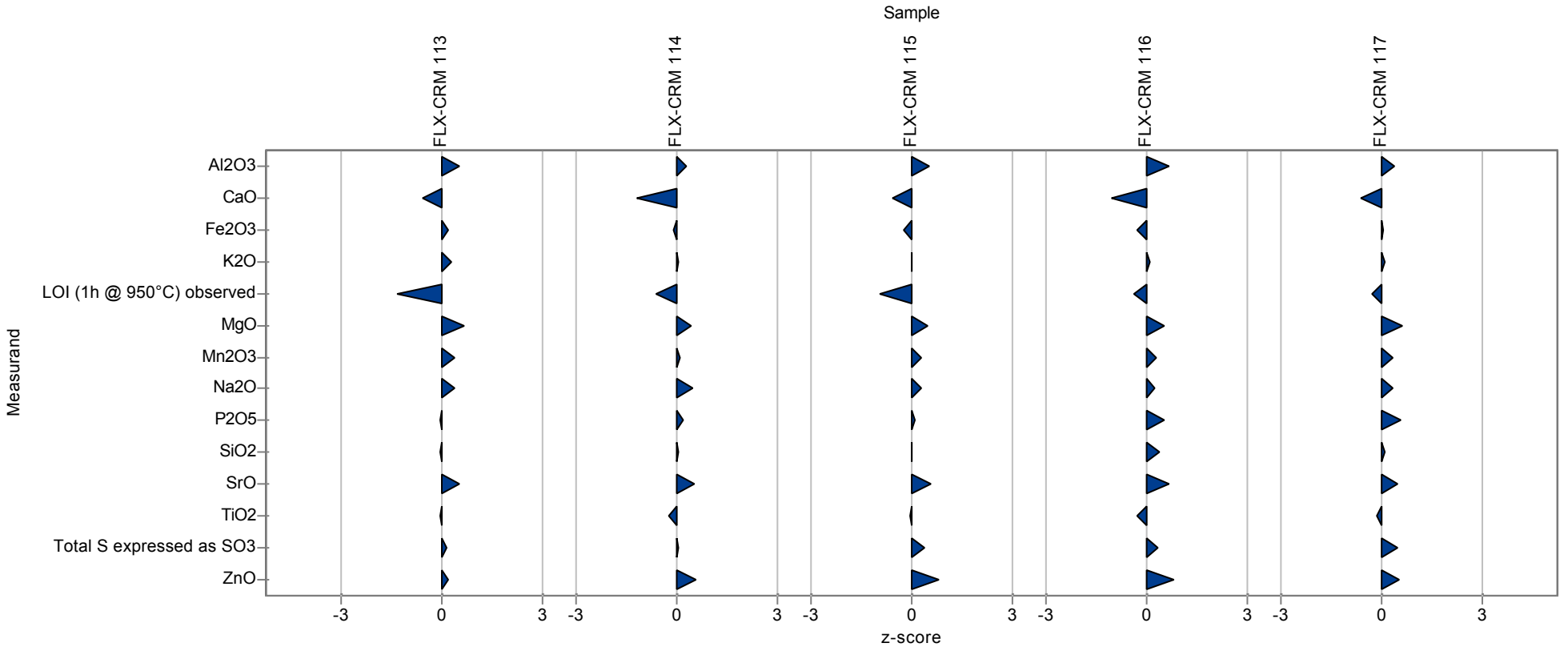
Laboratory: 20



RV113

Laboratory chart of z-scores

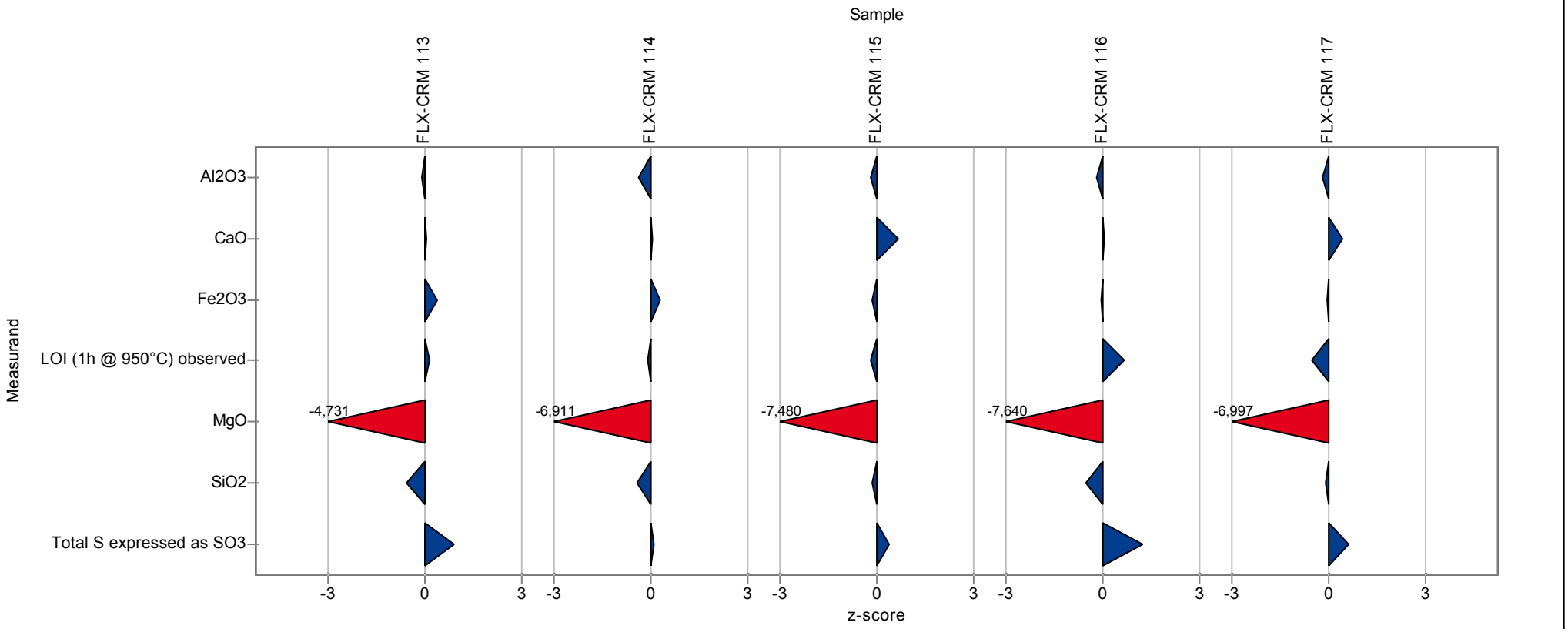
Laboratory: 21



RV113

Laboratory chart of z-scores

