

# IAEA-TEL-2017-03 Word Wide Open Proficiency Test Exercise, Pie-charts, S-Shapes and Reported Results with Scores

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## Abstract

This report contains the results and evaluation for the proficiency test conducted within the IAEA-TEL-2017-03 world wide open proficiency test exercise. The data is evaluated by the Terrestrial Environment Laboratory (TEL) of the NA Environment Laboratories using its standard approach for proficiency test evaluations.

## 1 Introduction

The following figures show the results (displayed in pie charts, characteristic S-shapes and tables) for the World-Wide Proficiency Test. In the S-shape graphs, the vertical axis displays the activity in [Bq/kg] and the horizontal axis the lab codes for the participating laboratories. The range on the vertical axis is limited to ( $\pm$  Maximum acceptable relative bias(MARB)). The red line is the target value for the exercise, whereas the green lines are the assigned uncertainty for each analyte. The results are grouped by samples, then analytes.

The data points are coloured in blue, yellow and red, corresponding to a result of "Accepted", "Warning", and "Not Accepted", respectively. In Sample 02 there are two pairs of radionuclides, Zr-95 - Nb-95 and Ba-140 - La-140, where the transient equilibrium makes a problematic decay correction for the daughter elements. For this reason, the results of Nb-95 and La-140 are displayed as information values only, and are shown without scores. Sample 02 also contained I-131 in very low concentration, close to the detection limit. This value is also displayed as an information value, considering the recommendation of the ISO 17043 standard.

The second part contains the results for intercomparison analytes, using the same displaying convention. Intercomparison analytes include gross alpha and beta (samples X-Y) as well as uncharacterised analytes evaluated by intercomparison of participant results. This type of evaluation is only performed for analytes where the number of the reported results exceeded ten.

*Disclaimer: This report has been generated automatically to provide information on-line to the participants. A more detailed evaluation will be published in the final report. If you find that any information provided in this report might be incorrect please contact us as soon as possible.*

## 1.1 Evaluation criterias

The data is evaluated according to the following steps:

The relative bias between the reported and the target value (the best estimation of the true value) is expressed by the following equation:

$$Bias_{relative} = \frac{Value_{reported} - Value_{target}}{Value_{target}} * 100\%$$

The relative bias is compared to the Maximum Acceptable Relative Bias (MARB) which has been determined for each measurand considering the physical background of radio-analytical methods including the level of radioactivity and the complexity of the task.

If the  $Bias_{relative} \leq MARB$ , the result will be "Accepted" for accuracy.

Based on fit for purpose and the good laboratory practice principles, the expanded relative combined uncertainty should cover the relative bias:

$$P = \sqrt{\frac{u_{target}}{A_{target}} + \frac{u_{reported}}{A_{reported}}} * 100$$

$$Bias_{relative} \leq k * P$$

where  $k$  is the coverage factor, for the 95% confidential level,  $k = 2.56$ . If the result is between the  $\pm MARB$  values, but it is not overlapping with the target value within their uncertainties, this equation helps to decide whether they are significantly different or not.

The  $P$  value is compared to the MARB also. If both the:

$$P \leq MARB$$

and

$$Bias_{relative} \leq k * P$$

are fulfilled, the reported results will be "Accepted" for the precision. If one of them is insufficient, the result will be assigned the "Not accepted" status for precision.

The final score according to the above detailed evaluation:

- "Accepted" when both, accuracy and precision achieved "Accepted" status
- "Not Accepted" when the accuracy is "Not accepted"
- "Warning" when accuracy is "Accepted" but the precision is "Not accepted"

As additional information a z-score parameter is shown in the evaluation tables that calculates by using the robust standard deviation described in [2] as:

$$z = \left| \frac{Value_{reported} - Value_{target}}{robustsd} \right|$$

If the analyte is included in the proficiency test evaluation schema, the stated target value is used to calculate the z-score. For those analytes, which are subject of an intercomparison only, the robust mean of the values reported is used instead.

## 2 Data Evaluation

A total of 224 laboratories from 60 different countries successfully reported data in the frame of the IAEA-TEL-2017-03 proficiency test exercise.

For each of the analytes in scope the target value, the target uncertainty and the MARB are listed. A pie chart showing the distribution of accepted results, warnings and not acceptable results, the s-shape plot and a detailed table listing all evaluation results for the isotope sorted by the laboratory code are provided.

## 3 Proficiency Test Parameters

### Reported Results for the H-3 Determination in Sample 1

TABLE 1. Target values

Parameter	Value
Massic Activity, [Bq/kg]	29.8
Uncertainty, [Bq/kg]	0.6
Maximum Acceptable Relative Bias, [%]	25

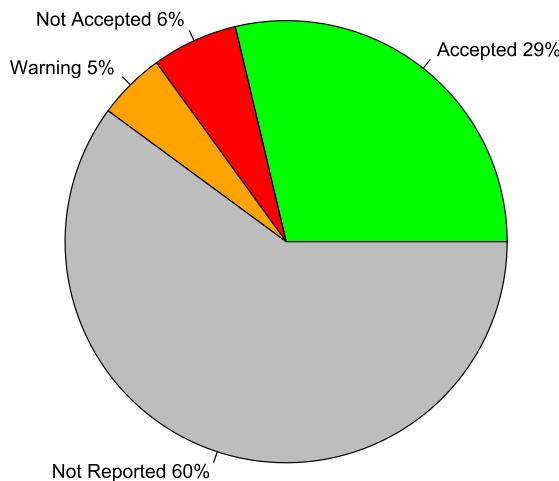


FIGURE 1. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

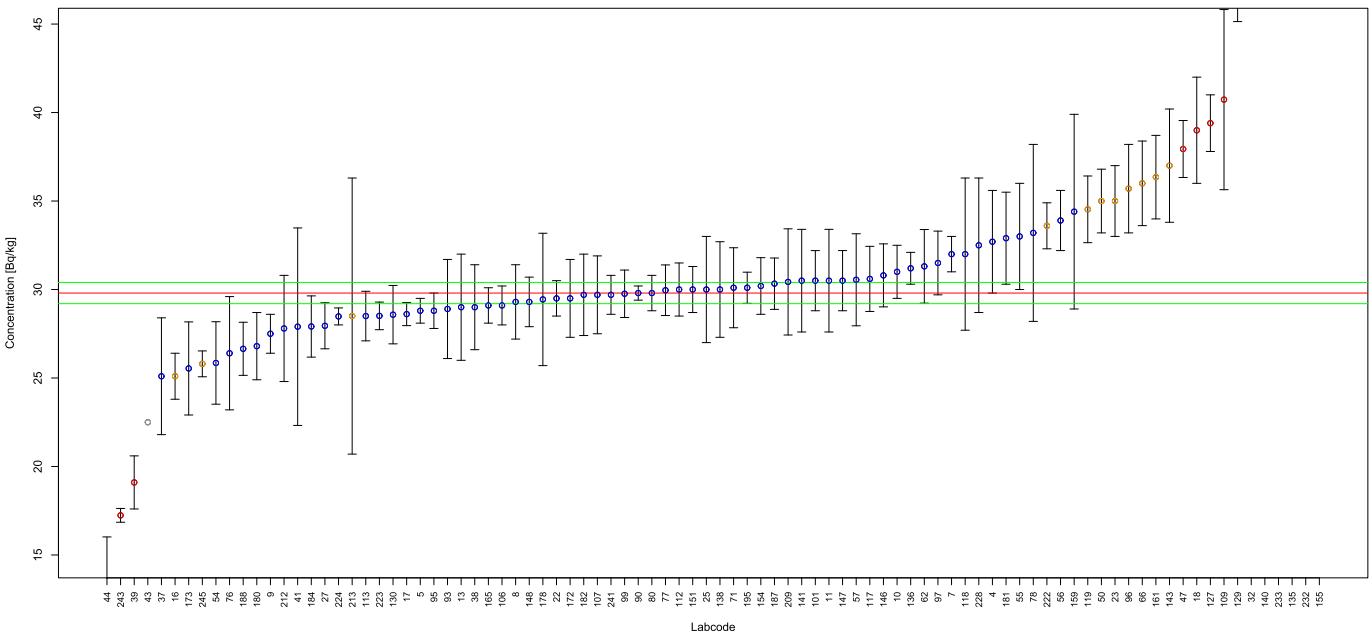


FIGURE 2. Reported results and evaluation parameters for H-3. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 2. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
4	32.7	2.9	9.73	0.98	9.09	A	A	A	1.11
5	28.8	0.7	-3.36	-1.08	3.16	A	A	A	0.38
7	32	1	7.38	1.89	3.72	A	A	A	0.84
8	29.3	2.1	-1.68	-0.23	7.44	A	A	A	0.19
9	27.5	1.1	-7.72	-1.84	4.48	A	A	A	0.88
10	31.0	1.5	4.03	0.74	5.24	A	A	A	0.46
11	30.5	2.9	2.35	0.24	9.72	A	A	A	0.27
13	29	3	-2.68	-0.26	10.54	A	A	A	0.31
16	25.1	1.3	-15.77	-3.28	5.56	A	N	W	1.80
17	28.61	0.65	-3.99	-1.35	3.04	A	A	A	0.46
18	39	3	30.87	3.01	7.95	N	N	N	3.53
22	29.5	1.0	-1.01	-0.26	3.94	A	A	A	0.12
23	35	2	17.45	2.49	6.06	A	N	W	1.99
25	30	3	0.67	0.07	10.20	A	A	A	0.08
27	27.95	1.30	-6.21	-1.29	5.07	A	A	A	0.71
32	59	8	97.99	3.64	13.71	N	N	N	11.20
37	25.1	3.3	-15.77	-1.40	13.30	A	A	A	1.80
38	29.0	2.4	-2.68	-0.32	8.52	A	A	A	0.31
39	19.1	1.5	-35.91	-6.62	8.11	N	N	N	4.10
41	27.90	5.58	-6.38	-0.34	20.10	A	A	A	0.73
43	22.5	-24.50				A			2.80
44	11.52	4.5	-61.34	-4.03	39.11	N	N	N	7.01
47	37.94	1.61	27.32	4.74	4.70	N	N	N	3.12
50	35.0	1.8	17.45	2.74	5.52	A	N	W	1.99
54	25.85	2.33	-13.26	-1.64	9.24	A	A	A	1.51
55	33	3	10.74	1.05	9.31	A	A	A	1.23
56	33.9	1.7	13.76	2.27	5.40	A	A	A	1.57
57	30.55	2.60	2.52	0.28	8.75	A	A	A	0.29
62	31.31	2.08	5.07	0.70	6.94	A	A	A	0.58
66	36	2.39	20.81	2.52	6.94	A	N	W	2.38

TABLE 2. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
71	30.1	2.26	1.01	0.13	7.77	A	A	A	0.12
76	26.4	3.2	-11.41	-1.04	12.29	A	A	A	1.30
77	29.96	1.43	0.54	0.10	5.18	A	A	A	0.06
78	33.2	5.0	11.41	0.68	15.19	A	A	A	1.30
80	29.8	1.0	0.00	0.00	3.91	A	A	A	0.00
90	29.8	0.4	0.00	0.00	2.42	A	A	A	0.00
93	28.9	2.8	-3.02	-0.31	9.90	A	A	A	0.35
95	28.8	1.0	-3.36	-0.86	4.01	A	A	A	0.38
96	35.7	2.5	19.80	2.29	7.29	A	N	W	2.26
97	31.5	1.8	5.70	0.90	6.06	A	A	A	0.65
99	29.76	1.34	-0.13	-0.03	4.93	A	A	A	0.02
101	30.5	1.7	2.35	0.39	5.93	A	A	A	0.27
106	29.1	1.1	-2.35	-0.56	4.28	A	A	A	0.27
107	29.7	2.2	-0.34	-0.04	7.68	A	A	A	0.04
109	40.73	5.09	36.68	2.13	12.66	N	N	N	4.19
112	30.0	1.5	0.67	0.12	5.39	A	A	A	0.08
113	28.5	1.4	-4.36	-0.85	5.31	A	A	A	0.50
117	30.6	1.84	2.68	0.41	6.34	A	A	A	0.31
118	32.0	4.3	7.38	0.51	13.59	A	A	A	0.84
119	34.531	1.884	15.88	2.39	5.82	A	N	W	1.81
127	39.4	1.6	32.21	5.62	4.53	N	N	N	3.68
129	48.56	3.42	62.95	5.40	7.32	N	N	N	7.19
130	28.58	1.65	-4.09	-0.69	6.11	A	A	A	0.47
135	82.4	12.3	176.51	4.27	15.06	N	N	N	20.17
136	31.2	0.9	4.70	1.29	3.52	A	A	A	0.54
138	30.0	2.7	0.67	0.07	9.22	A	A	A	0.08
139	28.5	1.17	-4.36	-0.99	4.57	A	A	A	0.50
140	61.2	5.1	105.37	6.11	8.57	N	N	N	12.04
141	30.5	2.9	2.35	0.24	9.72	A	A	A	0.27
143	37.0	3.2	24.16	2.21	8.88	A	N	W	2.76
146	30.8	1.78	3.36	0.53	6.12	A	A	A	0.38
147	30.5	1.7	2.35	0.39	5.93	A	A	A	0.27
148	29.3	1.4	-1.68	-0.33	5.19	A	A	A	0.19
151	30.0	1.3	0.67	0.14	4.78	A	A	A	0.08
154	30.2	1.6	1.34	0.23	5.67	A	A	A	0.15
155	147	15	393.29	7.81	10.40	N	N	N	44.94
159	34.4	5.5	15.44	0.83	16.11	A	A	A	1.76
161	36.35	2.36	21.98	2.69	6.80	A	N	W	2.51
165	29.1	1.0	-2.35	-0.60	3.98	A	A	A	0.27
172	29.5	2.2	-1.01	-0.13	7.72	A	A	A	0.12
173	25.54	2.63	-14.30	-1.58	10.49	A	A	A	1.63
178	29.44	3.74	-1.21	-0.10	12.86	A	A	A	0.14
180	26.8	1.9	-10.07	-1.51	7.37	A	A	A	1.15
181	32.9	2.6	10.40	1.16	8.16	A	A	A	1.19
182	29.7	2.3	-0.34	-0.04	8.00	A	A	A	0.04
184	27.91	1.73	-6.34	-1.03	6.52	A	A	A	0.72
187	30.33	1.45	1.78	0.34	5.19	A	A	A	0.20
188	26.65	1.50	-10.57	-1.95	5.98	A	A	A	1.21
195	30.1	0.88	1.01	0.28	3.55	A	A	A	0.12
209	30.43	3.00	2.11	0.21	10.06	A	A	A	0.24
212	27.8	3.0	-6.71	-0.65	10.98	A	A	A	0.77
213	28.5	7.8	-4.36	-0.17	27.44	A	N	W	0.50
222	33.6	1.3	12.75	2.65	4.36	A	N	W	1.46
223	28.51	0.78	-4.33	-1.31	3.40	A	A	A	0.49

TABLE 2. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
224	28.48	0.48	-4.43	-1.72	2.63	A	A	A	0.51
228	32.5	3.8	9.06	0.70	11.86	A	A	A	1.04
232	89	22	198.66	2.69	24.80	N	N	N	22.70
233	81.3	7.5	172.82	6.84	9.44	N	N	N	19.75
241	29.7	1.1	-0.34	-0.08	4.22	A	A	A	0.04
243	17.24	0.39	-42.15	-17.55	3.03	N	N	N	4.82
245	25.8	0.73	-13.42	-4.23	3.47	A	N	W	1.53

## Reported Results for the Sr-90 Determination in Sample 1

TABLE 3. Target values

Parameter	Value
Massic Activity, [Bq/kg]	11.2
Uncertainty, [Bq/kg]	0.3
Maximum Acceptable Relative Bias, [%]	20

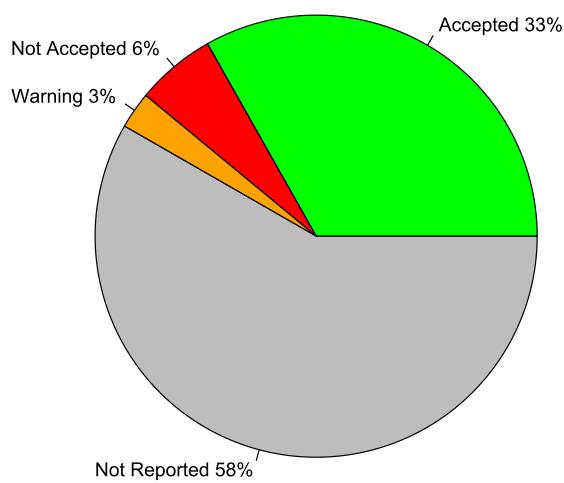


FIGURE 3. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

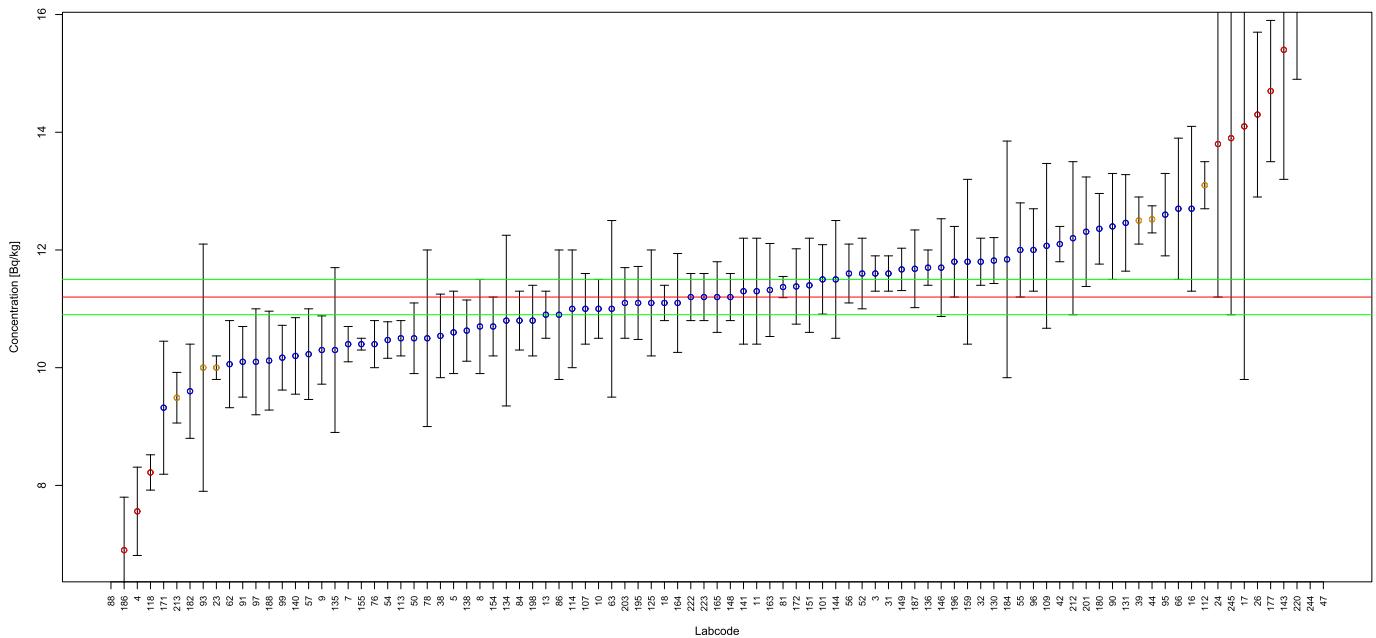


FIGURE 4. Reported results and evaluation parameters for Sr-90. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 4. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
3	11.6	0.3	3.57	0.94	3.72	A	A	A	0.37
4	7.56	0.75	-32.50	-4.51	10.28	N	N	N	3.40
5	10.6	0.7	-5.36	-0.79	7.13	A	A	A	0.56
7	10.4	0.3	-7.14	-1.89	3.94	A	A	A	0.75
8	10.7	0.8	-4.46	-0.59	7.94	A	A	A	0.47
9	10.30	0.58	-8.04	-1.38	6.24	A	A	A	0.84
10	11.0	0.5	-1.79	-0.34	5.28	A	A	A	0.19
11	11.3	0.9	0.89	0.11	8.40	A	A	A	0.09
13	10.9	0.4	-2.68	-0.60	4.54	A	A	A	0.28
16	12.7	1.4	13.39	1.05	11.34	A	A	A	1.40
17	14.1	4.3	25.89	0.67	30.61	N	N	N	2.71
18	11.1	0.3	-0.89	-0.24	3.81	A	A	A	0.09
23	10.0	0.2	-10.71	-3.33	3.34	A	N	W	1.12
24	13.8	2.6	23.21	0.99	19.03	N	A	N	2.43
26	14.3	1.4	27.68	2.17	10.15	N	N	N	2.90
31	11.6	0.3	3.57	0.94	3.72	A	A	A	0.37
32	11.8	0.4	5.36	1.20	4.32	A	A	A	0.56
38	10.54	0.71	-5.89	-0.86	7.25	A	A	A	0.62
39	12.5	0.4	11.61	2.60	4.17	A	N	W	1.21
42	12.1	0.3	8.04	2.12	3.65	A	A	A	0.84
44	12.52	0.23	11.79	3.49	3.25	A	N	W	1.23
47	22.20	0.24	98.21	28.63	2.89	N	N	N	10.28
50	10.5	0.6	-6.25	-1.04	6.31	A	A	A	0.65
52	11.6	0.6	3.57	0.60	5.82	A	A	A	0.37
54	10.47	0.31	-6.52	-1.69	3.99	A	A	A	0.68
55	12.0	0.8	7.14	0.94	7.18	A	A	A	0.75
56	11.6	0.5	3.57	0.69	5.07	A	A	A	0.37
57	10.23	0.77	-8.66	-1.17	7.99	A	A	A	0.91
62	10.06	0.74	-10.18	-1.43	7.83	A	A	A	1.07
63	11.0	1.5	-1.79	-0.13	13.90	A	A	A	0.19