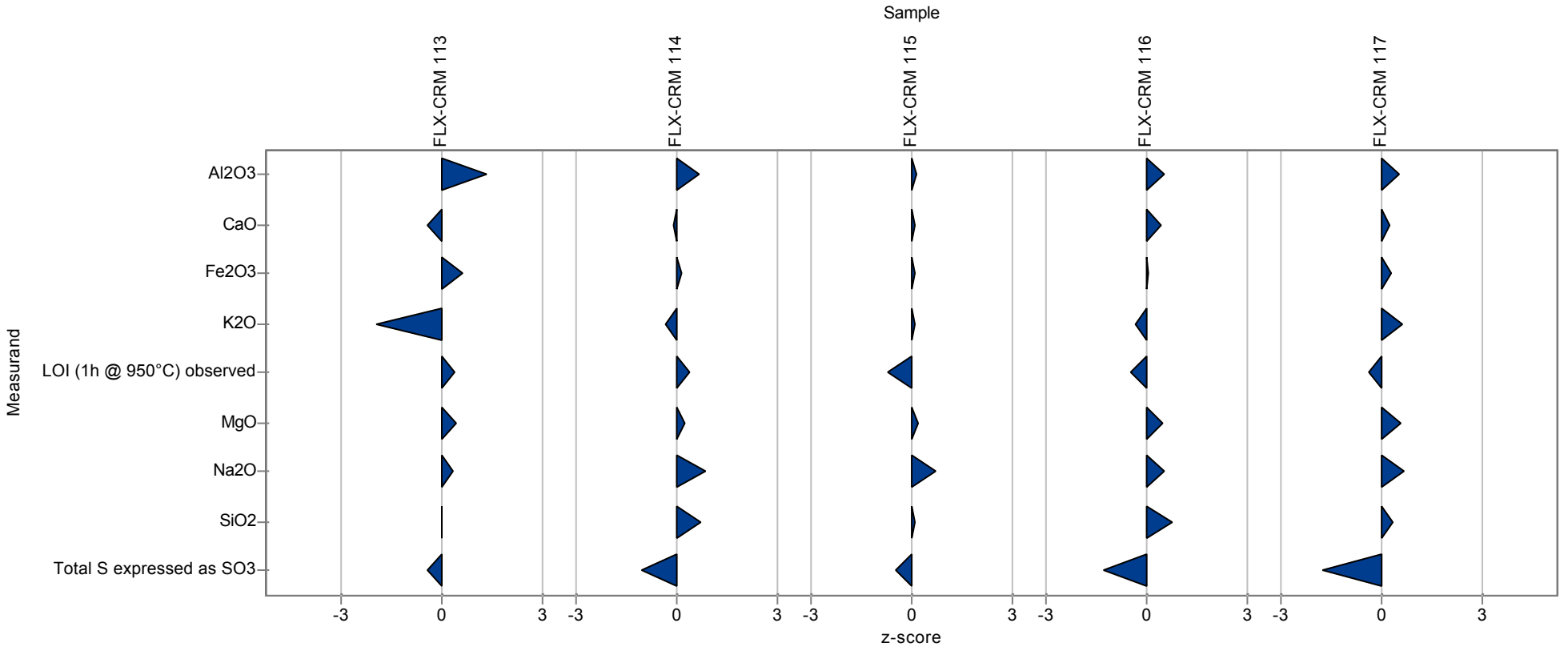
Laboratory: 22



RV113

Laboratory chart of z-scores

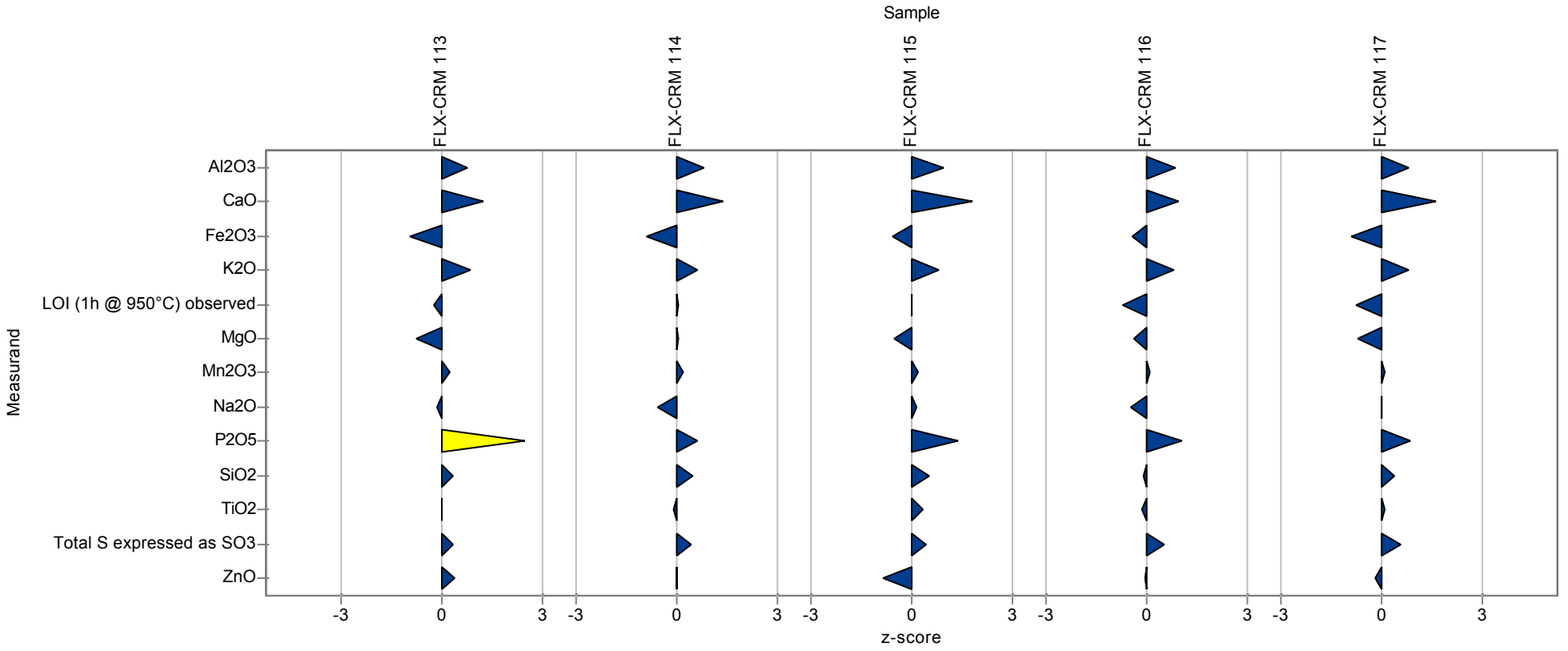
Laboratory: 23



RV113

Laboratory chart of z-scores

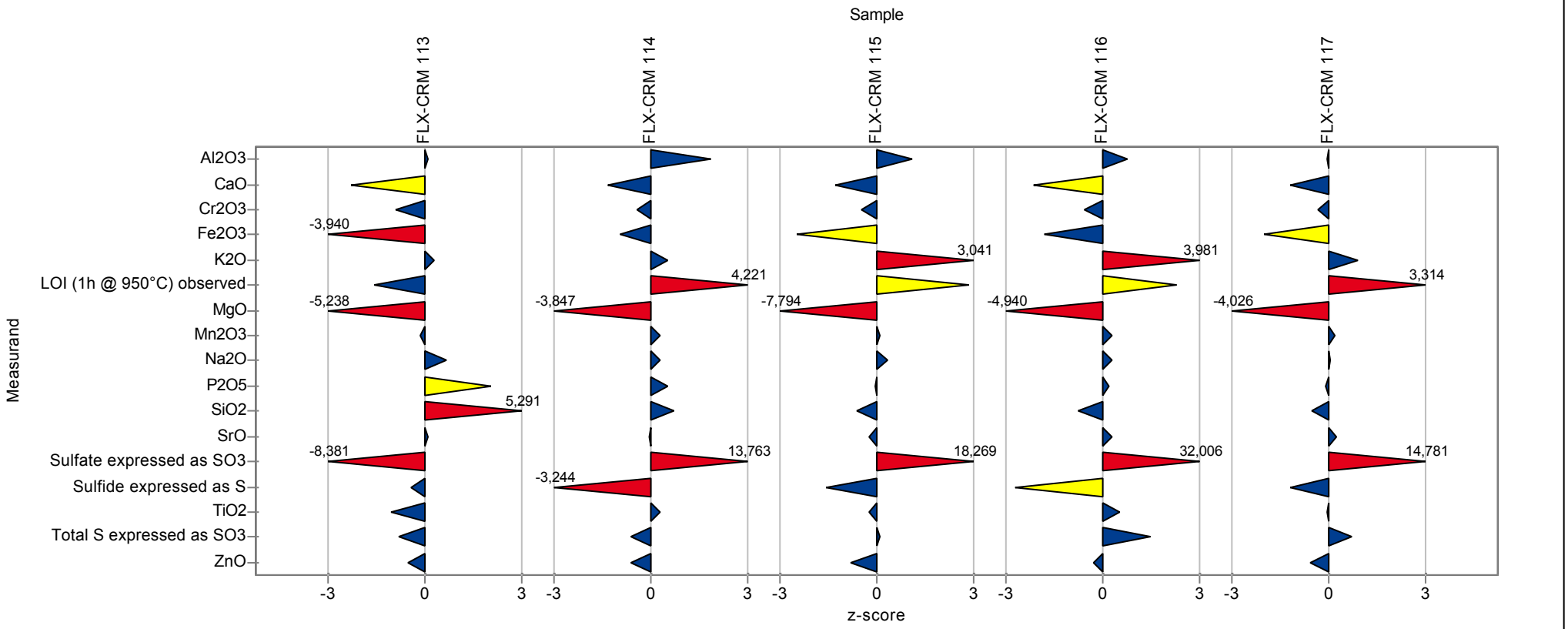
Laboratory: 25



RV113

Laboratory chart of z-scores

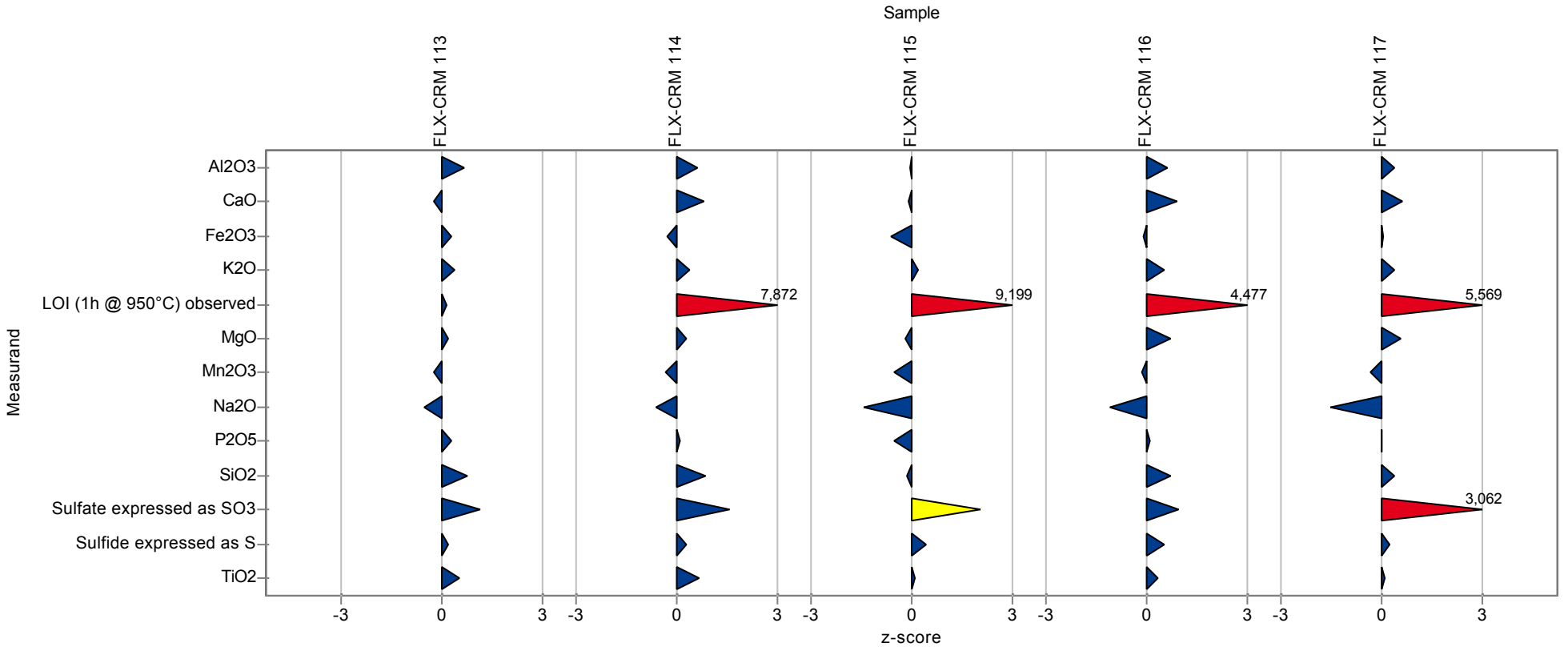
Laboratory: 26



RV113

Laboratory chart of z-scores