TABLE 4. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
66	12.7	1.20	13.39	1.21	9.82	A	A	A	1.40
76	10.4	0.4	-7.14	-1.60	4.69	A	A	A	0.75
78	10.5	1.5	-6.25	-0.46	14.53	A	A	A	0.65
81	11.37	0.18	1.52	0.49	3.11	A	A	A	0.16
84	10.8	0.5	-3.57	-0.69	5.35	A	A	A	0.37
86	10.9	1.1	-2.68	-0.26	10.44	A	A	A	0.28
88	2.89	0.18	-74.20	-23.75	6.78	N	N	N	7.77
90	12.4	0.9	10.71	1.26	7.74	A	A	A	1.12
91	10.1	0.6	-9.82	-1.64	6.52	A	A	A	1.03
93	10.0	2.1	-10.71	-0.57	21.17	A	N	W	1.12
95	12.6	0.7	12.50	1.84	6.17	A	A	A	1.31
96	12.0	0.7	7.14	1.05	6.42	A	A	A	0.75
97	10.1	0.9	-9.82	-1.16	9.30	A	A	A	1.03
99	10.17	0.55	-9.20	-1.64	6.04	A	A	A	0.96
101	11.5	0.59	2.68	0.45	5.79	A	A	A	0.28
107	11.0	0.6	-1.79	-0.30	6.08	A	A	A	0.19
109	12.07	1.4	7.77	0.61	11.90	A	A	A	0.81
112	13.1	0.4	16.96	3.80	4.06	A	N	W	1.78
113	10.5	0.3	-6.25	-1.65	3.92	A	A	A	0.65
114	11	1	-1.79	-0.19	9.48	A	A	A	0.19
118	8.22	0.3	-26.61	-7.02	4.53	N	N	N	2.78
125	11.1	0.9	-0.89	-0.11	8.54	A	A	A	0.09
130	11.82	0.39	5.54	1.26	4.25	A	A	A	0.58
131	12.46	0.82	11.25	1.44	7.11	A	A	A	1.18
134	10.80	1.45	-3.57	-0.27	13.69	A	A	A	0.37
135	10.3	1.4	-8.04	-0.63	13.85	A	A	A	0.84
136	11.7	0.3	4.46	1.18	3.71	A	A	A	0.47
138	10.63	0.52	-5.09	-0.95	5.58	A	A	A	0.53
139	11.5	0.59	2.68	0.45	5.79	A	A	A	0.28
140	10.2	0.65	-8.93	-1.40	6.91	A	A	A	0.93
141	11.3	0.9	0.89	0.11	8.40	A	A	A	0.09
143	15.4	2.2	37.50	1.89	14.53	N	N	N	3.93
144	11.5	1	2.68	0.29	9.10	A	A	A	0.28
146	11.7	0.83	4.46	0.57	7.58	A	A	A	0.47
148	11.2	0.4	0.00	0.00	4.46	A	A	A	0.00
149	11.67	0.36	4.20	1.00	4.09	A	A	A	0.44
151	11.4	0.8	1.79	0.23	7.51	A	A	A	0.19
154	10.7	0.5	-4.46	-0.86	5.39	A	A	A	0.47
155	10.4	0.1	-7.14	-2.53	2.85	A	A	A	0.75
159	11.8	1.4	5.36	0.42	12.16	A	A	A	0.56
163	11.32	0.79	1.07	0.14	7.48	A	A	A	0.11
164	11.1	0.84	-0.89	-0.11	8.03	A	A	A	0.09
165	11.2	0.6	0.00	0.00	5.99	A	A	A	0.00
171	9.32	1.13	-16.79	-1.61	12.42	A	A	A	1.76
172	11.38	0.64	1.61	0.25	6.23	A	A	A	0.17
177	14.7	1.2	31.25	2.83	8.59	N	N	N	3.27
180	12.36	0.6	10.36	1.73	5.54	A	A	A	1.08
182	9.6	0.8	-14.29	-1.87	8.75	A	A	A	1.50
184	11.84	2.01	5.71	0.31	17.19	A	A	A	0.60
186	6.9	0.9	-38.39	-4.53	13.32	N	N	N	4.02
187	11.68	0.66	4.29	0.66	6.25	A	A	A	0.45
188	10.12	0.84	-9.64	-1.21	8.72	A	A	A	1.01
195	11.1	0.62	-0.89	-0.15	6.19	A	A	A	0.09
196	11.8	0.6	5.36	0.89	5.75	A	A	A	0.56

TABLE 4. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
198	10.8	0.6	-3.57	-0.60	6.17	A	A	A	0.37
201	12.31	0.93	9.91	1.14	8.02	A	A	A	1.04
203	11.1	0.6	-0.89	-0.15	6.03	A	A	A	0.09
212	12.2	1.3	8.93	0.75	10.99	A	A	A	0.93
213	9.49	0.43	-15.27	-3.26	5.26	A	N	W	1.60
220	16.9	2.0	50.89	2.82	12.13	N	N	N	5.33
222	11.2	0.4	0.00	0.00	4.46	A	A	A	0.00
223	11.2	0.4	0.00	0.00	4.46	A	A	A	0.00
244	17.67	1.23	57.77	5.11	7.46	N	N	N	6.05
245	13.9	3	24.11	0.90	21.75	N	N	N	2.52

## **Reported Results for the Ba-133 Determination in Sample 1**

TABLE 5. Target values

Parameter	Value
Massic Activity, [Bq/kg]	16.9
Uncertainty, [Bq/kg]	0.5
Maximum Acceptable Relative Bias, [%]	15

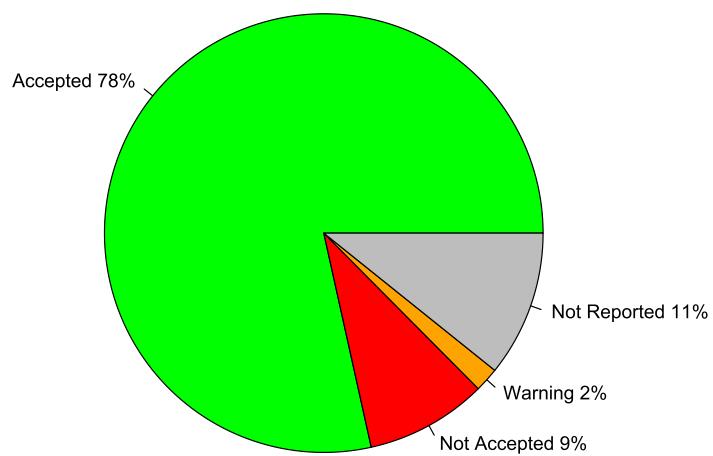


FIGURE 5. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

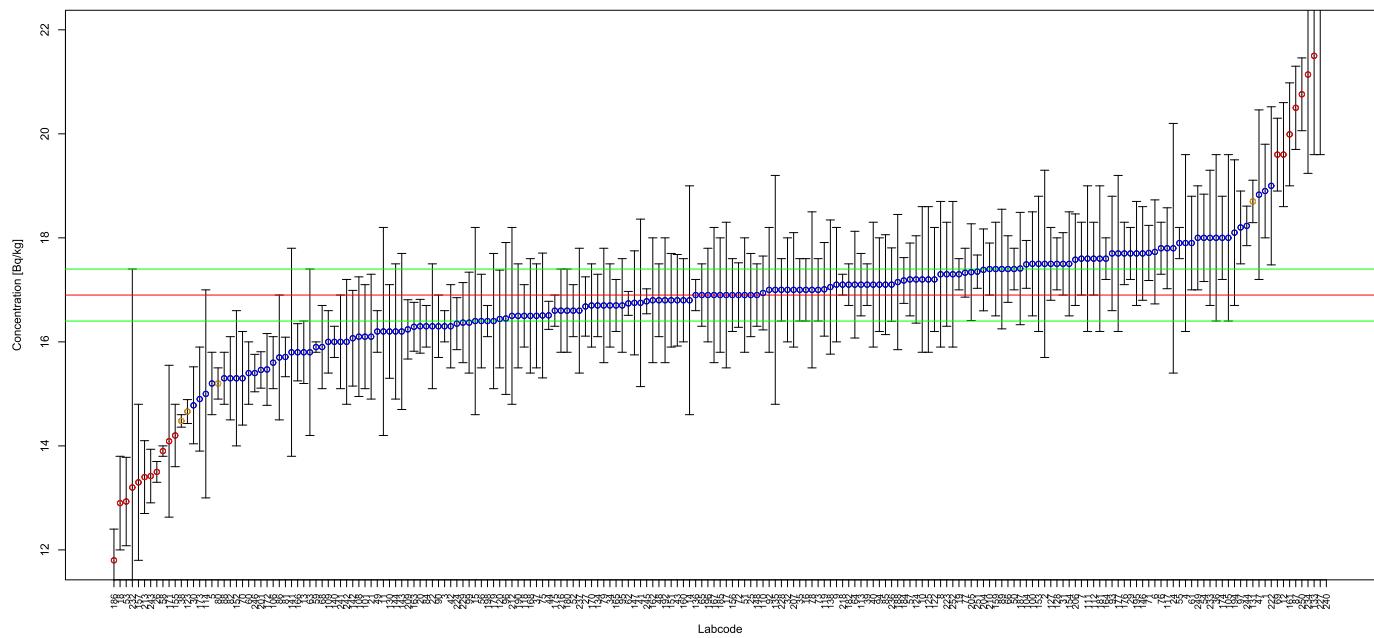


FIGURE 6. Reported results and evaluation parameters for Ba-133. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 6. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	18.9	0.9	11.83	1.94	5.61	A	A	A	2.18
2	17.5	1.8	3.55	0.32	10.70	A	A	A	0.66
3	16.3	0.3	-3.55	-1.03	3.48	A	A	A	0.66
4	17.9	1.7	5.92	0.56	9.95	A	A	A	1.09
5	15.2	0.6	-10.06	-2.18	4.93	A	A	A	1.86
6	17.73	1.00	4.91	0.74	6.37	A	A	A	0.91
7	17.6	0.7	4.14	0.81	4.96	A	A	A	0.76
8	17.3	1.4	2.37	0.27	8.62	A	A	A	0.44
9	17.1	1.1	1.18	0.17	7.08	A	A	A	0.22
10	17.2	1.4	1.78	0.20	8.66	A	A	A	0.33
11	16.2	2.0	-4.14	-0.34	12.70	A	A	A	0.76
12	19.6	1	15.98	2.41	5.90	N	N	N	2.95
13	15.8	0.6	-6.51	-1.41	4.81	A	A	A	1.20
14	16.8	2.2	-0.59	-0.04	13.43	A	A	A	0.11
15	16.4	1.8	-2.96	-0.27	11.37	A	A	A	0.55
16	17.0	0.6	0.59	0.13	4.61	A	A	A	0.11
17	16.9	1.4	0.00	0.00	8.80	A	A	A	0.00
18	12.9	0.9	-23.67	-3.89	7.58	N	N	N	4.37
19	17.3	0.30	2.37	0.69	3.43	A	A	A	0.44
20	16.3	0.517	-3.55	-0.83	4.34	A	A	A	0.66
21	16.1	1.2	-4.73	-0.62	8.02	A	A	A	0.87
22	16.3	1.2	-3.55	-0.46	7.93	A	A	A	0.66
24	17.8	2.4	5.33	0.37	13.80	A	A	A	0.98
25	16.9	0.8	0.00	0.00	5.58	A	A	A	0.00
26	13.5	0.2	-20.12	-6.31	3.31	N	N	N	3.71
27	16.68	0.57	-1.30	-0.29	4.52	A	A	A	0.24
29	17.7	0.5	4.73	1.13	4.09	A	A	A	0.87
30	14.78	0.74	-12.54	-2.37	5.82	A	A	A	2.32
31	17.5	0.6	3.55	0.77	4.53	A	A	A	0.66
32	17	1	0.59	0.09	6.58	A	A	A	0.11

TABLE 6. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
34	16.7	0.8	-1.18	-0.21	5.63	A	A	A	0.22
35	17	0.6	0.59	0.13	4.61	A	A	A	0.11
36	18.0	1.6	6.51	0.66	9.37	A	A	A	1.20
37	16.5	1	-2.37	-0.36	6.74	A	A	A	0.44
38	14.48	0.12	-14.32	-4.71	3.07	A	N	W	2.64
39	17.1	0.4	1.18	0.31	3.77	A	A	A	0.22
40	17.1	1.2	1.18	0.15	7.62	A	A	A	0.22
41	16.75	1.61	-0.89	-0.09	10.06	A	A	A	0.16
42	16.3	0.8	-3.55	-0.64	5.73	A	A	A	0.66
43	16.8	0.88	-0.59	-0.10	6.02	A	A	A	0.11
44	16.51	0.27	-2.31	-0.69	3.38	A	A	A	0.43
47	18.83	1.63	11.42	1.13	9.15	A	A	A	2.11
48	16.8	0.7	-0.59	-0.12	5.11	A	A	A	0.11
49	16.2	0.4	-4.14	-1.09	3.85	A	A	A	0.76
50	17.4	0.4	2.96	0.78	3.75	A	A	A	0.55
51	16.9	1.1	0.00	0.00	7.15	A	A	A	0.00
52	16.6	0.5	-1.78	-0.42	4.22	A	A	A	0.33
53	12.93	0.85	-23.49	-4.03	7.21	N	N	N	4.34
54	18.00	0.84	6.51	1.13	5.53	A	A	A	1.20
55	17.9	0.3	5.92	1.71	3.40	A	A	A	1.09
56	16.4	0.9	-2.96	-0.49	6.23	A	A	A	0.55
57	17.2	0.7	1.78	0.35	5.03	A	A	A	0.33
58	13.9	0.1	-17.75	-5.88	3.04	N	N	N	3.28
59	15.9	0.1	-5.92	-1.96	3.02	A	A	A	1.09
60	15.4	0.6	-8.88	-1.92	4.89	A	A	A	1.64
61	17.9	0.9	5.92	0.97	5.83	A	A	A	1.09
62	16.74	0.23	-0.95	-0.29	3.26	A	A	A	0.17
63	15.8	1.6	-6.51	-0.66	10.55	A	A	A	1.20
64	17.1	1.026	1.18	0.18	6.69	A	A	A	0.22
65	16.9	0.6	0.00	0.00	4.62	A	A	A	0.00
66	17.4	0.64	2.96	0.62	4.72	A	A	A	0.55
68	15.9	0.8	-5.92	-1.06	5.84	A	A	A	1.09
69	19.6	0.7	15.98	3.14	4.64	N	N	N	2.95
70	15.3	0.9	-9.47	-1.55	6.58	A	A	A	1.75
71	17.71	0.53	4.79	1.11	4.21	A	A	A	0.88
72	16.9	0.62	0.00	0.00	4.71	A	A	A	0.00
73	17.0	0.6	0.59	0.13	4.61	A	A	A	0.11
75	16.507	1.20	-2.33	-0.30	7.85	A	A	A	0.43
76	17.8	0.5	5.33	1.27	4.08	A	A	A	0.98
77	17.33	0.47	2.54	0.63	4.01	A	A	A	0.47
78	17.0	1.5	0.59	0.06	9.31	A	A	A	0.11
79	16.7	1.1	-1.18	-0.17	7.22	A	A	A	0.22
80	15.2	0.3	-10.06	-2.92	3.56	A	N	W	1.86
81	15.71	0.38	-7.04	-1.89	3.82	A	A	A	1.30
82	15.3	0.8	-9.47	-1.70	6.01	A	A	A	1.75
84	16.3	0.4	-3.55	-0.94	3.84	A	A	A	0.66
85	17.10	0.96	1.18	0.18	6.35	A	A	A	0.22
86	15.7	1.2	-7.10	-0.92	8.20	A	A	A	1.31
87	20.5	0.8	21.30	3.82	4.90	N	N	N	3.93
88	15.3	0.5	-9.47	-2.26	4.41	A	A	A	1.75
89	17.4	1.15	2.96	0.40	7.24	A	A	A	0.55
90	16.3	0.6	-3.55	-0.77	4.72	A	A	A	0.66
92	17.0	1.2	0.59	0.08	7.65	A	A	A	0.11
93	17.7	1.1	4.73	0.66	6.88	A	A	A	0.87