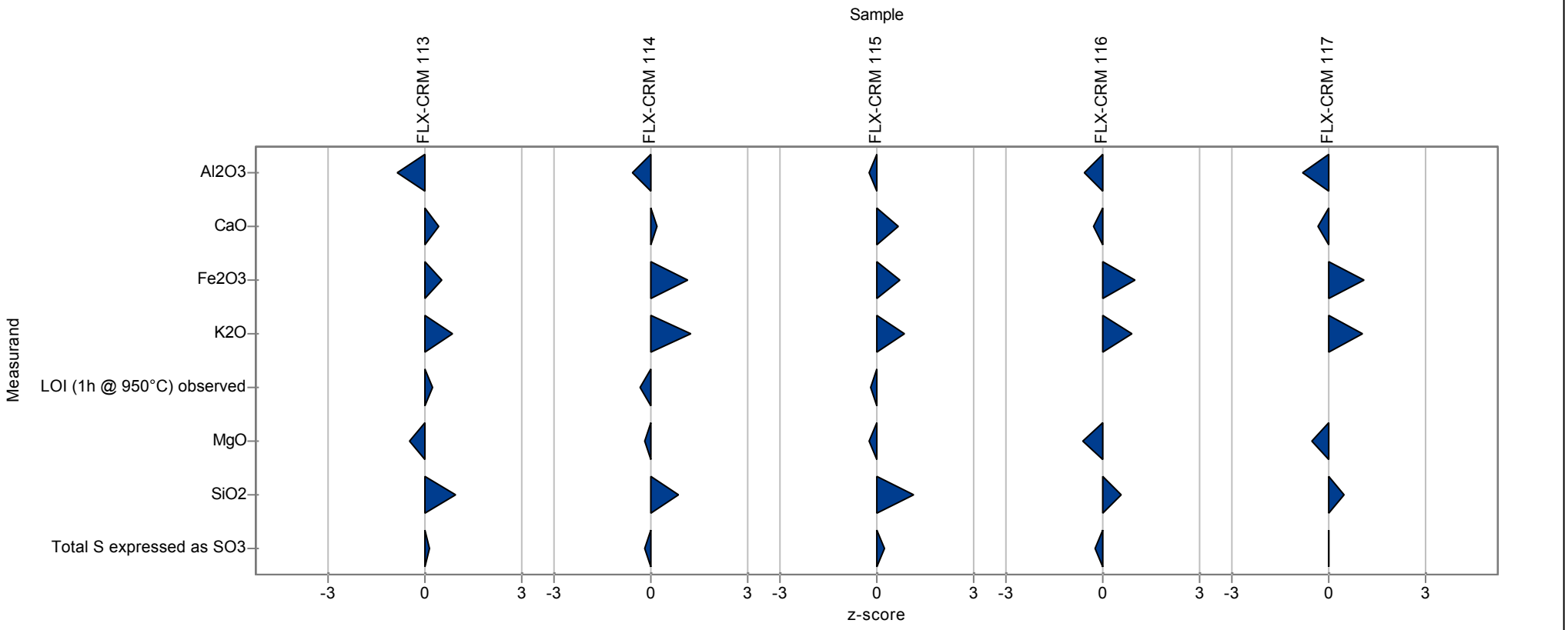
Laboratory: 27



RV113

Laboratory chart of z-scores

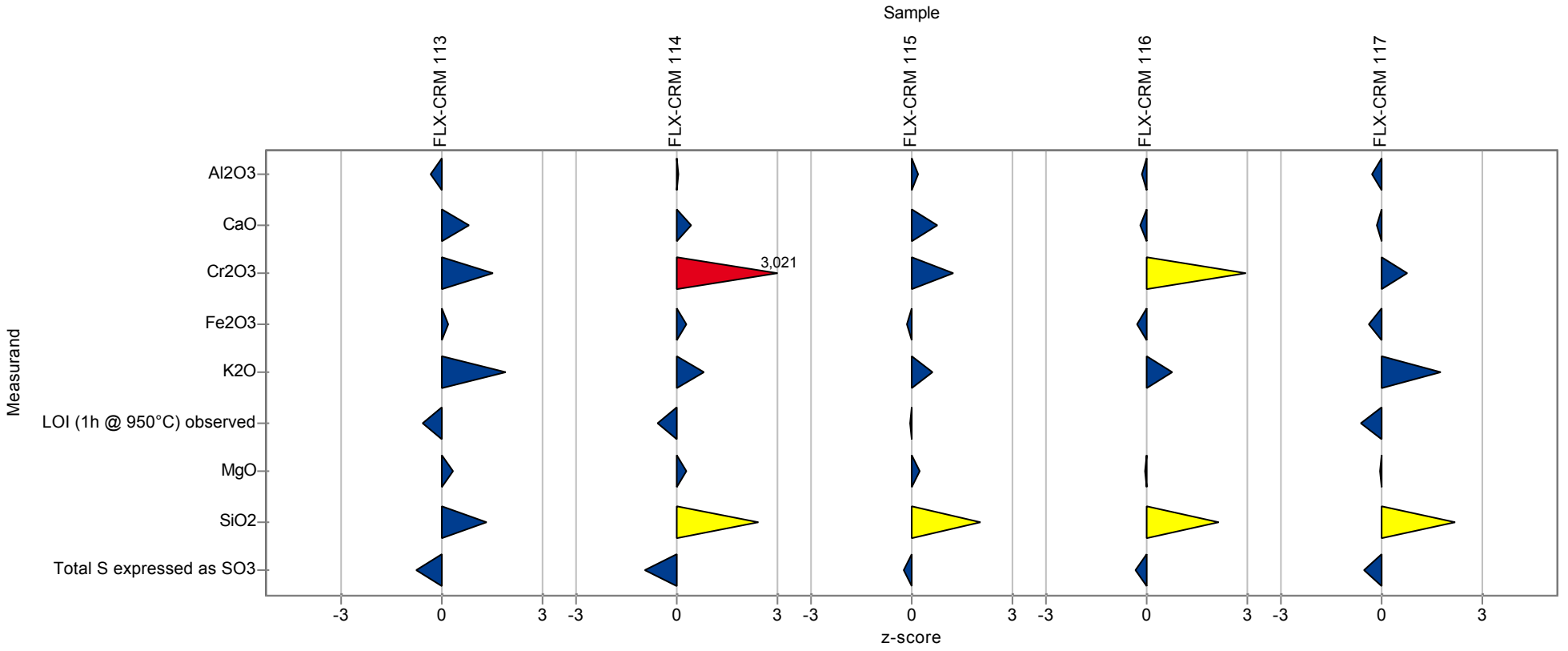
Laboratory: 28



RV113

Laboratory chart of z-scores

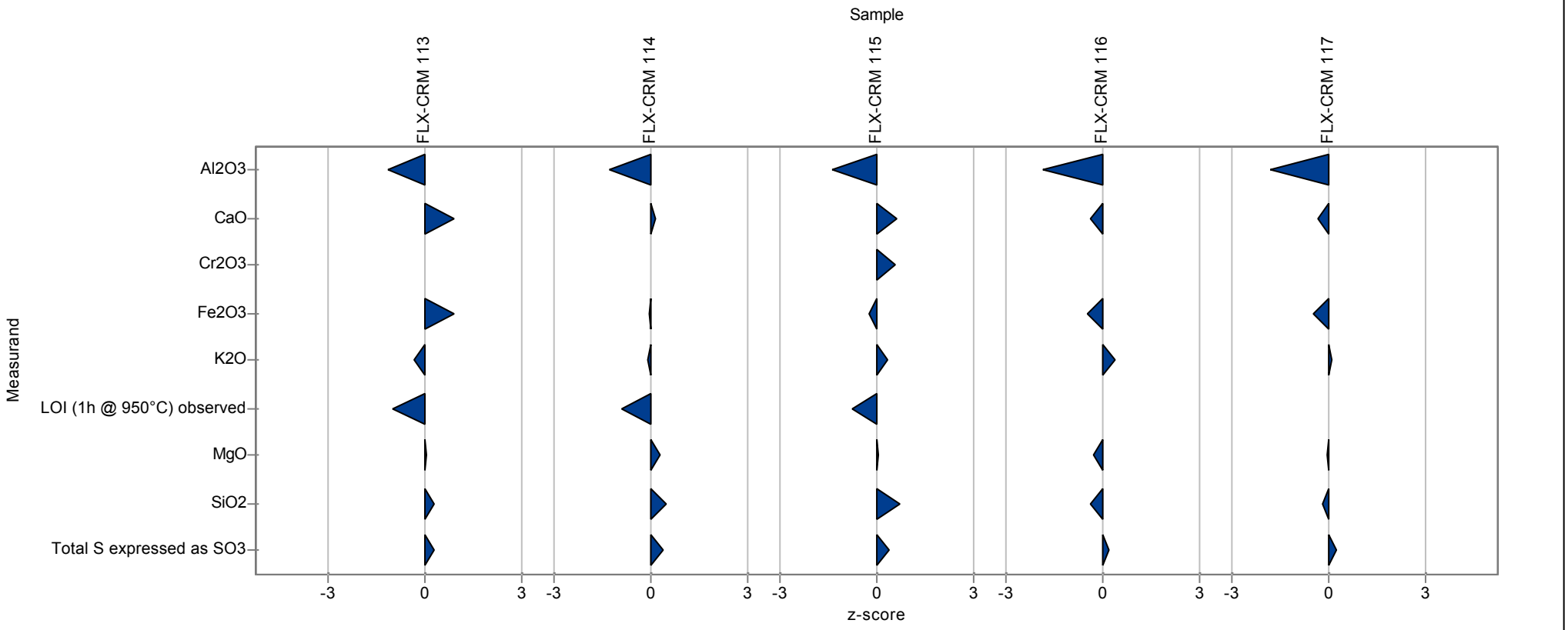
Laboratory: 29



RV113

Laboratory chart of z-scores

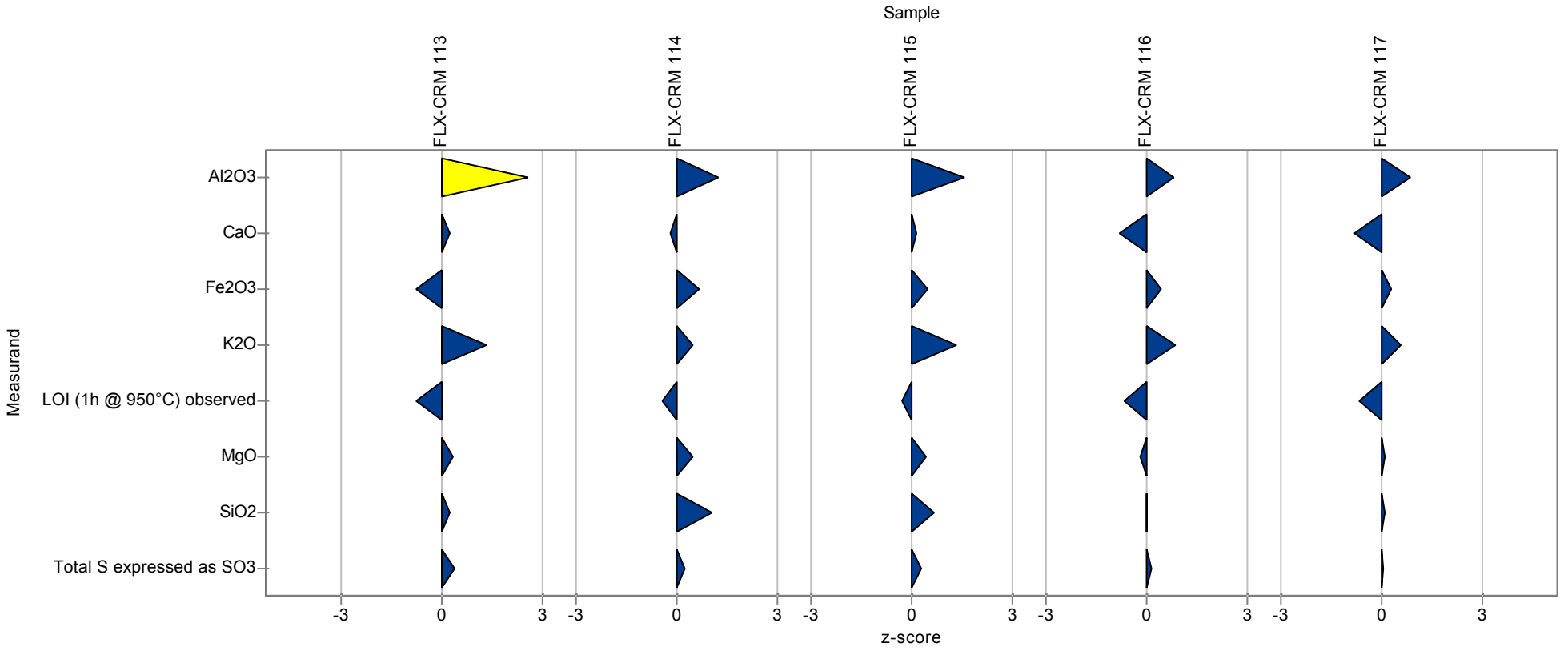
Laboratory: 30



RV113

Laboratory chart of z-scores