TABLE 6. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
94	17.1	0.9	1.18	0.19	6.04	A	A	A	0.22
95	16.7	0.9	-1.18	-0.19	6.15	A	A	A	0.22
96	16.45	1.46	-2.66	-0.29	9.36	A	A	A	0.49
97	18.2	0.7	7.69	1.51	4.85	A	A	A	1.42
99	16.37	0.97	-3.14	-0.49	6.62	A	A	A	0.58
100	17.5	1.0	3.55	0.54	6.43	A	A	A	0.66
101	16.1	1.0	-4.73	-0.72	6.88	A	A	A	0.87
104	17.49	0.46	3.49	0.87	3.96	A	A	A	0.64
105	18.0	1.6	6.51	0.66	9.37	A	A	A	1.20
106	15.6	0.5	-7.69	-1.84	4.36	A	A	A	1.42
108	16.10	1.15	-4.73	-0.64	7.73	A	A	A	0.87
109	16.0	0.60	-5.33	-1.15	4.78	A	A	A	0.98
110	16.94	0.71	0.24	0.05	5.13	A	A	A	0.04
111	17.6	1.4	4.14	0.47	8.49	A	A	A	0.76
112	17.6	0.7	4.14	0.81	4.96	A	A	A	0.76
113	17.1	0.6	1.18	0.26	4.59	A	A	A	0.22
114	15	2	-11.24	-0.92	13.66	A	A	A	2.08
117	17.8	0.778	5.33	0.97	5.28	A	A	A	0.98
118	16.5	0.6	-2.37	-0.51	4.69	A	A	A	0.44
119	17.01	0.9	0.65	0.11	6.06	A	A	A	0.12
120	16.44	0.94	-2.72	-0.43	6.44	A	A	A	0.50
122	17.2	1.0	1.78	0.27	6.52	A	A	A	0.33
123	14.66	0.23	-13.25	-4.07	3.35	A	N	W	2.45
124	17.2	0.84	1.78	0.31	5.71	A	A	A	0.33
125	17.2	1.4	1.78	0.20	8.66	A	A	A	0.33
127	17.5	0.7	3.55	0.70	4.98	A	A	A	0.66
128	17.5	0.5	3.55	0.85	4.11	A	A	A	0.66
130	16.2	0.9	-4.14	-0.68	6.29	A	A	A	0.76
131	18.7	0.408	10.65	2.79	3.68	A	N	W	1.97
133	21.5	1.9	27.22	2.34	9.32	N	N	N	5.02
134	16.7	0.6	-1.18	-0.26	4.65	A	A	A	0.22
135	17.0	2.2	0.59	0.04	13.28	A	A	A	0.11
136	16.9	0.3	0.00	0.00	3.45	A	A	A	0.00
138	17.054	1.290	0.91	0.11	8.12	A	A	A	0.17
139	16.7	1.11	-1.18	-0.16	7.28	A	A	A	0.22
140	16.0	0.3	-5.33	-1.54	3.50	A	A	A	0.98
141	15.8	2.0	-6.51	-0.53	13.00	A	A	A	1.20
142	16.07	0.92	-4.91	-0.79	6.44	A	A	A	0.91
143	16.2	1.5	-4.14	-0.44	9.72	A	A	A	0.76
144	16.2	1.3	-4.14	-0.50	8.55	A	A	A	0.76
146	17.7	0.9	4.73	0.78	5.88	A	A	A	0.87
147	16.75	1.00	-0.89	-0.13	6.66	A	A	A	0.16
148	16.9	0.6	0.00	0.00	4.62	A	A	A	0.00
151	16.8	0.9	-0.59	-0.10	6.12	A	A	A	0.11
152	15.3	1.3	-9.47	-1.15	9.00	A	A	A	1.75
153	17.5	1.3	3.55	0.43	8.00	A	A	A	0.66
154	17.5	1.0	3.55	0.54	6.43	A	A	A	0.66
155	14.2	0.6	-15.98	-3.46	5.16	N	N	N	2.95
156	16.9	0.7	0.00	0.00	5.09	A	A	A	0.00
157	13.3	1.5	-21.30	-2.28	11.66	N	A	N	3.93
159	17.4	0.9	2.96	0.49	5.96	A	A	A	0.55
160	16.8	0.8	-0.59	-0.11	5.61	A	A	A	0.11
161	19.99	0.99	18.28	2.79	5.77	N	N	N	3.37
162	16.8	1.2	-0.59	-0.08	7.73	A	A	A	0.11

TABLE 6. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
163	16.29	0.47	-3.61	-0.89	4.13	A	A	A	0.67
164	17.6	0.4	4.14	1.09	3.73	A	A	A	0.76
165	16.7	0.5	-1.18	-0.28	4.21	A	A	A	0.22
166	15.80	0.55	-6.51	-1.48	4.57	A	A	A	1.20
167	16.9	1.3	0.00	0.00	8.24	A	A	A	0.00
168	16.5	1.1	-2.37	-0.33	7.29	A	A	A	0.44
170	16.7	0.8	-1.18	-0.21	5.63	A	A	A	0.22
171	14.09	1.46	-16.63	-1.82	10.78	N	A	N	3.07
172	15.47	0.69	-8.46	-1.68	5.35	A	A	A	1.56
173	14.90	1.00	-11.83	-1.79	7.33	A	A	A	2.18
174	18.0	0.8	6.51	1.17	5.34	A	A	A	1.20
175	16.6	0.3	-1.78	-0.51	3.47	A	A	A	0.33
176	17.7	0.6	4.73	1.02	4.50	A	A	A	0.87
177	17.7	1.5	4.73	0.51	8.98	A	A	A	0.87
179	16.4	1.3	-2.96	-0.36	8.46	A	A	A	0.55
180	16.6	0.8	-1.78	-0.32	5.65	A	A	A	0.33
181	17.6	1.4	4.14	0.47	8.49	A	A	A	0.76
182	17.1	0.4	1.18	0.31	3.77	A	A	A	0.22
184	17.18	0.44	1.66	0.42	3.91	A	A	A	0.31
185	16.9	1.1	0.00	0.00	7.15	A	A	A	0.00
186	11.8	0.6	-30.18	-6.53	5.88	N	N	N	5.57
187	17.41	1.08	3.02	0.43	6.87	A	A	A	0.56
188	17.15	1.30	1.48	0.18	8.14	A	A	A	0.27
190	16.5	1.0	-2.37	-0.36	6.74	A	A	A	0.44
192	16.8	1.2	-0.59	-0.08	7.73	A	A	A	0.11
194	18.1	1.4	7.10	0.81	8.28	A	A	A	1.31
195	17.7	1.0	4.73	0.72	6.38	A	A	A	0.87
196	16.9	0.9	0.00	0.00	6.09	A	A	A	0.00
198	16.4	0.3	-2.96	-0.86	3.48	A	A	A	0.55
201	15.46	0.35	-8.52	-2.36	3.73	A	A	A	1.57
202	19.0	2.7	12.43	0.76	14.52	A	A	A	2.29
204	17.384	0.787	2.86	0.52	5.41	A	A	A	0.53
205	17.34	0.93	2.60	0.42	6.13	A	A	A	0.48
206	17.58	0.88	4.02	0.67	5.81	A	A	A	0.74
207	17.0	1.1	0.59	0.08	7.11	A	A	A	0.11
209	16.24	0.57	-3.91	-0.87	4.59	A	A	A	0.72
210	17.4	0.5	2.96	0.71	4.12	A	A	A	0.55
212	16.5	1.7	-2.37	-0.23	10.72	A	A	A	0.44
213	13.4	0.7	-20.71	-4.07	6.00	N	N	N	3.82
216	16.6	0.8	-1.78	-0.32	5.65	A	A	A	0.33
218	17.1	0.2	1.18	0.37	3.18	A	A	A	0.22
222	19.00	1.52	12.43	1.31	8.53	A	A	A	2.29
223	17.3	1.0	2.37	0.36	6.49	A	A	A	0.44
224	16.35	0.50	-3.25	-0.78	4.26	A	A	A	0.60
227	29.2	9.6	72.78	1.28	33.01	N	N	N	13.43
228	17.0	0.6	0.59	0.13	4.61	A	A	A	0.11
229	16.37	0.77	-3.14	-0.58	5.56	A	A	A	0.58
232	13.2	4.2	-21.89	-0.87	31.96	N	N	N	4.04
233	18.0	1.3	6.51	0.79	7.80	A	A	A	1.20
234	21.14	1.90	25.09	2.16	9.46	N	N	N	4.63
236	17.101	0.706	1.19	0.23	5.08	A	A	A	0.22
237	16.6	1.2	-1.78	-0.23	7.81	A	A	A	0.33
240	42.3	13.9	150.30	1.83	32.99	N	N	N	27.74
241	16.0	0.9	-5.33	-0.87	6.36	A	A	A	0.98

TABLE 6. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
242	16.0	1.2	-5.33	-0.69	8.06	A	A	A	0.98
243	13.42	0.515	-20.59	-4.85	4.85	N	N	N	3.80
244	18.23	0.38	7.87	2.12	3.62	A	A	A	1.45
245	16.78	0.24	-0.71	-0.22	3.29	A	A	A	0.13
246	15.4	0.36	-8.88	-2.43	3.77	A	A	A	1.64
249	18	1	6.51	0.98	6.29	A	A	A	1.20
250	20.76	0.70	22.84	4.49	4.49	N	N	N	4.22
251	17.35	0.32	2.66	0.76	3.49	A	A	A	0.49
252	17.3	1.4	2.37	0.27	8.62	A	A	A	0.44

## Reported Results for the Cs-137 Determination in Sample 1

TABLE 7. Target values

Parameter	Value
Massic Activity, [Bq/kg]	13.1
Uncertainty, [Bq/kg]	0.4
Maximum Acceptable Relative Bias, [%]	15

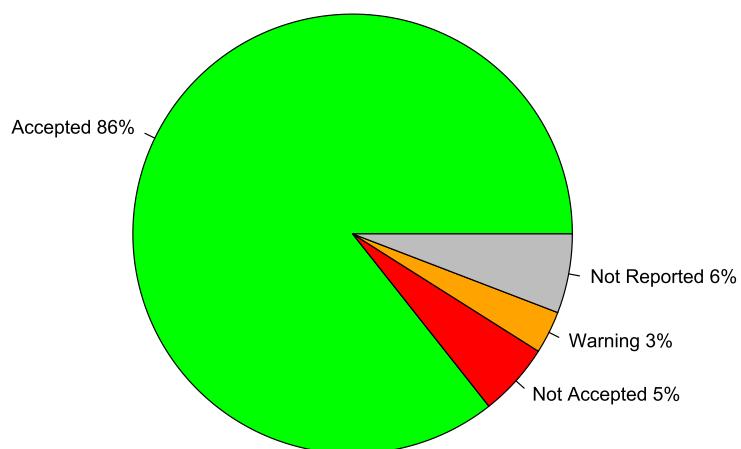


FIGURE 7. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

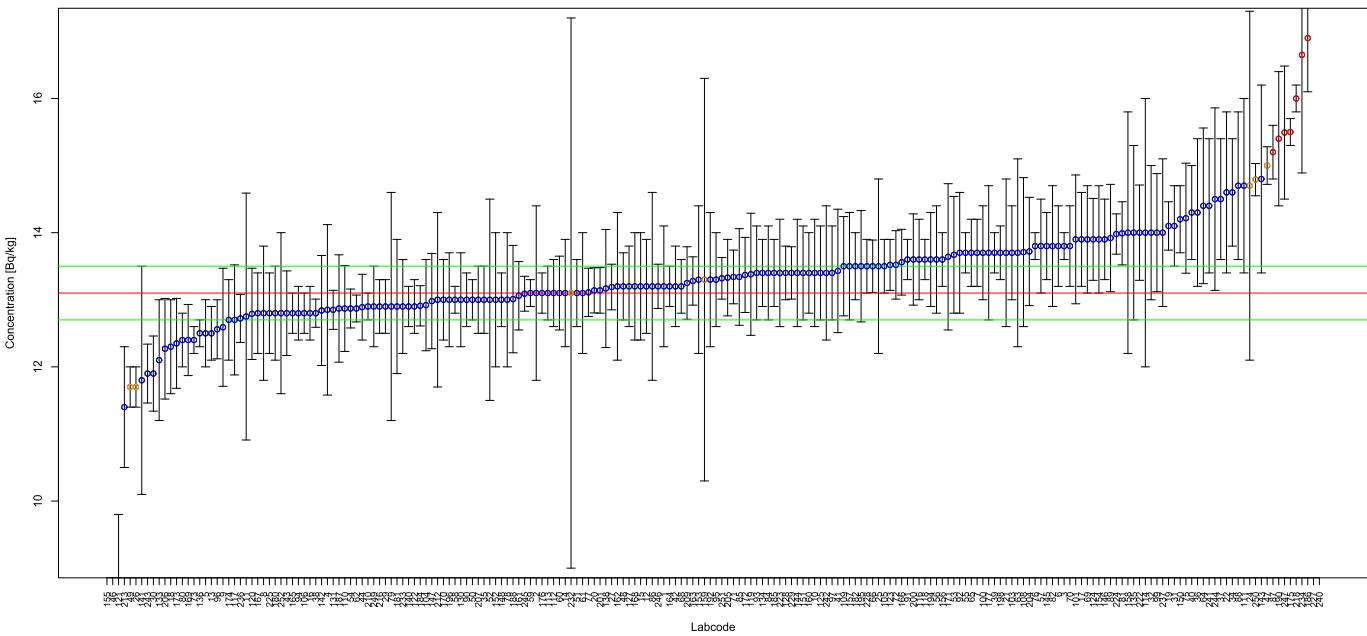


FIGURE 8. Reported results and evaluation parameters for Cs-137. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 8. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	13.2	0.9	0.76	0.10	7.47	A	A	A	0.17
2	13.1	1.3	0.00	0.00	10.38	A	A	A	0.00
3	13.8	0.2	5.34	1.57	3.38	A	A	A	1.17
4	12.85	1.27	-1.91	-0.19	10.34	A	A	A	0.42
5	12.5	0.5	-4.58	-0.94	5.03	A	A	A	1.00
6	13.8	0.6	5.34	0.97	5.31	A	A	A	1.17
7	13.7	0.5	4.58	0.94	4.76	A	A	A	1.00
8	12.8	1.0	-2.29	-0.28	8.39	A	A	A	0.50
9	12.59	0.88	-3.89	-0.53	7.63	A	A	A	0.85
10	13.4	0.8	2.29	0.34	6.71	A	A	A	0.50
11	12.75	1.84	-2.67	-0.19	14.75	A	A	A	0.58
12	13.2	0.7	0.76	0.12	6.12	A	A	A	0.17
13	12.5	0.4	-4.58	-1.06	4.42	A	A	A	1.00
14	13.1	0.8	0.00	0.00	6.83	A	A	A	0.00
15	13.2	0.8	0.76	0.11	6.79	A	A	A	0.17
16	12.8	0.4	-2.29	-0.53	4.37	A	A	A	0.50
17	13.9	0.7	6.11	0.99	5.89	A	A	A	1.34
18	12.3	0.7	-6.11	-0.99	6.46	A	A	A	1.34
19	14.1	0.36	7.63	1.86	3.98	A	A	A	1.67
20	13.14	0.336	0.31	0.08	3.98	A	A	A	0.07
21	13.7	1.1	4.58	0.51	8.59	A	A	A	1.00
22	14.6	1.2	11.45	1.19	8.77	A	A	A	2.51
24	14.7	2.6	12.21	0.61	17.95	A	N	W	2.67
25	13.5	1.3	3.05	0.29	10.10	A	A	A	0.67
26	11.7	0.3	-10.69	-2.80	3.99	A	N	W	2.34
27	13.19	0.34	0.69	0.17	4.00	A	A	A	0.15
29	12.9	0.4	-1.53	-0.35	4.35	A	A	A	0.33
30	11.90	0.56	-9.16	-1.74	5.61	A	A	A	2.01
31	14.1	0.6	7.63	1.39	5.24	A	A	A	1.67
32	14	1	6.87	0.84	7.77	A	A	A	1.50

TABLE 8. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
34	14.6	0.8	11.45	1.68	6.27	A	A	A	2.51
35	13	0.5	-0.76	-0.16	4.91	A	A	A	0.17
36	14.3	1.1	9.16	1.03	8.28	A	A	A	2.01
37	14.5	0.9	10.69	1.42	6.92	A	A	A	2.34
38	12.80	0.21	-2.29	-0.66	3.47	A	A	A	0.50
39	13.7	0.3	4.58	1.20	3.76	A	A	A	1.00
40	14.3	0.7	9.16	1.49	5.77	A	A	A	2.01
41	13.43	0.92	2.52	0.33	7.50	A	A	A	0.55
42	13.2	0.6	0.76	0.14	5.48	A	A	A	0.17
43	12.8	0.63	-2.29	-0.40	5.79	A	A	A	0.50
44	12.89	0.49	-1.60	-0.33	4.88	A	A	A	0.35
46	3.73	0.26	-71.53	-19.64	7.61	N	N	N	15.66
47	15.00	0.28	14.50	3.89	3.58	A	N	W	3.18
48	13.2	0.5	0.76	0.16	4.87	A	A	A	0.17
49	11.7	0.3	-10.69	-2.80	3.99	A	N	W	2.34
50	13.0	0.3	-0.76	-0.20	3.83	A	A	A	0.17
51	13.1	0.5	0.00	0.00	4.89	A	A	A	0.00
52	13.0	1.5	-0.76	-0.06	11.94	A	A	A	0.17
53	13.67	0.87	4.35	0.60	7.06	A	A	A	0.95
54	12.87	0.29	-1.76	-0.47	3.79	A	A	A	0.38
55	13.7	0.3	4.58	1.20	3.76	A	A	A	1.00
56	13.6	0.8	3.82	0.56	6.63	A	A	A	0.84
57	13.8	0.7	5.34	0.87	5.92	A	A	A	1.17
58	13.0	0.2	-0.76	-0.22	3.42	A	A	A	0.17
59	13.1	0.2	0.00	0.00	3.41	A	A	A	0.00
60	13.1	0.55	0.00	0.00	5.19	A	A	A	0.00
61	13.1	0.9	0.00	0.00	7.52	A	A	A	0.00
62	12.87	0.20	-1.76	-0.51	3.43	A	A	A	0.38
63	13.7	1.4	4.58	0.41	10.67	A	A	A	1.00
64	14.4	1.16	9.92	1.06	8.61	A	A	A	2.17
65	13.7	0.5	4.58	0.94	4.76	A	A	A	1.00
66	13.5	0.39	3.05	0.72	4.20	A	A	A	0.67
68	13.2	0.4	0.76	0.18	4.30	A	A	A	0.17
69	13.9	0.8	6.11	0.89	6.52	A	A	A	1.34
70	13.8	0.6	5.34	0.97	5.31	A	A	A	1.17
71	13.34	0.4	1.83	0.42	4.28	A	A	A	0.40
72	13.52	0.51	3.21	0.65	4.85	A	A	A	0.70
73	12.4	0.2	-5.34	-1.57	3.45	A	A	A	1.17
75	14.216	0.82	8.52	1.22	6.53	A	A	A	1.87
76	13.8	0.2	5.34	1.57	3.38	A	A	A	1.17
77	13.11	0.36	0.08	0.02	4.11	A	A	A	0.02
78	13.0	1.0	-0.76	-0.09	8.28	A	A	A	0.17
79	12.9	1.7	-1.53	-0.11	13.53	A	A	A	0.33
80	12.4	0.4	-5.34	-1.24	4.44	A	A	A	1.17
81	13.99	0.47	6.79	1.44	4.54	A	A	A	1.49
82	13.8	0.9	5.34	0.71	7.20	A	A	A	1.17
84	13.4	0.7	2.29	0.37	6.05	A	A	A	0.50
85	13.34	0.72	1.83	0.29	6.20	A	A	A	0.40
86	13.2	1.4	0.76	0.07	11.04	A	A	A	0.17
87	15.2	0.4	16.03	3.71	4.03	N	N	N	3.51
88	14.7	1.1	12.21	1.37	8.08	A	A	A	2.67
89	13.92	0.80	6.26	0.92	6.51	A	A	A	1.37
90	13.0	0.4	-0.76	-0.18	4.33	A	A	A	0.17
91	13.6	0.3	3.82	1.00	3.77	A	A	A	0.84

TABLE 8. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
92	13.7	0.9	4.58	0.61	7.24	A	A	A	1.00
93	13.4	0.7	2.29	0.37	6.05	A	A	A	0.50
94	12.8	0.4	-2.29	-0.53	4.37	A	A	A	0.50
95	13.3	0.7	1.53	0.25	6.08	A	A	A	0.33
96	12.56	0.44	-4.12	-0.91	4.65	A	A	A	0.90
97	13.4	0.7	2.29	0.37	6.05	A	A	A	0.50
99	14.00	0.88	6.87	0.93	6.99	A	A	A	1.50
100	13.7	0.7	4.58	0.74	5.95	A	A	A	1.00
101	13.9	0.96	6.11	0.77	7.55	A	A	A	1.34
103	13.7	0.7	4.58	0.74	5.95	A	A	A	1.00
104	12.92	0.68	-1.37	-0.23	6.08	A	A	A	0.30
105	13.5	0.4	3.05	0.71	4.25	A	A	A	0.67
106	12.8	0.3	-2.29	-0.60	3.85	A	A	A	0.50
108	13.71	1.11	4.66	0.52	8.65	A	A	A	1.02
109	13.5	0.74	3.05	0.48	6.27	A	A	A	0.67
110	12.87	0.64	-1.76	-0.30	5.84	A	A	A	0.38
111	14.7	1.3	12.21	1.18	9.36	A	A	A	2.67
112	13.1	0.5	0.00	0.00	4.89	A	A	A	0.00
113	13.1	0.4	0.00	0.00	4.32	A	A	A	0.00
114	14	2	6.87	0.44	14.61	A	A	A	1.50
116	13.6	0.6	3.82	0.69	5.37	A	A	A	0.84
117	12.7	0.820	-3.05	-0.44	7.14	A	A	A	0.67
118	13.6	0.3	3.82	1.00	3.77	A	A	A	0.84
119	13.38	0.91	2.14	0.28	7.46	A	A	A	0.47
120	12.79	0.68	-2.37	-0.39	6.13	A	A	A	0.52
121	8.7	1.1	-33.59	-3.76	13.01	N	N	N	7.35
122	12.9	0.4	-1.53	-0.35	4.35	A	A	A	0.33
123	13.52	0.38	3.21	0.76	4.15	A	A	A	0.70
124	13.9	0.61	6.11	1.10	5.35	A	A	A	1.34
125	13.4	0.7	2.29	0.37	6.05	A	A	A	0.50
127	13.2	0.6	0.76	0.14	5.48	A	A	A	0.17
128	13.4	0.4	2.29	0.53	4.27	A	A	A	0.50
130	13.0	0.7	-0.76	-0.12	6.19	A	A	A	0.17
131	12.85	0.291	-1.91	-0.51	3.80	A	A	A	0.42
133	12.1	0.9	-7.63	-1.02	8.04	A	A	A	1.67
134	13.4	0.5	2.29	0.47	4.82	A	A	A	0.50
135	14.0	1.3	6.87	0.66	9.77	A	A	A	1.50
136	12.5	0.2	-4.58	-1.34	3.45	A	A	A	1.00
138	13.168	0.880	0.52	0.07	7.35	A	A	A	0.11
139	13.4	0.98	2.29	0.28	7.93	A	A	A	0.50
140	12.9	0.3	-1.53	-0.40	3.84	A	A	A	0.33
141	11.8	1.7	-9.92	-0.74	14.73	A	A	A	2.17
142	12.84	0.82	-1.98	-0.28	7.08	A	A	A	0.43
143	14.8	1.4	12.98	1.17	9.94	A	A	A	2.84
144	13.4	0.8	2.29	0.34	6.71	A	A	A	0.50
145	13.8	0.5	5.34	1.09	4.74	A	A	A	1.17
146	13.9	0.6	6.11	1.11	5.29	A	A	A	1.34
147	12.98	0.71	-0.92	-0.15	6.26	A	A	A	0.20
148	13.0	0.4	-0.76	-0.18	4.33	A	A	A	0.17
150	14.2	0.5	8.40	1.72	4.66	A	A	A	1.84
151	13.4	0.7	2.29	0.37	6.05	A	A	A	0.50
152	13.0	1.0	-0.76	-0.09	8.28	A	A	A	0.17
153	13.3	1.1	1.53	0.17	8.82	A	A	A	0.33
154	13.9	0.8	6.11	0.89	6.52	A	A	A	1.34

TABLE 8. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
155	1.37	0.43	-89.54	-19.97	31.54	N	N	N	19.60
156	13.6	0.4	3.82	0.88	4.24	A	A	A	0.84
157	13.5	0.8	3.05	0.45	6.67	A	A	A	0.67
158	14	1.8	6.87	0.49	13.21	A	A	A	1.50
159	13.3	3.0	1.53	0.07	22.76	A	N	W	0.33
160	13.4	0.6	2.29	0.42	5.42	A	A	A	0.50
161	13.06	0.51	-0.31	-0.06	4.96	A	A	A	0.07
162	13.2	1.1	0.76	0.09	8.88	A	A	A	0.17
163	13.28	0.36	1.37	0.33	4.08	A	A	A	0.30
164	13.2	0.3	0.76	0.20	3.81	A	A	A	0.17
165	12.8	0.3	-2.29	-0.60	3.85	A	A	A	0.50
166	13.56	0.49	3.51	0.73	4.73	A	A	A	0.77
167	12.8	0.6	-2.29	-0.42	5.59	A	A	A	0.50
168	13.2	0.8	0.76	0.11	6.79	A	A	A	0.17
169	12.4	0.53	-5.34	-1.05	5.25	A	A	A	1.17
170	13.0	0.6	-0.76	-0.14	5.53	A	A	A	0.17
171	13.64	1.09	4.12	0.47	8.55	A	A	A	0.90
172	13.37	0.56	2.06	0.39	5.18	A	A	A	0.45
173	12.35	0.67	-5.73	-0.96	6.23	A	A	A	1.25
174	12.7	0.6	-3.05	-0.55	5.63	A	A	A	0.67
175	15.5	0.2	18.32	5.37	3.31	N	N	N	4.01
176	13.1	0.3	0.00	0.00	3.82	A	A	A	0.00
177	13.7	1.0	4.58	0.56	7.91	A	A	A	1.00
180	12.8	0.7	-2.29	-0.37	6.26	A	A	A	0.50
181	12.9	1.0	-1.53	-0.19	8.33	A	A	A	0.33
182	13.5	0.5	3.05	0.62	4.80	A	A	A	0.67
184	12.91	0.30	-1.45	-0.38	3.84	A	A	A	0.32
185	13.4	0.5	2.29	0.47	4.82	A	A	A	0.50
186	16.9	0.8	29.01	4.25	5.63	N	N	N	6.35
187	12.87	0.80	-1.76	-0.26	6.93	A	A	A	0.38
188	13.01	0.80	-0.69	-0.10	6.87	A	A	A	0.15
190	15.4	1.0	17.56	2.14	7.18	N	A	N	3.84
192	13.3	1.0	1.53	0.19	8.12	A	A	A	0.33
194	13.6	0.7	3.82	0.62	5.98	A	A	A	0.84
195	13.5	0.83	3.05	0.43	6.86	A	A	A	0.67
196	13.0	0.7	-0.76	-0.12	6.19	A	A	A	0.17
198	13.7	0.4	4.58	1.06	4.22	A	A	A	1.00
200	13.6	0.68	3.82	0.63	5.86	A	A	A	0.84
201	13.14	0.34	0.31	0.08	4.00	A	A	A	0.07
202	13.6	0.5	3.82	0.78	4.78	A	A	A	0.84
204	13.72	0.807	4.73	0.69	6.63	A	A	A	1.04
205	13.33	0.57	1.76	0.33	5.25	A	A	A	0.38
206	12.27	0.75	-6.34	-0.98	6.83	A	A	A	1.39
207	13.0	0.5	-0.76	-0.16	4.91	A	A	A	0.17
209	13.25	0.54	1.15	0.22	5.09	A	A	A	0.25
210	12.9	0.2	-1.53	-0.45	3.42	A	A	A	0.33
212	13.0	1.3	-0.76	-0.07	10.46	A	A	A	0.17
213	11.4	0.9	-12.98	-1.73	8.46	A	A	A	2.84
216	12.9	0.4	-1.53	-0.35	4.35	A	A	A	0.33
218	16.0	0.2	22.14	6.48	3.30	N	N	N	4.85
222	14.00	0.71	6.87	1.10	5.92	A	A	A	1.50
223	13.4	0.8	2.29	0.34	6.71	A	A	A	0.50
224	13.98	0.30	6.72	1.76	3.73	A	A	A	1.47
225	12.8	0.6	-2.29	-0.42	5.59	A	A	A	0.50

TABLE 8. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
227	24.6	6.6	87.79	1.74	27.00	N	N	N	19.22
228	13.5	0.4	3.05	0.71	4.25	A	A	A	0.67
229	13.40	0.39	2.29	0.54	4.22	A	A	A	0.50
232	13.1	4.1	0.00	0.00	31.45	A	N	W	0.00
233	12.9	0.7	-1.53	-0.25	6.23	A	A	A	0.33
234	16.65	1.76	27.10	1.97	11.00	N	A	N	5.93
236	12.722	0.358	-2.89	-0.70	4.15	A	A	A	0.63
237	14.0	1.1	6.87	0.77	8.43	A	A	A	1.50
240	35.7	9.6	172.52	2.35	27.06	N	N	N	37.77
241	14.4	1.0	9.92	1.21	7.59	A	A	A	2.17
242	13.4	1.0	2.29	0.28	8.06	A	A	A	0.50
243	11.9	0.439	-9.16	-2.02	4.79	A	A	A	2.01
244	14.50	1.36	10.69	0.99	9.86	A	A	A	2.34
245	13.09	0.26	-0.08	-0.02	3.64	A	A	A	0.02
246	13.2	0.33	0.76	0.19	3.95	A	A	A	0.17
247	15.492	0.9915	18.26	2.24	7.09	N	N	N	4.00
249	12.9	0.6	-1.53	-0.28	5.56	A	A	A	0.33
250	14.79	0.24	12.90	3.62	3.46	A	N	W	2.82
251	13.32	0.31	1.68	0.43	3.84	A	A	A	0.37
252	12.8	1.2	-2.29	-0.24	9.86	A	A	A	0.50

## Reported Results for the Zr-95 Determination in Sample 2

TABLE 9. Target values

Parameter	Value
Massic Activity, [Bq/kg]	8
Uncertainty, [Bq/kg]	0.22
Maximum Acceptable Relative Bias, [%]	30

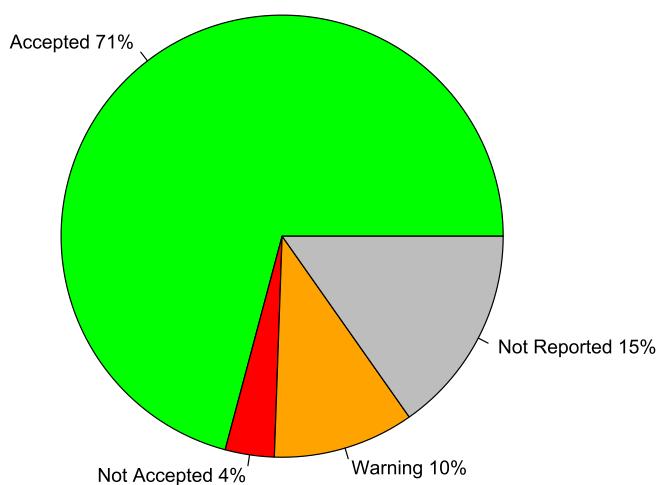


FIGURE 9. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

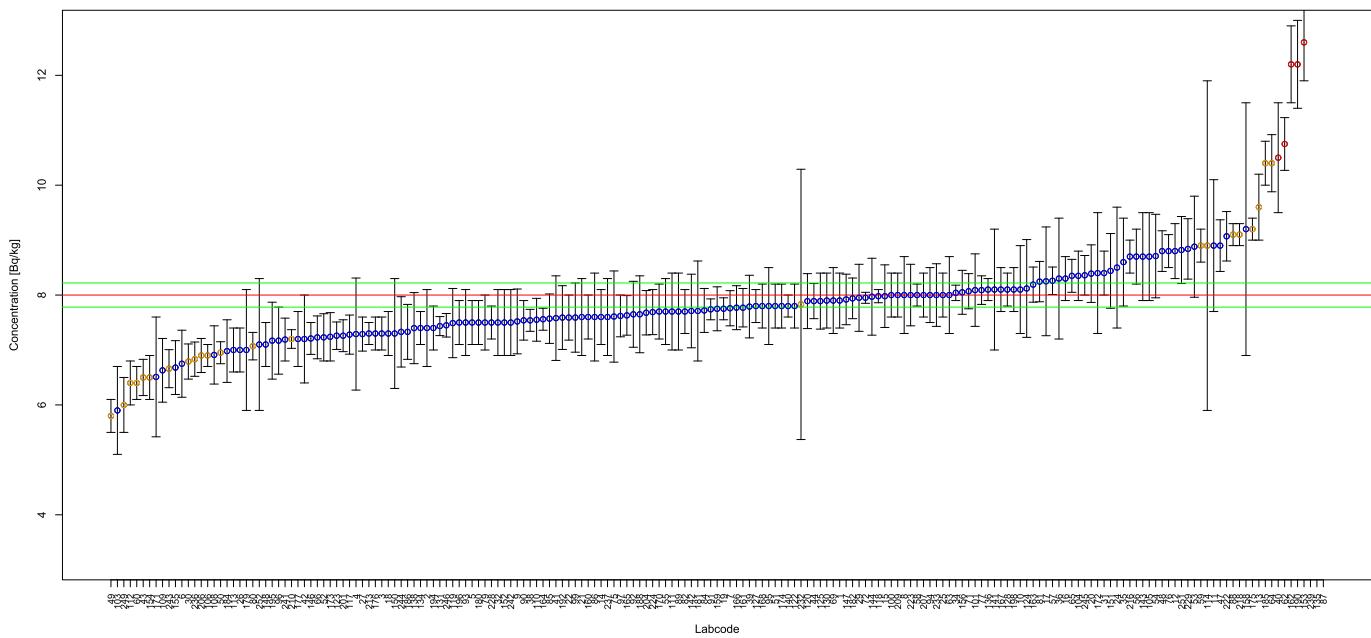


FIGURE 10. Reported results and evaluation parameters for Zr-95. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 10. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	7.9	0.5	-1.25	-0.18	6.90	A	A	A	0.17
2	7.4	0.7	-7.50	-0.82	9.85	A	A	A	1.03
3	7.3	0.3	-8.75	-1.88	4.94	A	A	A	1.20
4	7.29	1.02	-8.88	-0.68	14.26	A	A	A	1.21
5	7.5	0.4	-6.25	-1.10	6.00	A	A	A	0.85
6	6.75	0.61	-15.62	-1.93	9.45	A	A	A	2.14
7	7.76	0.32	-3.00	-0.62	4.96	A	A	A	0.41
8	8.0	0.7	0.00	0.00	9.17	A	A	A	0.00
9	7.52	0.59	-6.00	-0.76	8.31	A	A	A	0.82
10	8.1	0.8	1.25	0.12	10.25	A	A	A	0.17
11	8.9	1.2	11.25	0.74	13.76	A	A	A	1.54
12	8.8	0.5	10.00	1.46	6.31	A	A	A	1.37
13	9.6	0.6	20.00	2.50	6.83	A	N	W	2.73
14	7.6	0.5	-5.00	-0.73	7.13	A	A	A	0.68
15	7.98	0.57	-0.25	-0.03	7.65	A	A	A	0.03
16	8.3	0.4	3.75	0.66	5.55	A	A	A	0.51
17	8.25	0.99	3.12	0.25	12.31	A	A	A	0.43
18	7.3	0.4	-8.75	-1.53	6.13	A	A	A	1.20
19	7.75	0.20	-3.12	-0.84	3.77	A	A	A	0.43
20	8.39	0.524	4.88	0.69	6.82	A	A	A	0.67
21	7.6	0.7	-5.00	-0.55	9.61	A	A	A	0.68
22	7.59	0.41	-5.13	-0.88	6.06	A	A	A	0.70
24	8.5	1.1	6.25	0.45	13.23	A	A	A	0.85
25	8.0	0.4	0.00	0.00	5.71	A	A	A	0.00
26	7.0	0.4	-12.50	-2.19	6.34	A	A	A	1.71
27	7.29	0.31	-8.88	-1.87	5.06	A	A	A	1.21
29	7.95	0.61	-0.62	-0.08	8.15	A	A	A	0.09
30	6.79	0.32	-15.12	-3.12	5.46	A	N	W	2.07
31	8.4	0.4	5.00	0.88	5.50	A	A	A	0.68
32	7.5	0.6	-6.25	-0.78	8.46	A	A	A	0.85

TABLE 10. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
34	8.04	0.14	0.50	0.15	3.25	A	A	A	0.07
35	8.6	0.8	7.50	0.72	9.70	A	A	A	1.03
36	8.3	1.1	3.75	0.27	13.54	A	A	A	0.51
38	7.54	0.20	-5.75	-1.55	3.82	A	A	A	0.79
39	7.79	0.57	-2.62	-0.34	7.82	A	A	A	0.36
40	10.5	1	31.25	2.44	9.91	N	N	N	4.27
41	7.58	0.77	-5.25	-0.52	10.52	A	A	A	0.72
42	7.2	0.8	-10.00	-0.96	11.45	A	A	A	1.37
43	6.5	0.33	-18.75	-3.78	5.77	A	N	W	2.56
44	7.89	0.32	-1.38	-0.28	4.90	A	A	A	0.19
47	8.90	0.47	11.25	1.73	5.95	A	A	A	1.54
48	8.80	0.37	10.00	1.86	5.02	A	A	A	1.37
49	5.8	0.3	-27.50	-5.91	5.86	A	N	W	3.76
50	6.95	0.20	-13.12	-3.53	3.98	A	N	W	1.79
51	7.8	0.4	-2.50	-0.44	5.82	A	A	A	0.34
52	7.23	0.43	-9.62	-1.59	6.55	A	A	A	1.32
53	8.88	0.92	11.00	0.93	10.72	A	A	A	1.50
54	8.71	0.76	8.88	0.90	9.15	A	A	A	1.21
55	7.7	0.6	-3.75	-0.47	8.26	A	A	A	0.51
56	8.7	0.5	8.75	1.28	6.37	A	A	A	1.20
57	8.26	0.25	3.25	0.78	4.09	A	A	A	0.44
58	8.0	0.2	0.00	0.00	3.72	A	A	A	0.00
59	8.9	0.3	11.25	2.42	4.35	A	N	W	1.54
60	6.4	0.3	-20.00	-4.30	5.43	A	N	W	2.73
62	10.75	0.48	34.38	5.21	5.24	N	N	N	4.70
63	8.0	0.7	0.00	0.00	9.17	A	A	A	0.00
64	10.4	0.52	30.00	4.25	5.71	A	N	W	4.10
65	8.35	0.30	4.37	0.94	4.52	A	A	A	0.60
66	7.23	0.39	-9.62	-1.72	6.05	A	A	A	1.32
69	7.9	0.6	-1.25	-0.16	8.08	A	A	A	0.17
71	8.07	0.32	0.88	0.18	4.83	A	A	A	0.12
72	7.95	0.1	-0.62	-0.21	3.02	A	A	A	0.09
75	7.6088	0.83	-4.89	-0.46	11.25	A	A	A	0.67
76	8.8	0.3	10.00	2.15	4.38	A	A	A	1.37
77	8.09	0.26	1.12	0.26	4.23	A	A	A	0.15
79	7.5	0.5	-6.25	-0.92	7.21	A	A	A	0.85
80	7.07	0.25	-11.62	-2.79	4.48	A	N	W	1.59
81	8.245	0.367	3.06	0.57	5.23	A	A	A	0.42
82	7.7	0.4	-3.75	-0.66	5.88	A	A	A	0.51
84	7.72	0.40	-3.50	-0.61	5.87	A	A	A	0.48
85	7.57	0.45	-5.37	-0.86	6.55	A	A	A	0.73
86	7.6	0.8	-5.00	-0.48	10.88	A	A	A	0.68
87	77.8	3.9	872.50	17.87	5.72	N	N	N	119.28
88	9.1	0.2	13.75	3.70	3.52	A	N	W	1.88
89	7.7	0.7	-3.75	-0.41	9.50	A	A	A	0.51
90	7.54	0.36	-5.75	-1.09	5.51	A	A	A	0.79
91	7.74	0.19	-3.25	-0.89	3.69	A	A	A	0.44
92	7.65	0.6	-4.37	-0.55	8.31	A	A	A	0.60
93	7.5	0.6	-6.25	-0.78	8.46	A	A	A	0.85
94	8.0	0.5	0.00	0.00	6.83	A	A	A	0.00
95	7.8	0.7	-2.50	-0.27	9.39	A	A	A	0.34
96	7.17	0.61	-10.38	-1.28	8.94	A	A	A	1.42
97	7.62	0.38	-4.75	-0.87	5.69	A	A	A	0.65
99	7.59	0.63	-5.13	-0.61	8.74	A	A	A	0.70