Laboratory: 31



RV113

Laboratory chart of z-scores

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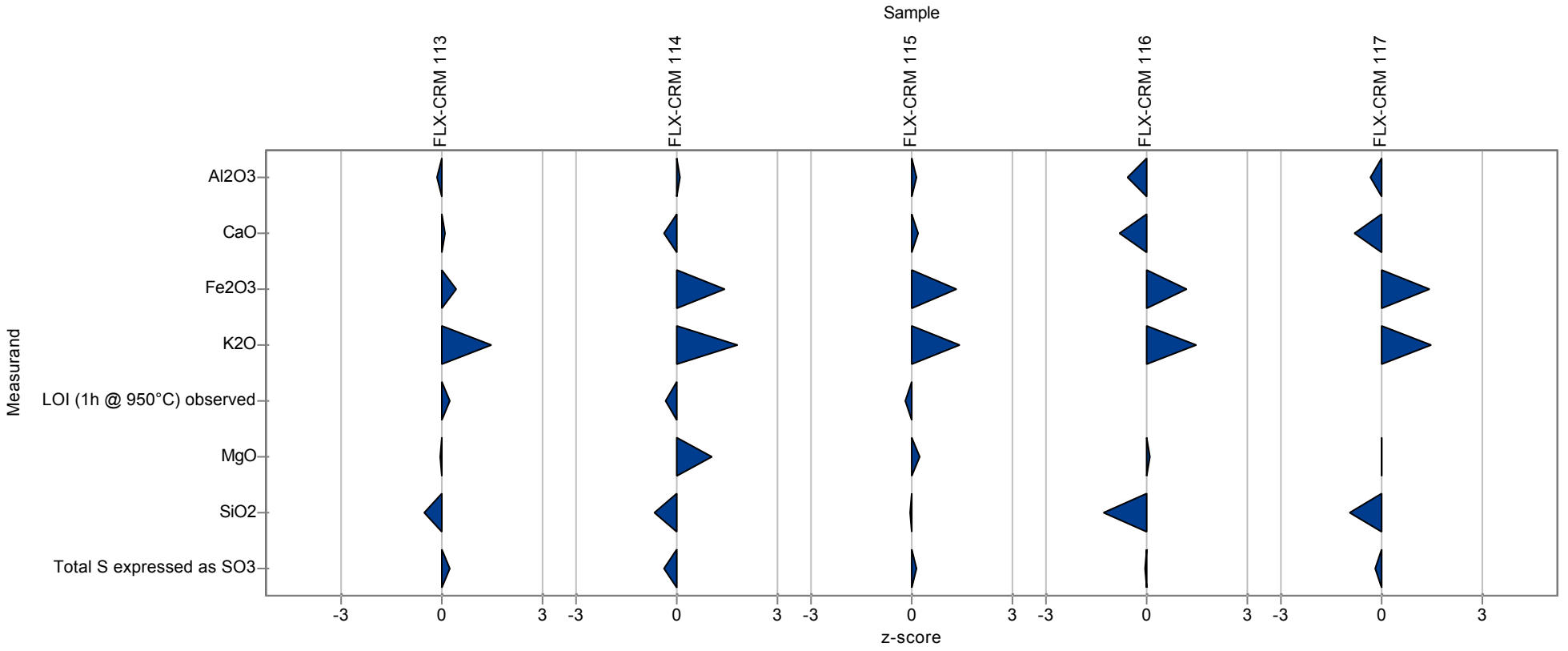
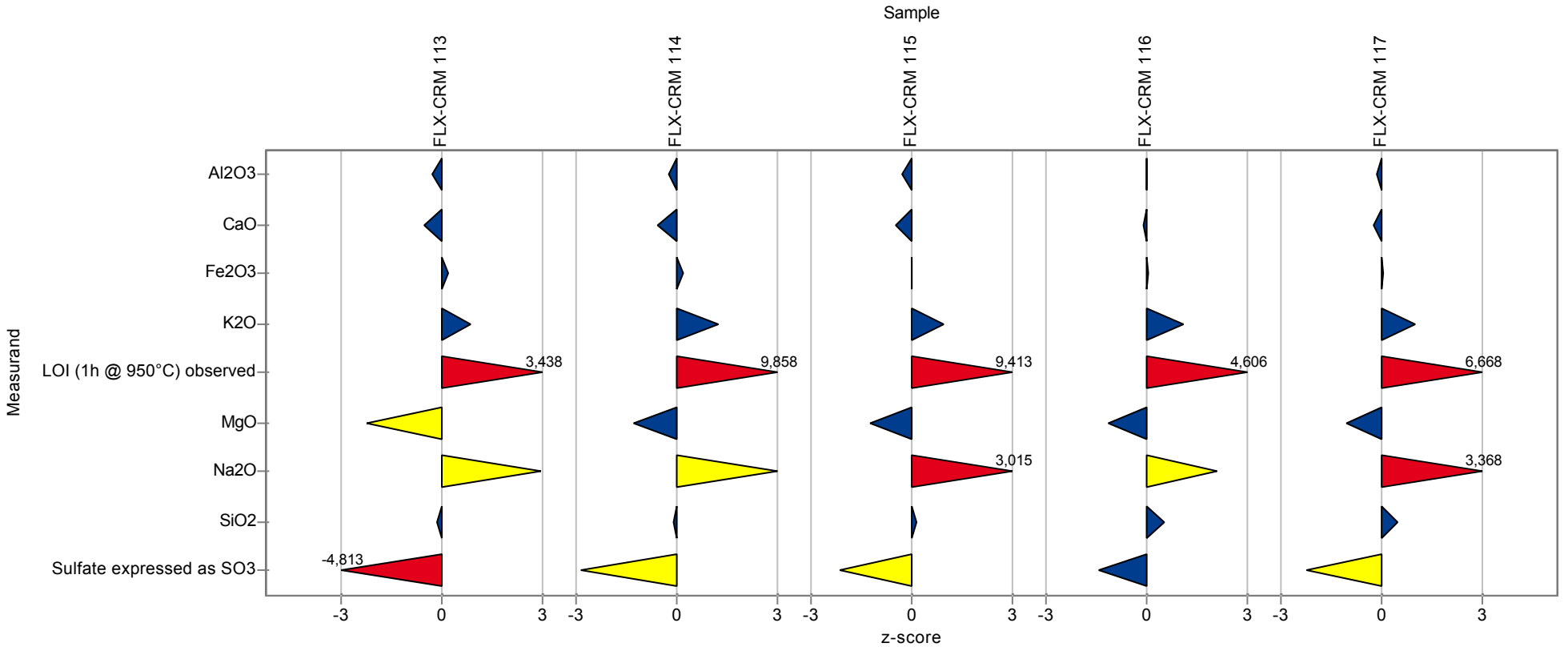


RV113

Laboratory chart of z-scores

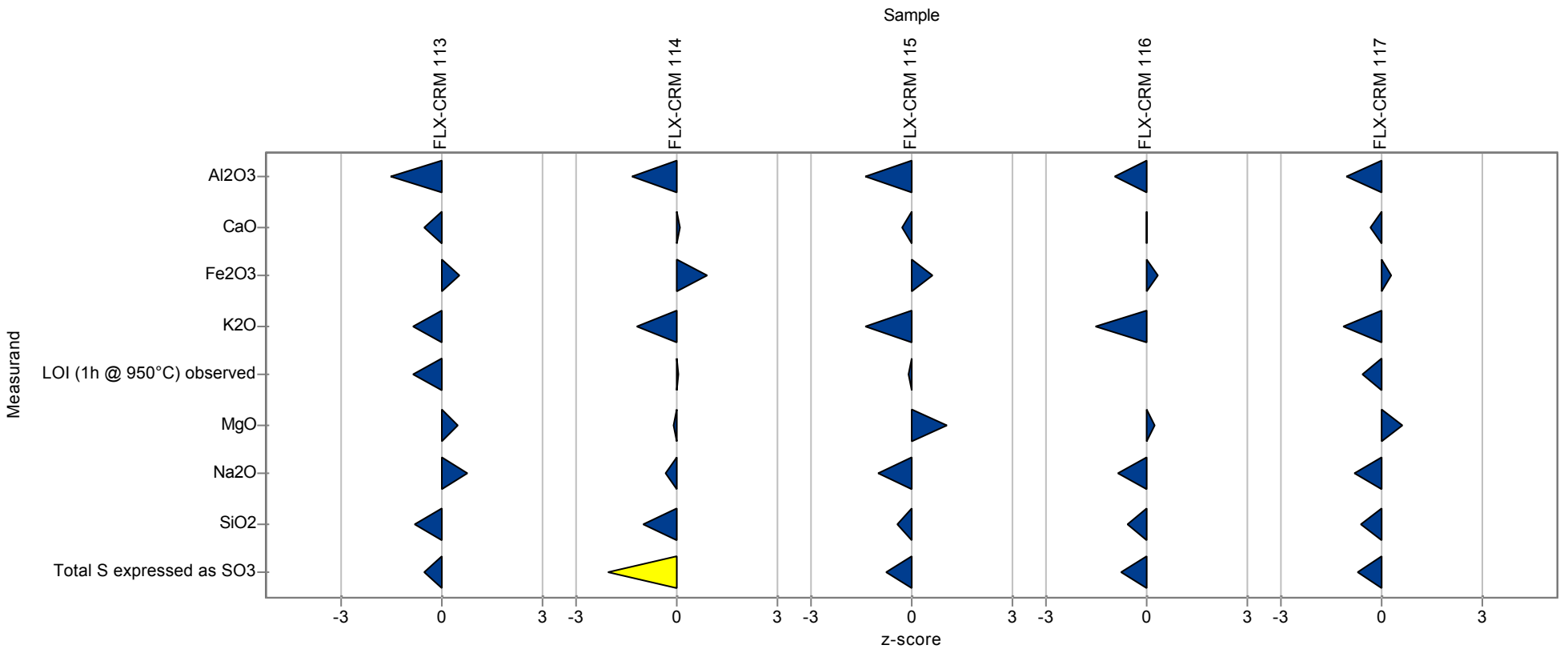
Laboratory: 33



RV113

Laboratory chart of z-scores

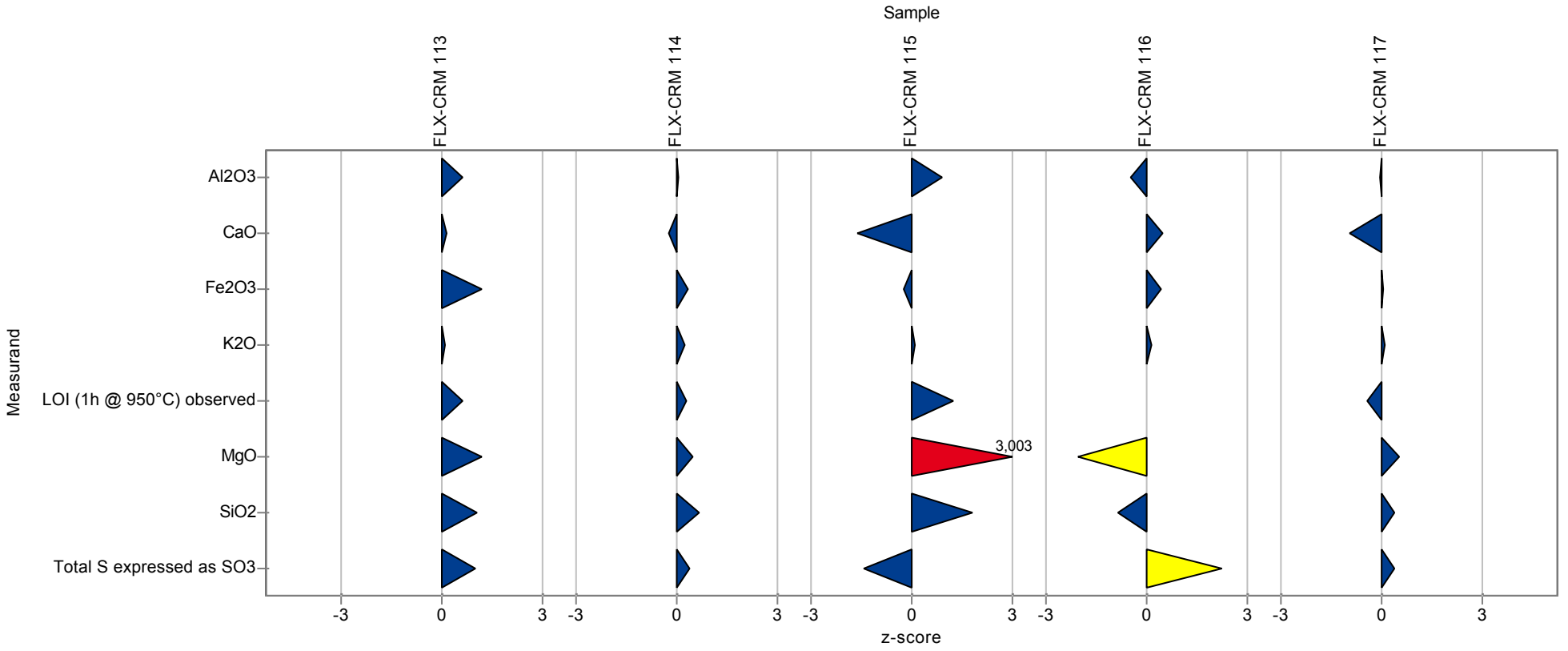
Laboratory: 34



RV113