TABLE 10. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
100	8.0	0.4	0.00	0.00	5.71	A	A	A	0.00
101	8.09	0.66	1.12	0.13	8.61	A	A	A	0.15
103	5.9	0.8	-26.25	-2.53	13.84	A	A	A	3.59
104	8.35	0.45	4.37	0.70	6.05	A	A	A	0.60
105	8.7	0.8	8.75	0.84	9.60	A	A	A	1.20
106	6.9	0.2	-13.75	-3.70	4.00	A	N	W	1.88
108	6.91	0.53	-13.62	-1.90	8.15	A	A	A	1.86
109	6.63	0.58	-17.12	-2.21	9.17	A	A	A	2.34
110	7.55	0.39	-5.63	-1.00	5.85	A	A	A	0.77
111	7.7	0.7	-3.75	-0.41	9.50	A	A	A	0.51
112	6.4	0.4	-20.00	-3.50	6.83	A	N	W	2.73
113	7.0	0.4	-12.50	-2.19	6.34	A	A	A	1.71
114	8.9	3	11.25	0.30	33.82	A	N	W	1.54
117	7.28	0.356	-9.00	-1.72	5.61	A	A	A	1.23
118	7.98	0.12	-0.25	-0.08	3.13	A	A	A	0.03
119	7.49	0.63	-6.37	-0.76	8.85	A	A	A	0.87
120	7.89	0.50	-1.38	-0.20	6.91	A	A	A	0.19
122	7.8	0.4	-2.50	-0.44	5.82	A	A	A	0.34
123	7.26	0.25	-9.25	-2.22	4.41	A	A	A	1.26
124	8.12	0.89	1.50	0.13	11.30	A	A	A	0.21
125	7.89	0.51	-1.38	-0.20	7.02	A	A	A	0.19
127	7.8	0.3	-2.50	-0.54	4.73	A	A	A	0.34
128	8.1	0.3	1.25	0.27	4.61	A	A	A	0.17
130	7.9	0.5	-1.25	-0.18	6.90	A	A	A	0.17
131	7.435	0.173	-7.06	-2.02	3.60	A	A	A	0.97
134	7.4	0.3	-7.50	-1.61	4.90	A	A	A	1.03
135	35.0	5.0	337.50	5.39	14.55	N	N	N	46.14
136	8.1	0.2	1.25	0.34	3.70	A	A	A	0.17
138	7.398	0.647	-7.53	-0.88	9.17	A	A	A	1.03
139	7.38	0.73	-7.75	-0.81	10.27	A	A	A	1.06
140	7.8	0.2	-2.50	-0.67	3.76	A	A	A	0.34
141	8.1	1.1	1.25	0.09	13.86	A	A	A	0.17
142	7.71	0.67	-3.63	-0.41	9.11	A	A	A	0.50
143	8.7	0.8	8.75	0.84	9.60	A	A	A	1.20
144	7.97	0.7	-0.38	-0.04	9.20	A	A	A	0.05
146	7.21	0.29	-9.88	-2.17	4.87	A	A	A	1.35
147	7.92	0.46	-1.00	-0.16	6.43	A	A	A	0.14
148	7.1	0.4	-11.25	-1.97	6.27	A	A	A	1.54
150	7.3	1.0	-8.75	-0.68	13.97	A	A	A	1.20
151	8.44	0.68	5.50	0.62	8.51	A	A	A	0.75
152	7.5	0.6	-6.25	-0.78	8.46	A	A	A	0.85
153	12.6	0.7	57.50	6.27	6.20	N	N	N	7.86
154	6.5	0.4	-18.75	-3.29	6.74	A	N	W	2.56
155	6.68	0.49	-16.50	-2.46	7.83	A	A	A	2.26
156	8.05	0.40	0.63	0.11	5.68	A	A	A	0.09
158	9.2	2.3	15.00	0.52	25.15	A	A	A	2.05
159	7.75	0.4	-3.12	-0.55	5.85	A	A	A	0.43
160	7.6	0.4	-5.00	-0.88	5.94	A	A	A	0.68
161	7.77	0.35	-2.88	-0.56	5.28	A	A	A	0.39
162	12.2	0.7	52.50	5.72	6.36	N	N	N	7.18
163	8.19	0.32	2.37	0.49	4.78	A	A	A	0.32
164	7.56	0.2	-5.50	-1.48	3.82	A	A	A	0.75
165	7.63	0.36	-4.63	-0.88	5.46	A	A	A	0.63
166	7.77	0.40	-2.88	-0.50	5.84	A	A	A	0.39

TABLE 10. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
167	8.1	0.4	1.25	0.22	5.65	A	A	A	0.17
168	7.8	0.4	-2.50	-0.44	5.82	A	A	A	0.34
170	7.7	0.5	-3.75	-0.55	7.05	A	A	A	0.51
171	6.51	1.09	-18.63	-1.34	16.97	A	A	A	2.55
172	8.4	1.1	5.00	0.36	13.38	A	A	A	0.68
173	7.24	0.44	-9.50	-1.54	6.67	A	A	A	1.30
174	7.8	0.4	-2.50	-0.44	5.82	A	A	A	0.34
175	9.2	0.2	15.00	4.04	3.51	A	N	W	2.05
176	7.3	0.3	-8.75	-1.88	4.94	A	A	A	1.20
177	7.2	0.5	-10.00	-1.46	7.47	A	A	A	1.37
179	7.0	1.1	-12.50	-0.89	15.95	A	A	A	1.71
180	7.5	0.4	-6.25	-1.10	6.00	A	A	A	0.85
181	7.71	0.91	-3.63	-0.31	12.12	A	A	A	0.50
182	7.94	0.37	-0.75	-0.14	5.41	A	A	A	0.10
184	6.98	0.57	-12.75	-1.67	8.62	A	A	A	1.74
185	10.4	0.4	30.00	5.26	4.73	A	N	W	4.10
186	7.33	0.50	-8.38	-1.23	7.35	A	A	A	1.14
188	7.65	0.70	-4.37	-0.48	9.55	A	A	A	0.60
190	12.2	0.8	52.50	5.06	7.11	N	N	N	7.18
192	7.59	0.58	-5.13	-0.66	8.12	A	A	A	0.70
194	7.4	0.4	-7.50	-1.31	6.06	A	A	A	1.03
195	7.17	0.70	-10.38	-1.13	10.14	A	A	A	1.42
196	7.5	0.4	-6.25	-1.10	6.00	A	A	A	0.85
198	8.1	0.4	1.25	0.22	5.65	A	A	A	0.17
201	7.26	0.29	-9.25	-2.03	4.85	A	A	A	1.26
204	7.678	0.404	-4.03	-0.70	5.94	A	A	A	0.55
206	6.90	0.31	-13.75	-2.89	5.27	A	N	W	1.88
207	8.0	0.4	0.00	0.00	5.71	A	A	A	0.00
209	8.00	0.40	0.00	0.00	5.71	A	A	A	0.00
210	7.20	0.17	-10.00	-2.88	3.62	A	N	W	1.37
213	7.3	0.2	-8.75	-2.35	3.88	A	A	A	1.20
216	8.7	0.3	8.75	1.88	4.41	A	A	A	1.20
218	9.1	0.2	13.75	3.70	3.52	A	N	W	1.88
222	9.07	0.45	13.38	2.14	5.67	A	A	A	1.83
223	8.00	0.56	0.00	0.00	7.52	A	A	A	0.00
224	7.69	0.41	-3.87	-0.67	6.00	A	A	A	0.53
228	7.5	0.3	-6.25	-1.34	4.85	A	A	A	0.85
229	8.84	0.55	10.50	1.42	6.80	A	A	A	1.44
232	7.83	2.46	-2.12	-0.07	31.54	A	N	W	0.29
233	8.00	0.57	0.00	0.00	7.64	A	A	A	0.00
236	6.833	0.312	-14.59	-3.06	5.33	A	N	W	1.99
237	7.6	0.7	-5.00	-0.55	9.61	A	A	A	0.68
239	34.1	1.6	326.25	16.16	5.44	N	N	N	44.60
241	7.19	0.39	-10.12	-1.81	6.08	A	A	A	1.38
242	7.5	0.6	-6.25	-0.78	8.46	A	A	A	0.85
243	6.660	0.346	-16.75	-3.27	5.88	A	N	W	2.29
244	7.33	0.64	-8.38	-0.99	9.15	A	A	A	1.14
245	8.36	0.36	4.50	0.85	5.11	A	A	A	0.62
246	7.45	0.214	-6.87	-1.79	3.98	A	A	A	0.94
249	6.0	0.5	-25.00	-3.66	8.78	A	N	W	3.42
251	8.82	0.61	10.25	1.26	7.44	A	A	A	1.40
252	7.1	1.2	-11.25	-0.74	17.12	A	A	A	1.54

## Reported Results for the Tc-99m Determination in Sample 2

TABLE 11. Target values

Parameter	Value
Massic Activity, [Bq/kg]	53.8
Uncertainty, [Bq/kg]	2.2
Maximum Acceptable Relative Bias, [%]	30

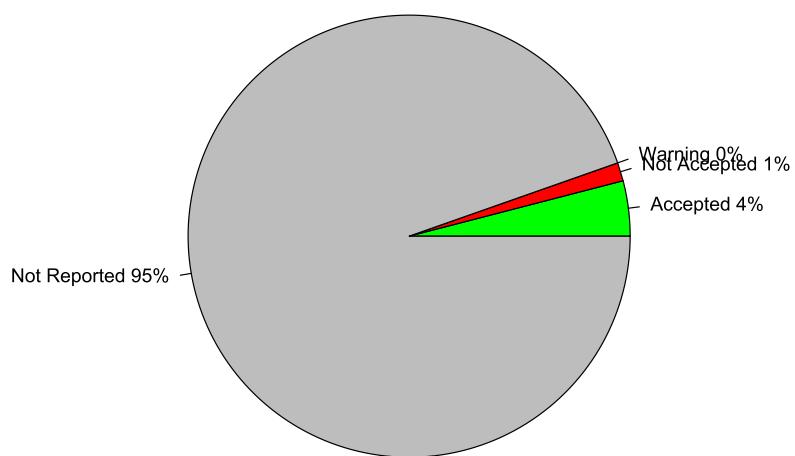


FIGURE 11. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

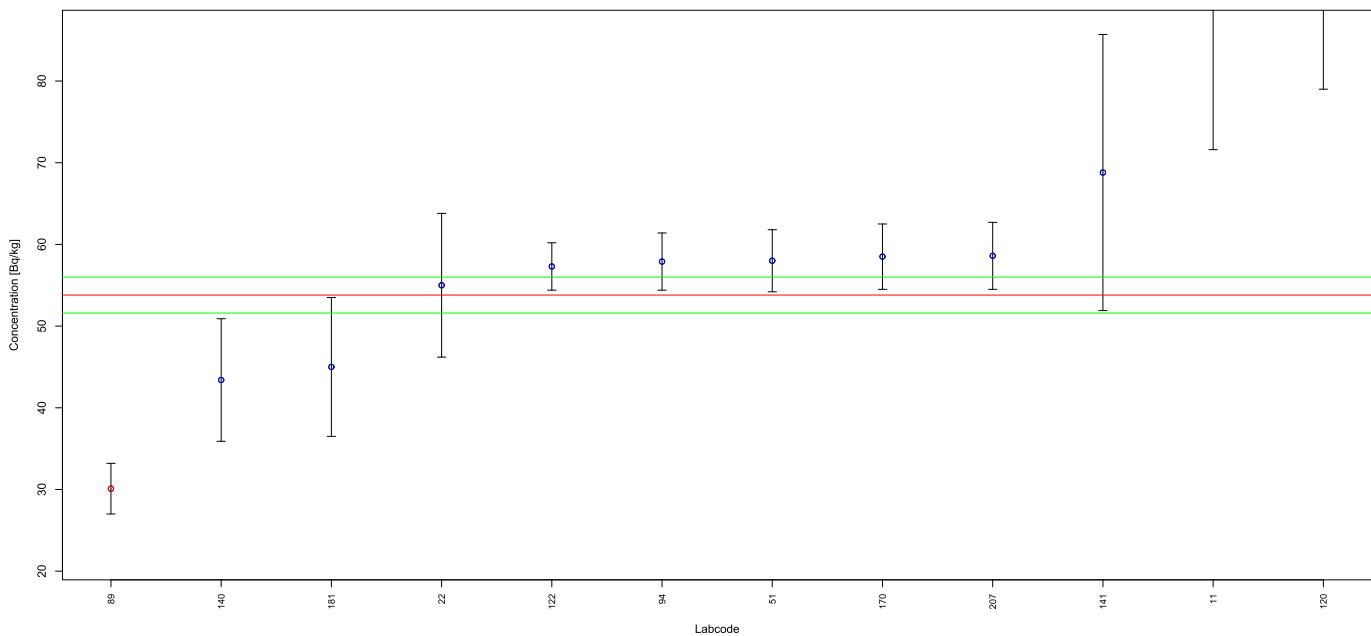


FIGURE 12. Reported results and evaluation parameters for Tc-99m. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 12. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
11	94.8	23.2	76.21	1.76	24.81	N	N	N	3.44
22	55.0	8.8	2.23	0.13	16.51	A	A	A	0.10
51	58.0	3.8	7.81	0.96	7.72	A	A	A	0.35
89	30.1	3.1	-44.05	-6.23	11.08	N	N	N	1.99
94	57.9	3.5	7.62	0.99	7.30	A	A	A	0.34
120	96	17	78.44	2.46	18.17	N	N	N	3.54
122	57.3	2.9	6.51	0.96	6.51	A	A	A	0.29
140	43.4	7.5	-19.33	-1.33	17.76	A	A	A	0.87
141	68.8	16.9	27.88	0.88	24.90	A	A	A	1.26
170	58.5	4.0	8.74	1.03	7.97	A	A	A	0.39
181	45.0	8.5	-16.36	-1.00	19.33	A	A	A	0.74
207	58.6	4.1	8.92	1.03	8.10	A	A	A	0.40

## Reported Results for the Mo-99 Determination in Sample 2

TABLE 13. Target values

Parameter	Value
Massic Activity, [Bq/kg]	55.9
Uncertainty, [Bq/kg]	1.9
Maximum Acceptable Relative Bias, [%]	25

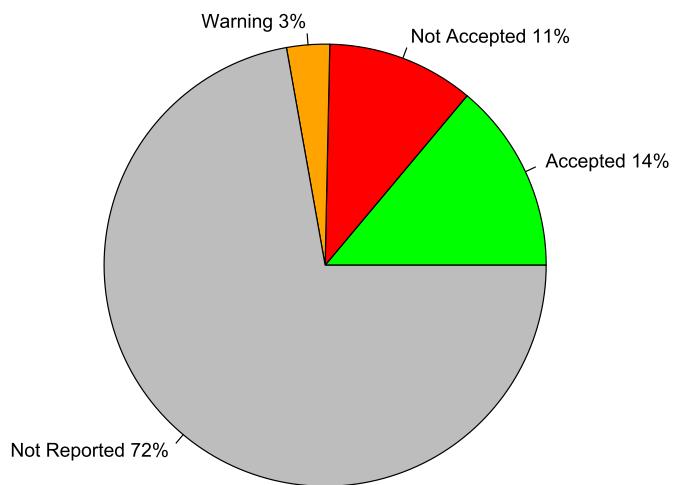


FIGURE 13. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

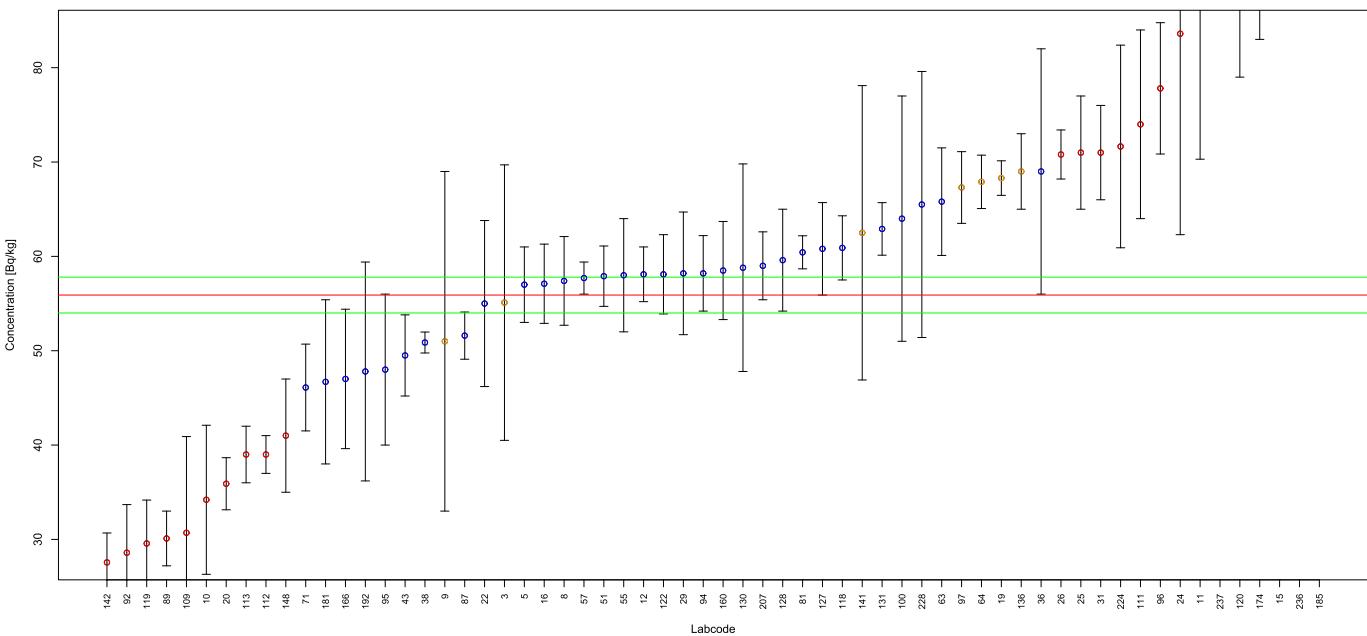


FIGURE 14. Reported results and evaluation parameters for Mo-99. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 14. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
3	55.1	14.6	-1.43	-0.05	26.71	A	N	W	0.05
5	57	4	1.97	0.25	7.80	A	A	A	0.07
8	57.4	4.7	2.68	0.30	8.87	A	A	A	0.10
9	51	18	-8.77	-0.27	35.46	A	N	W	0.31
10	34.2	7.9	-38.82	-2.67	23.35	N	A	N	1.39
11	93.6	23.3	67.44	1.61	25.12	N	N	N	2.42
12	58.1	2.9	3.94	0.63	6.04	A	A	A	0.14
15	123	10	120.04	6.59	8.81	N	N	N	4.30
16	57.1	4.2	2.15	0.26	8.10	A	A	A	0.08
19	68.3	1.83	22.18	4.70	4.33	A	N	W	0.80
20	35.9	2.761	-35.78	-5.97	8.41	N	N	N	1.28
22	55.0	8.8	-1.61	-0.10	16.36	A	A	A	0.06
24	83.6	21.3	49.55	1.30	25.70	N	N	N	1.78
25	71	6	27.01	2.40	9.11	N	N	N	0.97
26	70.8	2.6	26.65	4.63	5.00	N	N	N	0.96
29	58.2	6.5	4.11	0.34	11.67	A	A	A	0.15
31	71.0	5.0	27.01	2.82	7.82	N	N	N	0.97
36	69	13	23.43	1.00	19.14	A	A	A	0.84
38	50.87	1.11	-9.00	-2.29	4.04	A	A	A	0.32
43	49.5	4.3	-11.45	-1.36	9.33	A	A	A	0.41
51	57.9	3.2	3.58	0.54	6.49	A	A	A	0.13
55	58	6	3.76	0.33	10.89	A	A	A	0.13
57	57.7	1.7	3.22	0.71	4.50	A	A	A	0.12
63	65.8	5.7	17.71	1.65	9.31	A	A	A	0.64
64	67.9	2.83	21.47	3.52	5.38	A	N	W	0.77
71	46.1	4.6	-17.53	-1.97	10.54	A	A	A	0.63
81	60.430	1.752	8.10	1.75	4.47	A	A	A	0.29
87	51.6	2.5	-7.69	-1.37	5.92	A	A	A	0.28
89	30.1	2.9	-46.15	-7.44	10.22	N	N	N	1.66
92	28.59	5.1	-48.86	-5.02	18.16	N	N	N	1.75