Laboratory chart of z-scores

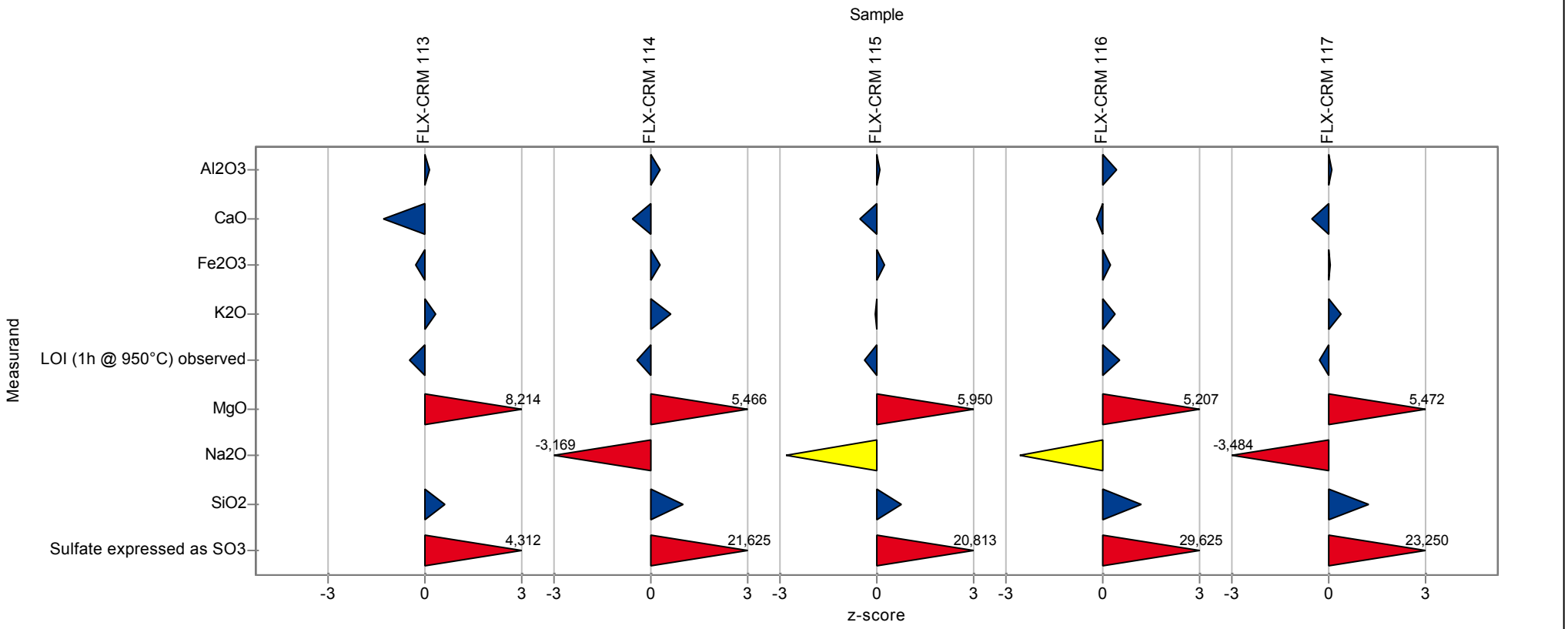
Laboratory: 37



RV113

Laboratory chart of z-scores

Laboratory: 38



RV113

Laboratory chart of z-scores

Laboratory: 39