TABLE 14. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
94	58.2	4.0	4.11	0.52	7.67	A	A	A	0.15
95	48	8	-14.13	-0.96	17.01	A	A	A	0.51
96	77.81	6.96	39.19	3.04	9.57	N	N	N	1.41
97	67.3	3.8	20.39	2.68	6.59	A	N	W	0.73
100	64	13	14.49	0.62	20.59	A	A	A	0.52
109	30.7	10.2	-45.08	-2.43	33.40	N	N	N	1.62
111	74	10	32.38	1.78	13.93	N	A	N	1.16
112	39	2	-30.23	-6.13	6.15	N	N	N	1.08
113	39	3	-30.23	-4.76	8.41	N	N	N	1.08
118	60.9	3.4	8.94	1.28	6.54	A	A	A	0.32
119	29.57	4.6	-47.10	-5.29	15.92	N	N	N	1.69
120	96	17	71.74	2.34	18.03	N	N	N	2.57
122	58.1	4.2	3.94	0.48	7.99	A	A	A	0.14
127	60.8	4.9	8.77	0.93	8.75	A	A	A	0.31
128	59.6	5.4	6.62	0.65	9.68	A	A	A	0.24
130	58.8	11	5.19	0.26	19.01	A	A	A	0.19
131	62.91	2.784	12.54	2.08	5.58	A	A	A	0.45
136	69	4	23.43	2.96	6.72	A	N	W	0.84
141	62.5	15.6	11.81	0.42	25.19	A	N	W	0.42
142	27.56	3.12	-50.70	-7.76	11.82	N	N	N	1.82
148	41	6	-26.65	-2.37	15.02	N	A	N	0.96
160	58.5	5.2	4.65	0.47	9.52	A	A	A	0.17
166	47.01	7.39	-15.90	-1.17	16.08	A	A	A	0.57
174	106	23	89.62	2.17	21.96	N	N	N	3.21
181	46.7	8.7	-16.46	-1.03	18.94	A	A	A	0.59
185	21980	1939	39220.21	11.31	9.45	N	N	N	1406.58
192	47.8	11.6	-14.49	-0.69	24.50	A	A	A	0.52
207	59.0	3.6	5.55	0.76	6.98	A	A	A	0.20
224	71.65	10.74	28.18	1.44	15.37	N	A	N	1.01
228	65.5	14.1	17.17	0.67	21.79	A	A	A	0.62
236	124.207	15.659	122.19	4.33	13.06	N	N	N	4.38
237	94	7	68.16	5.25	8.19	N	N	N	2.44

## **Reported Results for the Ru-103 Determination in Sample 2**

TABLE 15. Target values

Parameter	Value
Massic Activity, [Bq/kg]	3.94
Uncertainty, [Bq/kg]	0.12
Maximum Acceptable Relative Bias, [%]	40

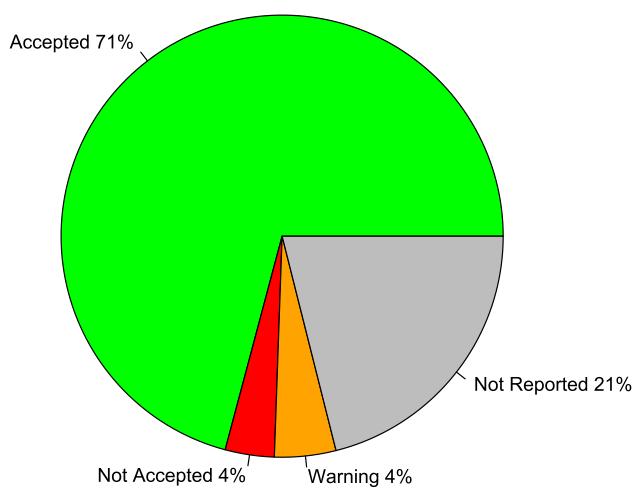


FIGURE 15. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

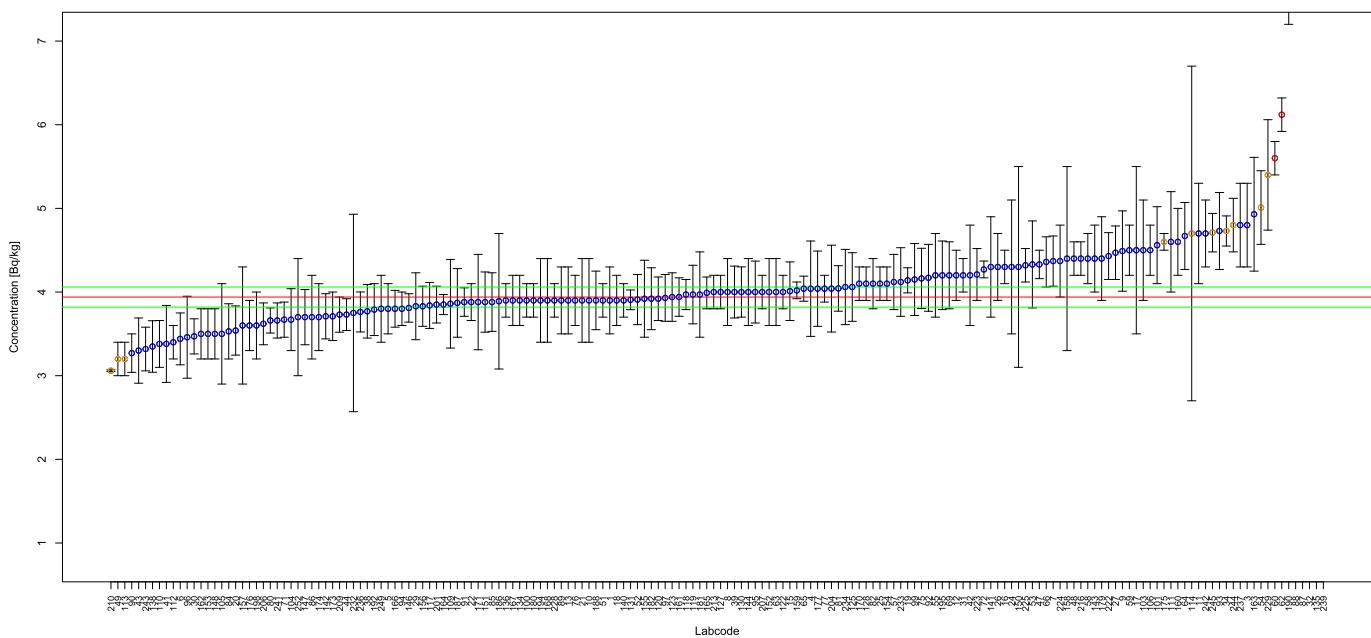


FIGURE 16. Reported results and evaluation parameters for Ru-103. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 16. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	3.9	0.4	-1.02	-0.10	10.70	A	A	A	0.11
3	4.8	0.5	21.83	1.67	10.85	A	A	A	2.41
4	4.04	0.57	2.54	0.17	14.43	A	A	A	0.28
5	3.8	0.3	-3.55	-0.43	8.46	A	A	A	0.39
6	3.44	0.31	-12.69	-1.50	9.51	A	A	A	1.40
7	4.37	0.3	10.91	1.33	7.51	A	A	A	1.21
8	4.0	0.4	1.52	0.14	10.45	A	A	A	0.17
9	4.49	0.48	13.96	1.11	11.12	A	A	A	1.54
10	3.9	0.5	-1.02	-0.08	13.18	A	A	A	0.11
11	4.7	0.6	19.29	1.24	13.12	A	A	A	2.13
12	4.2	0.3	6.60	0.80	7.77	A	A	A	0.73
13	3.9	0.4	-1.02	-0.10	10.70	A	A	A	0.11
15	4.01	0.35	1.78	0.19	9.24	A	A	A	0.20
16	4.3	0.2	9.14	1.54	5.56	A	A	A	1.01
17	4.5	1.0	14.21	0.56	22.43	A	A	A	1.57
18	3.9	0.3	-1.02	-0.12	8.27	A	A	A	0.11
19	4.14	0.15	5.08	1.04	4.73	A	A	A	0.56
20	3.54	0.294	-10.15	-1.26	8.85	A	A	A	1.12
21	3.9	0.5	-1.02	-0.08	13.18	A	A	A	0.11
22	3.88	0.22	-1.52	-0.24	6.44	A	A	A	0.17
24	4.3	0.8	9.14	0.45	18.85	A	A	A	1.01
25	4.1	0.2	4.06	0.69	5.75	A	A	A	0.45
26	4.3	0.4	9.14	0.86	9.79	A	A	A	1.01
27	4.47	0.32	13.45	1.55	7.78	A	A	A	1.49
29	3.83	0.40	-2.79	-0.26	10.88	A	A	A	0.31
30	3.47	0.21	-11.93	-1.94	6.78	A	A	A	1.32
31	4.2	0.2	6.60	1.11	5.65	A	A	A	0.73
32	41	3	940.61	12.34	7.93	N	N	N	103.90
34	4.73	0.18	20.05	3.65	4.87	A	N	W	2.21
38	3.77	0.32	-4.31	-0.50	9.02	A	A	A	0.48

TABLE 16. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
39	4.00	0.31	1.52	0.18	8.33	A	A	A	0.17
41	3.38	0.46	-14.21	-1.18	13.95	A	A	A	1.57
42	4.2	0.6	6.60	0.42	14.61	A	A	A	0.73
43	3.3	0.39	-16.24	-1.57	12.20	A	A	A	1.79
44	3.73	0.19	-5.33	-0.93	5.93	A	A	A	0.59
47	4.33	0.17	9.90	1.87	4.97	A	A	A	1.09
48	4.40	0.20	11.68	1.97	5.47	A	A	A	1.29
49	3.2	0.2	-18.78	-3.17	6.95	A	N	W	2.07
51	3.9	0.2	-1.02	-0.17	5.96	A	A	A	0.11
52	3.91	0.30	-0.76	-0.09	8.26	A	A	A	0.08
53	4.33	0.52	9.90	0.73	12.39	A	A	A	1.09
54	5.01	0.44	27.16	2.35	9.30	A	N	W	3.00
55	4.2	0.5	6.60	0.51	12.29	A	A	A	0.73
57	4.12	0.33	4.57	0.51	8.57	A	A	A	0.50
58	4.4	0.3	11.68	1.42	7.47	A	A	A	1.29
59	4.5	0.3	14.21	1.73	7.33	A	A	A	1.57
60	5.6	0.2	42.13	7.12	4.69	N	N	N	4.65
62	6.12	0.2	55.33	9.35	4.47	N	N	N	6.11
63	4.0	0.4	1.52	0.14	10.45	A	A	A	0.17
64	4.67	0.4	18.53	1.75	9.09	A	A	A	2.05
65	4.04	0.15	2.54	0.52	4.80	A	A	A	0.28
66	4.36	0.30	10.66	1.30	7.52	A	A	A	1.18
69	4.2	0.4	6.60	0.62	10.00	A	A	A	0.73
71	3.67	0.21	-6.85	-1.12	6.48	A	A	A	0.76
72	4.27	0.1	8.38	2.11	3.84	A	A	A	0.93
75	4.1630	0.36	5.66	0.59	9.17	A	A	A	0.63
76	3.9	0.3	-1.02	-0.12	8.27	A	A	A	0.11
77	4.04	0.16	2.54	0.50	5.00	A	A	A	0.28
80	3.66	0.15	-7.11	-1.46	5.11	A	A	A	0.78
81	4.043	0.272	2.61	0.35	7.38	A	A	A	0.29
82	4.1	0.3	4.06	0.50	7.93	A	A	A	0.45
84	3.53	0.33	-10.41	-1.17	9.83	A	A	A	1.15
85	3.88	0.35	-1.52	-0.16	9.52	A	A	A	0.17
86	3.7	0.5	-6.09	-0.47	13.85	A	A	A	0.67
87	37.6	2.0	854.31	16.80	6.13	N	N	N	94.37
88	8.1	0.1	105.58	26.63	3.29	N	N	N	11.66
89	3.9	0.4	-1.02	-0.10	10.70	A	A	A	0.11
90	3.27	0.23	-17.01	-2.58	7.66	A	A	A	1.88
91	3.88	0.17	-1.52	-0.29	5.34	A	A	A	0.17
92	4.17	0.4	5.84	0.55	10.06	A	A	A	0.64
93	4.73	0.46	20.05	1.66	10.19	A	A	A	2.21
94	3.8	0.2	-3.55	-0.60	6.08	A	A	A	0.39
95	4.0	0.37	1.52	0.15	9.74	A	A	A	0.17
96	3.46	0.49	-12.18	-0.95	14.49	A	A	A	1.35
97	3.93	0.28	-0.25	-0.03	7.75	A	A	A	0.03
99	4.15	0.43	5.33	0.47	10.80	A	A	A	0.59
100	3.9	0.2	-1.02	-0.17	5.96	A	A	A	0.11
101	4.56	0.46	15.74	1.30	10.54	A	A	A	1.74
103	4.5	0.6	14.21	0.92	13.68	A	A	A	1.57
104	3.67	0.37	-6.85	-0.69	10.53	A	A	A	0.76
105	3.5	0.6	-11.17	-0.72	17.41	A	A	A	1.23
106	4.5	0.3	14.21	1.73	7.33	A	A	A	1.57
109	3.86	0.53	-2.03	-0.15	14.06	A	A	A	0.22
110	3.38	0.28	-14.21	-1.84	8.83	A	A	A	1.57

TABLE 16. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
111	4.6	0.6	16.75	1.08	13.39	A	A	A	1.85
112	3.4	0.2	-13.71	-2.32	6.62	A	A	A	1.51
113	3.2	0.2	-18.78	-3.17	6.95	A	N	W	2.07
114	4.7	2	19.29	0.38	42.66	A	N	W	2.13
117	3.84	0.275	-2.54	-0.33	7.78	A	A	A	0.28
118	3.97	0.18	0.76	0.14	5.46	A	A	A	0.08
119	3.97	0.35	0.76	0.08	9.33	A	A	A	0.08
120	3.92	0.26	-0.51	-0.07	7.30	A	A	A	0.06
122	4.0	0.2	1.52	0.26	5.85	A	A	A	0.17
123	3.94	0.29	0.00	0.00	7.97	A	A	A	0.00
125	4.06	0.41	3.05	0.28	10.55	A	A	A	0.34
127	4.0	0.2	1.52	0.26	5.85	A	A	A	0.17
128	4.1	0.2	4.06	0.69	5.75	A	A	A	0.45
130	4.0	0.3	1.52	0.19	8.09	A	A	A	0.17
131	3.907	0.1177	-0.84	-0.20	4.28	A	A	A	0.09
134	3.9	0.3	-1.02	-0.12	8.27	A	A	A	0.11
135	45.0	5.0	1042.13	8.21	11.52	N	N	N	115.11
136	3.9	0.2	-1.02	-0.17	5.96	A	A	A	0.11
138	3.349	0.308	-15.00	-1.79	9.69	A	A	A	1.66
140	3.9	0.2	-1.02	-0.17	5.96	A	A	A	0.11
141	4.3	0.6	9.14	0.59	14.28	A	A	A	1.01
142	3.71	0.27	-5.84	-0.78	7.89	A	A	A	0.64
143	4.4	0.4	11.68	1.10	9.59	A	A	A	1.29
144	4	0.4	1.52	0.14	10.45	A	A	A	0.17
146	3.81	0.17	-3.30	-0.62	5.40	A	A	A	0.36
147	3.70	0.33	-6.09	-0.68	9.42	A	A	A	0.67
148	3.5	0.3	-11.17	-1.36	9.10	A	A	A	1.23
150	4.3	1.2	9.14	0.30	28.07	A	A	A	1.01
151	3.88	0.36	-1.52	-0.16	9.77	A	A	A	0.17
152	4	0.4	1.52	0.14	10.45	A	A	A	0.17
153	3.5	0.3	-11.17	-1.36	9.10	A	A	A	1.23
154	4.1	0.2	4.06	0.69	5.75	A	A	A	0.45
155	3.92	0.46	-0.51	-0.04	12.12	A	A	A	0.06
156	3.83	0.24	-2.79	-0.41	6.97	A	A	A	0.31
157	3.6	0.7	-8.63	-0.48	19.68	A	A	A	0.95
158	4.4	1.1	11.68	0.42	25.18	A	A	A	1.29
159	4.02	0.1	2.03	0.51	3.93	A	A	A	0.22
160	4.6	0.4	16.75	1.58	9.21	A	A	A	1.85
161	3.94	0.23	0.00	0.00	6.58	A	A	A	0.00
162	3.5	0.3	-11.17	-1.36	9.10	A	A	A	1.23
163	4.93	0.68	25.13	1.43	14.13	A	A	A	2.78
164	3.85	0.12	-2.28	-0.53	4.36	A	A	A	0.25
165	3.99	0.19	1.27	0.22	5.65	A	A	A	0.14
166	3.80	0.22	-3.55	-0.56	6.54	A	A	A	0.39
167	3.9	0.3	-1.02	-0.12	8.27	A	A	A	0.11
168	3.9	0.5	-1.02	-0.08	13.18	A	A	A	0.11
170	4.1	0.2	4.06	0.69	5.75	A	A	A	0.45
171	3.88	0.57	-1.52	-0.10	15.00	A	A	A	0.17
173	3.71	0.29	-5.84	-0.73	8.39	A	A	A	0.64
174	3.7	0.4	-6.09	-0.57	11.23	A	A	A	0.67
175	4.6	0.1	16.75	4.23	3.74	A	N	W	1.85
176	3.6	0.3	-8.63	-1.05	8.87	A	A	A	0.95
177	4.04	0.45	2.54	0.21	11.55	A	A	A	0.28
179	4.4	0.5	11.68	0.89	11.76	A	A	A	1.29

TABLE 16. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
180	3.9	0.2	-1.02	-0.17	5.96	A	A	A	0.11
181	3.97	0.51	0.76	0.06	13.20	A	A	A	0.08
182	3.92	0.37	-0.51	-0.05	9.92	A	A	A	0.06
186	3.89	0.81	-1.27	-0.06	21.04	A	A	A	0.14
187	3.87	0.41	-1.78	-0.16	11.02	A	A	A	0.20
188	3.90	0.35	-1.02	-0.11	9.48	A	A	A	0.11
190	7.8	0.6	97.97	6.31	8.27	N	N	N	10.82
192	3.79	0.31	-3.81	-0.45	8.73	A	A	A	0.42
194	3.9	0.5	-1.02	-0.08	13.18	A	A	A	0.11
195	4.20	0.41	6.60	0.61	10.23	A	A	A	0.73
198	3.6	0.4	-8.63	-0.81	11.52	A	A	A	0.95
201	3.85	0.22	-2.28	-0.36	6.48	A	A	A	0.25
204	4.041	0.519	2.56	0.19	13.20	A	A	A	0.28
206	3.62	0.25	-8.12	-1.15	7.55	A	A	A	0.90
207	4.0	0.2	1.52	0.26	5.85	A	A	A	0.17
209	3.73	0.21	-5.33	-0.87	6.40	A	A	A	0.59
210	3.06	0.01	-22.34	-7.31	3.06	A	N	W	2.47
213	4.0	0.2	1.52	0.26	5.85	A	A	A	0.17
216	4.4	0.2	11.68	1.97	5.47	A	A	A	1.29
222	4.43	0.28	12.44	1.61	7.02	A	A	A	1.37
223	4.21	0.31	6.85	0.81	7.97	A	A	A	0.76
224	4.37	0.43	10.91	0.96	10.30	A	A	A	1.21
225	4.32	0.2	9.64	1.63	5.54	A	A	A	1.07
228	3.9	0.2	-1.02	-0.17	5.96	A	A	A	0.11
229	5.40	0.66	37.06	2.18	12.60	A	N	W	4.09
232	3.75	1.18	-4.82	-0.16	31.61	A	A	A	0.53
233	4.12	0.41	4.57	0.42	10.41	A	A	A	0.50
234	4.06	0.45	3.05	0.26	11.49	A	A	A	0.34
236	3.762	0.239	-4.52	-0.67	7.05	A	A	A	0.50
237	4.8	0.5	21.83	1.67	10.85	A	A	A	2.41
239	45.2	2.3	1047.21	17.91	5.93	N	N	N	115.67
241	3.66	0.21	-7.11	-1.16	6.50	A	A	A	0.78
242	4.7	0.4	19.29	1.82	9.04	A	A	A	2.13
243	3.319	0.261	-15.76	-2.16	8.43	A	A	A	1.74
244	4.80	0.32	21.83	2.52	7.33	A	N	W	2.41
245	4.71	0.23	19.54	2.97	5.76	A	N	W	2.16
249	3.8	0.4	-3.55	-0.34	10.96	A	A	A	0.39
252	3.7	0.7	-6.09	-0.34	19.16	A	A	A	0.67

## Reported Results for the I-132 Determination in Sample 2

TABLE 17. Target values

Parameter	Value
Massic Activity, [Bq/kg]	54.1
Uncertainty, [Bq/kg]	2.2
Maximum Acceptable Relative Bias, [%]	25

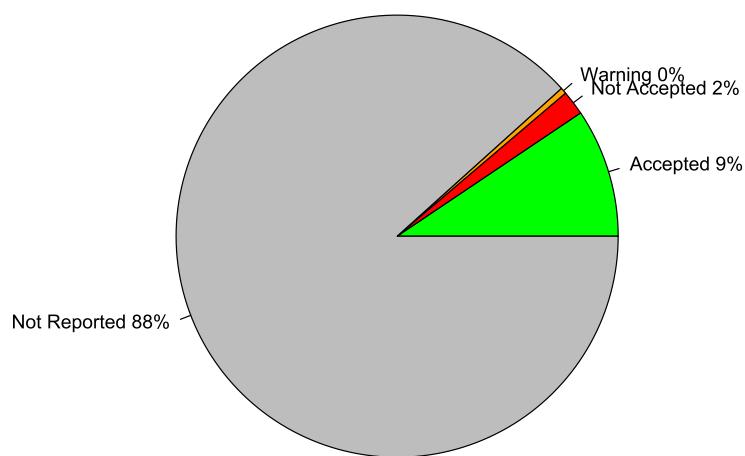


FIGURE 17. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

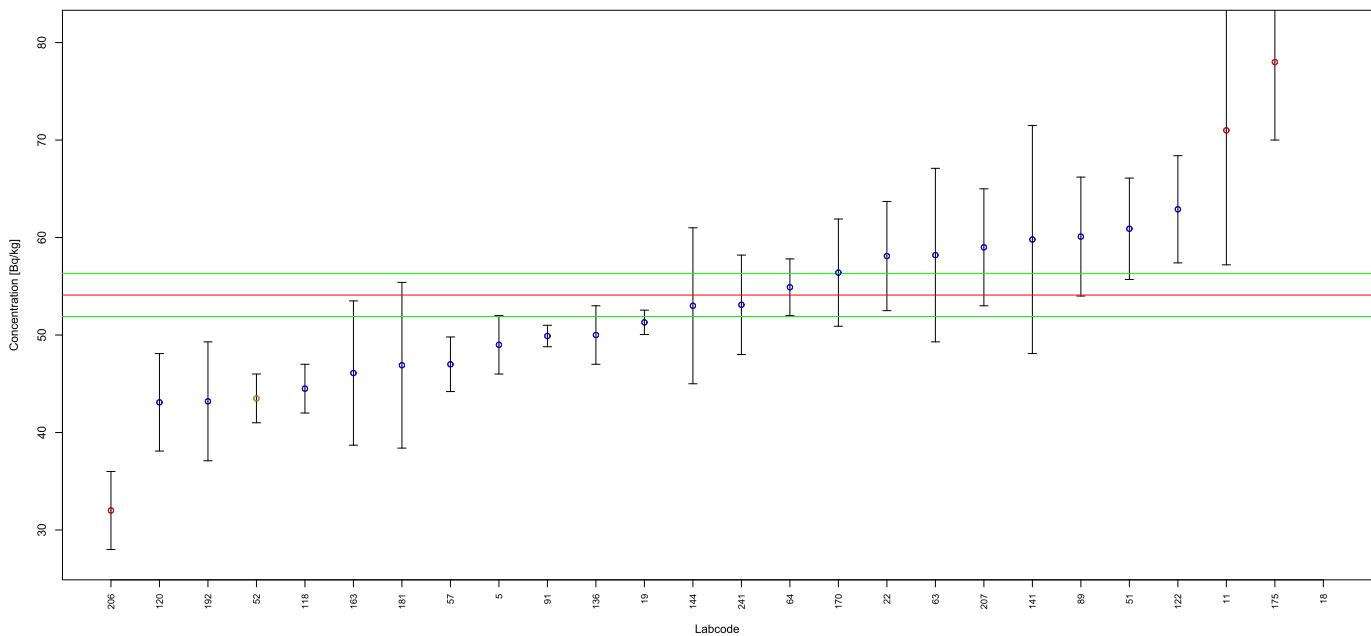


FIGURE 18. Reported results and evaluation parameters for I-132. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 18. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
5	49	3	-9.43	-1.37	7.35	A	A	A	0.55
11	71.0	13.8	31.24	1.21	19.86	N	A	N	1.81
18	144	11	166.17	8.01	8.65	N	N	N	9.63
19	51.3	1.25	-5.18	-1.11	4.74	A	A	A	0.30
22	58.1	5.6	7.39	0.66	10.46	A	A	A	0.43
51	60.9	5.2	12.57	1.20	9.46	A	A	A	0.73
52	43.5	2.5	-19.59	-3.18	7.04	A	N	W	1.14
57	47.0	2.8	-13.12	-1.99	7.21	A	A	A	0.76
63	58.2	8.9	7.58	0.45	15.82	A	A	A	0.44
64	54.9	2.91	1.48	0.22	6.68	A	A	A	0.09
89	60.1	6.1	11.09	0.93	10.93	A	A	A	0.64
91	49.9	1.1	-7.76	-1.71	4.63	A	A	A	0.45
118	44.5	2.5	-17.74	-2.88	6.94	A	A	A	1.03
120	43.1	5.0	-20.33	-2.01	12.29	A	A	A	1.18
122	62.9	5.5	16.27	1.49	9.64	A	A	A	0.94
136	50	3	-7.58	-1.10	7.25	A	A	A	0.44
141	59.8	11.7	10.54	0.48	19.98	A	A	A	0.61
144	53	8	-2.03	-0.13	15.63	A	A	A	0.12
163	46.1	7.4	-14.79	-1.04	16.56	A	A	A	0.86
170	56.4	5.5	4.25	0.39	10.57	A	A	A	0.25
175	78.0	8.0	44.18	2.88	11.03	N	N	N	2.56
181	46.9	8.5	-13.31	-0.82	18.57	A	A	A	0.77
192	43.2	6.1	-20.15	-1.68	14.69	A	A	A	1.17
206	32	4	-40.85	-4.84	13.14	N	N	N	2.37
207	59.0	6.0	9.06	0.77	10.95	A	A	A	0.52
241	53.1	5.1	-1.85	-0.18	10.43	A	A	A	0.11

## **Reported Results for the Ba-140 Determination in Sample 2**

TABLE 19. Target values

Parameter	Value
Massic Activity, [Bq/kg]	37.1
Uncertainty, [Bq/kg]	1.1
Maximum Acceptable Relative Bias, [%]	30

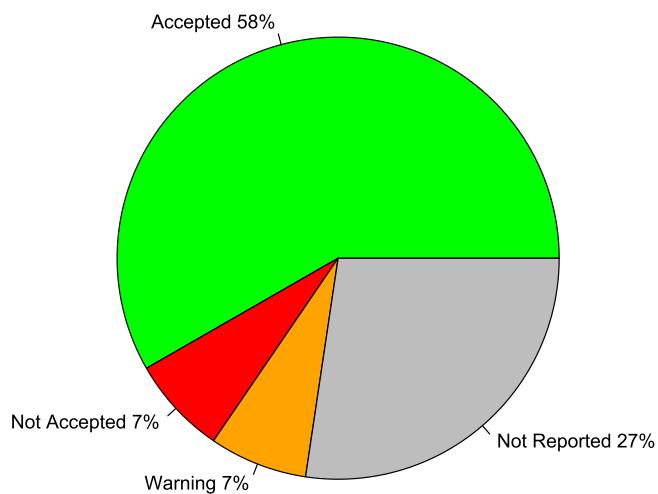


FIGURE 19. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

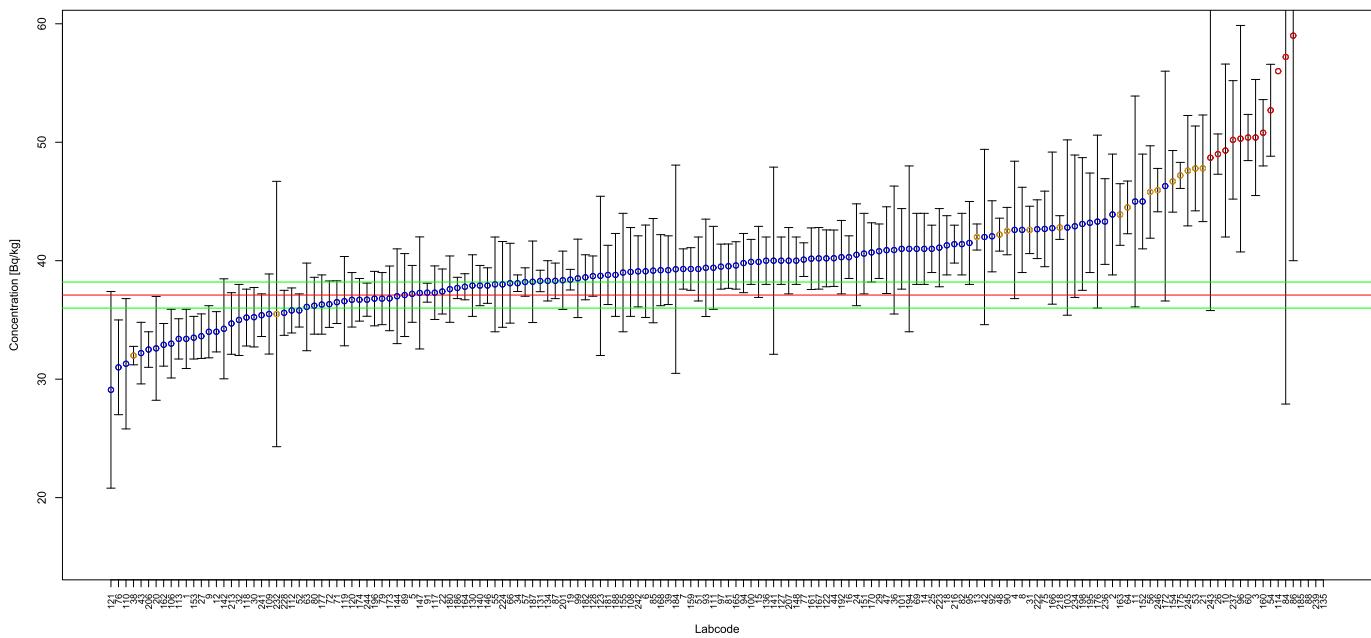


FIGURE 20. Reported results and evaluation parameters for Ba-140. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 20. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	33.4	2.5	-9.97	-1.35	8.05	A	A	A	0.91
2	43.9	5.1	18.33	1.30	11.99	A	A	A	1.68
3	50.4	4.9	35.85	2.65	10.16	N	N	N	3.28
4	42.6	5.8	14.82	0.93	13.93	A	A	A	1.36
5	37.2	2.4	0.27	0.04	7.10	A	A	A	0.02
6	39.11	3.90	5.42	0.50	10.40	A	A	A	0.50
7	39.3	1.7	5.93	1.09	5.24	A	A	A	0.54
8	42.6	3.6	14.82	1.46	8.96	A	A	A	1.36
9	34.0	2.2	-8.36	-1.26	7.12	A	A	A	0.77
10	49.3	7.3	32.88	1.65	15.10	N	A	N	3.01
11	45.0	8.9	21.29	0.88	20.00	A	A	A	1.95
12	34.0	1.7	-8.36	-1.53	5.81	A	A	A	0.77
13	42.0	1.1	13.21	3.15	3.96	A	N	W	1.21
14	41	3	10.51	1.22	7.89	A	A	A	0.96
15	39.9	3.0	7.55	0.88	8.08	A	A	A	0.69
16	40.3	1.8	8.63	1.52	5.36	A	A	A	0.79
18	41.3	2.5	11.32	1.54	6.74	A	A	A	1.04
19	38.4	0.87	3.50	0.93	3.73	A	A	A	0.32
20	32.6	4.381	-12.13	-1.00	13.76	A	A	A	1.11
21	47.8	4.5	28.84	2.31	9.87	A	N	W	2.64
22	37.4	1.9	0.81	0.14	5.88	A	A	A	0.07
24	40.5	4.3	9.16	0.77	11.02	A	A	A	0.84
25	41	2	10.51	1.71	5.71	A	A	A	0.96
26	49.0	1.7	32.08	5.88	4.56	N	N	N	2.94
27	33.63	1.88	-9.35	-1.59	6.33	A	A	A	0.86
29	40.8	2.3	9.97	1.45	6.37	A	A	A	0.91
30	35.23	2.51	-5.04	-0.68	7.72	A	A	A	0.46
31	42.6	2.0	14.82	2.41	5.55	A	N	W	1.36
32	35	3	-5.66	-0.66	9.07	A	A	A	0.52
34	38.1	0.7	2.70	0.77	3.49	A	A	A	0.25

TABLE 20. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
36	40.9	5.4	10.24	0.69	13.53	A	A	A	0.94
38	31.99	0.78	-13.77	-3.79	3.84	A	N	W	1.26
39	39.2	2.9	5.66	0.68	7.97	A	A	A	0.52
42	42.0	7.4	13.21	0.65	17.87	A	A	A	1.21
43	32.2	2.6	-13.21	-1.74	8.60	A	A	A	1.21
44	40.21	2.38	8.38	1.19	6.62	A	A	A	0.77
47	40.89	3.66	10.22	0.99	9.43	A	A	A	0.94
48	42.2	1.39	13.75	2.88	4.43	A	N	W	1.26
51	39.3	2.7	5.93	0.75	7.48	A	A	A	0.54
52	35.8	1.4	-3.50	-0.73	4.91	A	A	A	0.32
53	47.79	3.58	28.81	2.85	8.06	A	N	W	2.64
54	52.70	3.88	42.05	3.87	7.94	N	N	N	3.85
55	38	4	2.43	0.22	10.94	A	A	A	0.22
56	45.8	3.9	23.45	2.15	9.02	A	N	W	2.15
57	38.2	1.2	2.96	0.68	4.32	A	A	A	0.27
60	50.4	1.95	35.85	5.94	4.87	N	N	N	3.28
63	36.1	3.7	-2.70	-0.26	10.67	A	A	A	0.25
64	44.5	2.225	19.95	2.98	5.81	A	N	W	1.83
66	38.1	3.37	2.70	0.28	9.33	A	A	A	0.25
69	41	3	10.51	1.22	7.89	A	A	A	0.96
71	36.5	1.8	-1.62	-0.28	5.75	A	A	A	0.15
72	36.33	1.96	-2.08	-0.34	6.16	A	A	A	0.19
75	42.683	3.19	15.05	1.65	8.04	A	A	A	1.38
76	31	4	-16.44	-1.47	13.24	A	A	A	1.51
77	40.09	1.42	8.06	1.66	4.62	A	A	A	0.74
79	36.8	2.2	-0.81	-0.12	6.67	A	A	A	0.07
80	36.2	2.4	-2.43	-0.34	7.26	A	A	A	0.22
81	39.539	1.872	6.57	1.12	5.59	A	A	A	0.60
82	41.4	2.6	11.59	1.52	6.94	A	A	A	1.06
84	57.2	29.3	54.18	0.69	51.31	N	N	N	4.96
85	39.16	4.40	5.55	0.45	11.62	A	A	A	0.51
86	59	19	59.03	1.15	32.34	N	N	N	5.41
87	38.3	1.5	3.23	0.65	4.91	A	A	A	0.30
88	888.2	0.5	2294.07	704.38	2.97	N	N	N	210.09
89	37.1	3.5	0.00	0.00	9.89	A	A	A	0.00
90	42.5	2.0	14.56	2.37	5.56	A	N	W	1.33
91	37.3	0.8	0.54	0.15	3.66	A	A	A	0.05
92	42.06	3.0	13.37	1.55	7.72	A	A	A	1.22
93	39.4	4.11	6.20	0.54	10.84	A	A	A	0.57
94	39.8	2.5	7.28	0.99	6.95	A	A	A	0.67
95	41.5	3.5	11.86	1.20	8.94	A	A	A	1.09
96	50.30	9.56	35.58	1.37	19.24	N	A	N	3.26
97	39.5	1.9	6.47	1.09	5.65	A	A	A	0.59
99	38.51	3.31	3.80	0.40	9.09	A	A	A	0.35
100	39.9	1.9	7.55	1.28	5.61	A	A	A	0.69
101	41.0	3.4	10.51	1.09	8.81	A	A	A	0.96
103	42.8	7.4	15.36	0.76	17.54	A	A	A	1.41
106	33.0	2.9	-11.05	-1.32	9.27	A	A	A	1.01
108	39.05	3.75	5.26	0.50	10.05	A	A	A	0.48
109	35.5	3.38	-4.31	-0.45	9.97	A	A	A	0.39
110	31.3	5.5	-15.63	-1.03	17.82	A	A	A	1.43
111	39.4	3.5	6.20	0.63	9.36	A	A	A	0.57
112	35.8	1.9	-3.50	-0.59	6.08	A	A	A	0.32
113	33.4	1.7	-9.97	-1.83	5.89	A	A	A	0.91

TABLE 20. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
114	56		50.94			N		N	4.67
117	37.3	2.26	0.54	0.08	6.75	A	A	A	0.05
118	35.2	2.4	-5.12	-0.72	7.43	A	A	A	0.47
119	36.586	3.77	-1.39	-0.13	10.72	A	A	A	0.13
120	36.7	2.3	-1.08	-0.16	6.93	A	A	A	0.10
121	29.1	8.3	-21.56	-0.96	28.68	A	A	A	1.97
122	40.2	2.4	8.36	1.17	6.67	A	A	A	0.77
123	38.72	6.72	4.37	0.24	17.61	A	A	A	0.40
127	40.0	2.0	7.82	1.27	5.81	A	A	A	0.72
128	38.7	1.7	4.31	0.79	5.30	A	A	A	0.39
130	37.9	2.6	2.16	0.28	7.47	A	A	A	0.20
131	38.29	0.906	3.21	0.84	3.79	A	A	A	0.29
134	38.3	1.7	3.23	0.59	5.34	A	A	A	0.30
135	55000	8000	148147.98	6.87	14.84	N	N	N	13567.58
136	40	2	7.82	1.27	5.81	A	A	A	0.72
140	37.9	1.7	2.16	0.40	5.38	A	A	A	0.20
141	40.0	7.9	7.82	0.36	19.97	A	A	A	0.72
142	34.25	4.22	-7.68	-0.65	12.67	A	A	A	0.70
144	37	4	-0.27	-0.02	11.21	A	A	A	0.02
146	37.9	1.5	2.16	0.43	4.95	A	A	A	0.20
147	37.28	4.73	0.49	0.04	13.03	A	A	A	0.04
148	40	2	7.82	1.27	5.81	A	A	A	0.72
151	40.6	3.4	9.43	0.98	8.88	A	A	A	0.86
152	45	4	21.29	1.90	9.37	A	A	A	1.95
153	33.5	1.8	-9.70	-1.71	6.14	A	A	A	0.89
154	46.7	2.6	25.88	3.40	6.31	A	N	W	2.37
155	39	5	5.12	0.37	13.16	A	A	A	0.47
159	39.3	1.8	5.93	1.04	5.46	A	A	A	0.54
160	50.8	2.8	36.93	4.55	6.26	N	N	N	3.38
161	40.17	2.6	8.27	1.09	7.12	A	A	A	0.76
162	32.9	1.8	-11.32	-1.99	6.22	A	A	A	1.04
163	43.9	2.6	18.33	2.41	6.62	A	N	W	1.68
164	37.8	1.1	1.89	0.45	4.15	A	A	A	0.17
165	39.6	2.0	6.74	1.10	5.86	A	A	A	0.62
166	42.75	6.42	15.23	0.87	15.31	A	A	A	1.39
167	40.2	2.6	8.36	1.10	7.11	A	A	A	0.77
168	39.2	3.0	5.66	0.66	8.21	A	A	A	0.52
170	40.7	2.5	9.70	1.32	6.82	A	A	A	0.89
172	46.3	9.7	24.80	0.94	21.16	A	A	A	2.27
173	36.82	2.73	-0.75	-0.10	7.99	A	A	A	0.07
174	36.7	1.8	-1.08	-0.19	5.73	A	A	A	0.10
175	47.2	1.1	27.22	6.49	3.77	A	N	W	2.49
176	43.3	7.3	16.71	0.84	17.12	A	A	A	1.53
177	36.3	2.5	-2.16	-0.29	7.50	A	A	A	0.20
180	37.6	2.8	1.35	0.17	8.02	A	A	A	0.12
181	38.8	2.5	4.58	0.62	7.09	A	A	A	0.42
182	38.6	1.9	4.04	0.68	5.75	A	A	A	0.37
184	39.28	8.79	5.88	0.25	22.57	A	A	A	0.54
185	136.1	10.6	266.85	9.29	8.33	N	N	N	24.44
186	37.7	0.9	1.62	0.42	3.81	A	A	A	0.15
187	38.22	3.44	3.02	0.31	9.48	A	A	A	0.28
188	38.80	3.50	4.58	0.46	9.50	A	A	A	0.42
192	40.3	3.1	8.63	0.97	8.24	A	A	A	0.79
194	41.0	7.0	10.51	0.55	17.33	A	A	A	0.96

TABLE 20. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
195	43.2	4.2	16.44	1.40	10.16	A	A	A	1.51
196	36.8	2.3	-0.81	-0.12	6.92	A	A	A	0.07
198	43.1	5.6	16.17	1.05	13.33	A	A	A	1.48
201	38.35	2.46	3.37	0.46	7.07	A	A	A	0.31
206	32.5	1.5	-12.40	-2.47	5.49	A	A	A	1.14
207	40.0	2.8	7.82	0.96	7.60	A	A	A	0.72
213	34.7	2.6	-6.47	-0.85	8.06	A	A	A	0.59
216	41.4	1.6	11.59	2.21	4.87	A	A	A	1.06
218	42.8	1.0	15.36	3.83	3.77	A	N	W	1.41
222	42.66	2.48	14.99	2.05	6.53	A	A	A	1.37
223	41.1	3.3	10.78	1.15	8.56	A	A	A	0.99
224	38.0	3.62	2.43	0.24	9.98	A	A	A	0.22
228	35.6	1.9	-4.04	-0.68	6.11	A	A	A	0.37
232	35.5	11.2	-4.31	-0.14	31.69	A	N	W	0.39
234	42.91	6.01	15.66	0.95	14.32	A	A	A	1.43
236	43.307	3.617	16.73	1.64	8.86	A	A	A	1.53
237	50.2	5.0	35.31	2.56	10.39	N	N	N	3.23
239	52400	7426	141139.89	7.05	14.48	N	N	N	12925.77
241	35.4	1.8	-4.58	-0.81	5.89	A	A	A	0.42
242	39.1	3.0	5.39	0.63	8.23	A	A	A	0.49
243	48.69	12.9	31.24	0.90	26.66	N	A	N	2.86
244	36.71	1.40	-1.05	-0.22	4.83	A	A	A	0.10
245	47.60	4.66	28.30	2.19	10.23	A	N	W	2.59
246	45.96	1.83	23.88	4.15	4.96	A	N	W	2.19

## **Reported Results for the Ce-141 Determination in Sample 2**

TABLE 21. Target values

Parameter	Value
Massic Activity, [Bq/kg]	15.7
Uncertainty, [Bq/kg]	0.4
Maximum Acceptable Relative Bias, [%]	30

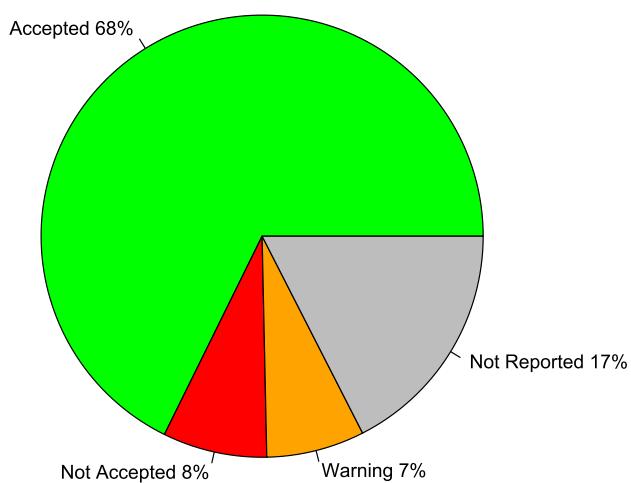


FIGURE 21. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

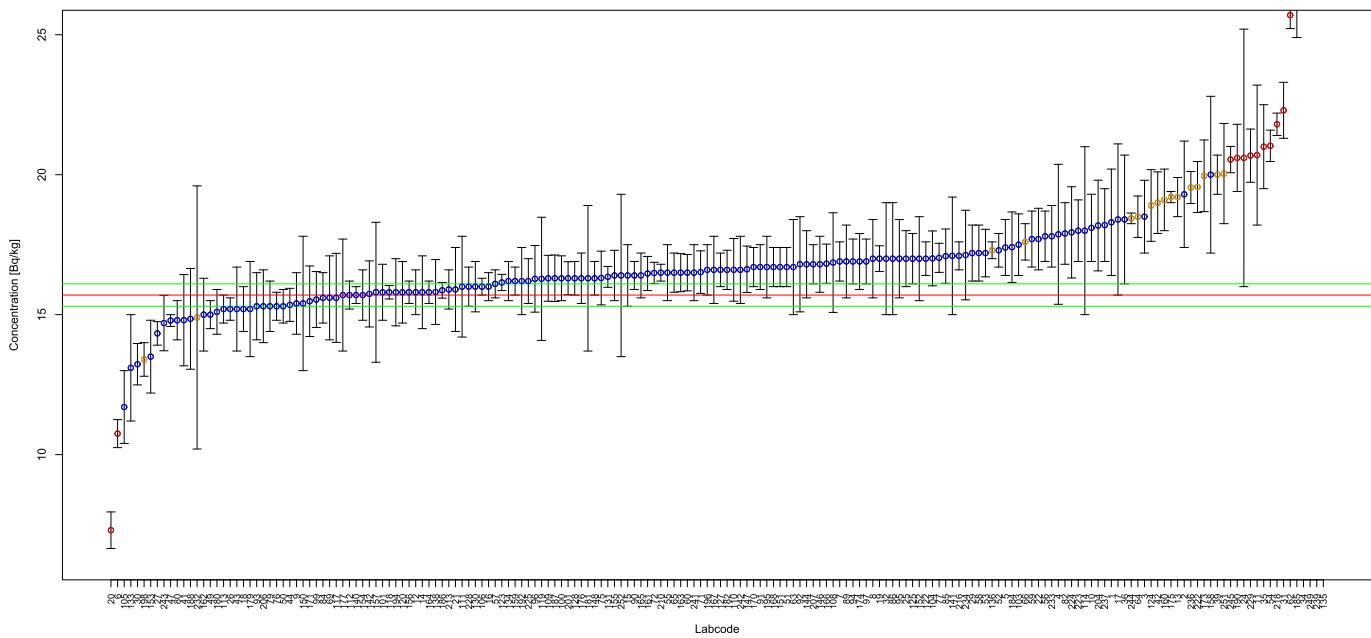


FIGURE 22. Reported results and evaluation parameters for Ce-141. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 22. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	18.3	1.9	16.56	1.34	10.69	A	A	A	2.05
2	19.3	1.9	22.93	1.85	10.17	A	A	A	2.84
3	18.5	1.3	17.83	2.06	7.47	A	A	A	2.21
4	17.87	2.5	13.82	0.86	14.22	A	A	A	1.71
5	17.4	1.0	10.83	1.58	6.29	A	A	A	1.34
6	10.75	0.5	-31.53	-7.73	5.30	N	N	N	3.91
7	16.9	0.7	7.64	1.49	4.86	A	A	A	0.95
8	17.0	1.4	8.28	0.89	8.62	A	A	A	1.03
9	15.4	1.1	-1.91	-0.26	7.58	A	A	A	0.24
10	18.1	1.2	15.29	1.90	7.10	A	A	A	1.90
11	20.7	2.5	31.85	1.97	12.34	N	N	N	3.95
12	15.8	0.8	0.64	0.11	5.67	A	A	A	0.08
13	19.2	0.7	22.29	4.34	4.45	A	N	W	2.76
14	15.8	1.3	0.64	0.07	8.61	A	A	A	0.08
15	16.4	1.1	4.46	0.60	7.17	A	A	A	0.55
16	16.0	0.5	1.91	0.47	4.03	A	A	A	0.24
17	18.4	2.7	17.20	0.99	14.89	A	A	A	2.13
18	15.2	0.8	-3.18	-0.56	5.85	A	A	A	0.39
19	17.0	0.46	8.28	2.13	3.72	A	A	A	1.03
20	7.3	0.6526	-53.50	-10.97	9.30	N	N	N	6.63
21	15.9	1.5	1.27	0.13	9.77	A	A	A	0.16
22	17.7	1.1	12.74	1.71	6.72	A	A	A	1.58
24	20.6	4.6	31.21	1.06	22.47	N	A	N	3.87
25	17.0	1.0	8.28	1.21	6.41	A	A	A	1.03
26	15.2	0.4	-3.18	-0.88	3.66	A	A	A	0.39
27	14.33	0.42	-8.73	-2.36	3.88	A	A	A	1.08
29	17.2	1.0	9.55	1.39	6.35	A	A	A	1.18
30	13.23	0.74	-15.73	-2.94	6.15	A	A	A	1.95
31	22.3	1.0	42.04	6.13	5.16	N	N	N	5.21
32	17	2	8.28	0.64	12.04	A	A	A	1.03

TABLE 22. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
34	29.2	2.8	85.99	4.77	9.92	N	N	N	10.66
35	21	1.5	33.76	3.41	7.58	N	N	N	4.19
36	18.4	2.3	17.20	1.16	12.76	A	A	A	2.13
39	20.0	0.7	27.39	5.33	4.33	A	N	W	3.40
41	14.803	1.63	-5.71	-0.53	11.30	A	A	A	0.71
42	19.0	1.1	21.02	2.82	6.33	A	N	W	2.61
43	15.2	1.5	-3.18	-0.32	10.19	A	A	A	0.39
44	15.35	0.59	-2.23	-0.49	4.61	A	A	A	0.28
47	14.79	0.21	-5.80	-2.01	2.92	A	A	A	0.72
49	15.0	0.5	-4.46	-1.09	4.20	A	A	A	0.55
50	15.3	0.6	-2.55	-0.55	4.68	A	A	A	0.32
51	16.7	0.7	6.37	1.24	4.91	A	A	A	0.79
52	17.3	0.6	10.19	2.22	4.30	A	A	A	1.26
53	17.20	0.85	9.55	1.60	5.56	A	A	A	1.18
54	21.03	0.56	33.95	7.74	3.69	N	N	N	4.21
55	16.5	1.0	5.10	0.74	6.57	A	A	A	0.63
56	17.8	0.9	13.38	2.13	5.66	A	A	A	1.66
57	16.1	0.5	2.55	0.62	4.02	A	A	A	0.32
58	17.2	1.0	9.55	1.39	6.35	A	A	A	1.18
59	17.7	1.0	12.74	1.86	6.20	A	A	A	1.58
60	16.5	0.65	5.10	1.05	4.69	A	A	A	0.63
62	25.70	0.48	63.69	16.00	3.16	N	N	N	7.90
63	16.7	1.7	6.37	0.57	10.49	A	A	A	0.79
64	18.5	0.74	17.83	3.33	4.74	A	N	W	2.21
65	16.5	0.7	5.10	0.99	4.95	A	A	A	0.63
66	17.6	0.65	12.10	2.49	4.49	A	N	W	1.50
69	15.6	1.5	-0.64	-0.06	9.95	A	A	A	0.08
71	16.52	0.76	5.22	0.95	5.26	A	A	A	0.65
72	16.49	0.38	5.03	1.43	3.44	A	A	A	0.62
75	16.309	0.96	3.88	0.59	6.41	A	A	A	0.48
76	15.3	0.5	-2.55	-0.62	4.14	A	A	A	0.32
77	17.03	0.52	8.47	2.03	3.98	A	A	A	1.05
79	15.3	0.9	-2.55	-0.41	6.41	A	A	A	0.32
80	14.8	0.7	-5.73	-1.12	5.37	A	A	A	0.71
82	17.9	1.1	14.01	1.88	6.65	A	A	A	1.74
84	15.6	0.9	-0.64	-0.10	6.31	A	A	A	0.08
85	17.09	0.97	8.85	1.32	6.22	A	A	A	1.10
86	17.0	2.0	8.28	0.64	12.04	A	A	A	1.03
89	16.9	1.3	7.64	0.88	8.10	A	A	A	0.95
90	16.4	0.5	4.46	1.09	3.97	A	A	A	0.55
91	16.7	0.8	6.37	1.12	5.43	A	A	A	0.79
92	16.8	1.7	7.01	0.63	10.43	A	A	A	0.87
93	15.3	1.2	-2.55	-0.32	8.25	A	A	A	0.32
94	16.9	0.8	7.64	1.34	5.38	A	A	A	0.95
95	17	1.4	8.28	0.89	8.62	A	A	A	1.03
96	16.28	1.19	3.69	0.46	7.74	A	A	A	0.46
97	16.9	0.8	7.64	1.34	5.38	A	A	A	0.95
99	15.54	1.00	-1.02	-0.15	6.92	A	A	A	0.13
100	16.3	0.8	3.82	0.67	5.53	A	A	A	0.47
101	15.8	1.0	0.64	0.09	6.82	A	A	A	0.08
103	17.5	1.1	11.46	1.54	6.78	A	A	A	1.42
104	17.01	0.98	8.34	1.24	6.30	A	A	A	1.03
105	11.7	1.3	-25.48	-2.94	11.40	A	A	A	3.16
106	16.0	0.3	1.91	0.60	3.16	A	A	A	0.24

TABLE 22. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
108	16.86	1.78	7.39	0.64	10.86	A	A	A	0.92
109	16.3	0.82	3.82	0.66	5.64	A	A	A	0.47
110	16.6	1.12	5.73	0.76	7.21	A	A	A	0.71
111	16.0	1.8	1.91	0.16	11.53	A	A	A	0.24
112	15.7	0.5	0.00	0.00	4.08	A	A	A	0.00
113	15.2	0.5	-3.18	-0.78	4.16	A	A	A	0.39
114	18	3	14.65	0.76	16.86	A	A	A	1.82
117	15.6	1.59	-0.64	-0.06	10.51	A	A	A	0.08
118	15.8	0.24	0.64	0.21	2.97	A	A	A	0.08
119	16.28	2.2	3.69	0.26	13.75	A	A	A	0.46
120	15.8	1.1	0.64	0.09	7.41	A	A	A	0.08
122	17.0	0.6	8.28	1.80	4.35	A	A	A	1.03
123	16.15	0.29	2.87	0.91	3.12	A	A	A	0.36
124	18.9	1.28	20.38	2.39	7.24	A	N	W	2.53
125	17.0	0.9	8.28	1.32	5.88	A	A	A	1.03
127	16.6	0.6	5.73	1.25	4.42	A	A	A	0.71
128	16.3	0.6	3.82	0.83	4.48	A	A	A	0.47
130	16.0	0.9	1.91	0.30	6.18	A	A	A	0.24
131	16.35	0.373	4.14	1.19	3.42	A	A	A	0.51
133	13.1	1.9	-16.56	-1.34	14.73	A	A	A	2.05
134	16.2	0.7	3.18	0.62	5.02	A	A	A	0.39
135	315	30	1906.37	9.98	9.86	N	N	N	236.40
136	17.3	0.3	10.19	3.20	3.08	A	N	W	1.26
138	15.810	1.159	0.70	0.09	7.76	A	A	A	0.09
140	15.7	0.3	0.00	0.00	3.18	A	A	A	0.00
141	17.1	2.1	8.92	0.65	12.54	A	A	A	1.11
142	15.74	1.18	0.25	0.03	7.92	A	A	A	0.03
144	16.8	1.2	7.01	0.87	7.58	A	A	A	0.87
146	16.8	1.0	7.01	1.02	6.47	A	A	A	0.87
147	16.62	0.83	5.86	1.00	5.61	A	A	A	0.73
148	16.3	0.6	3.82	0.83	4.48	A	A	A	0.47
150	15.4	2.4	-1.91	-0.12	15.79	A	A	A	0.24
151	16.7	0.7	6.37	1.24	4.91	A	A	A	0.79
152	17	1.5	8.28	0.84	9.18	A	A	A	1.03
153	13.5	1.3	-14.01	-1.62	9.96	A	A	A	1.74
154	15.7	0.9	0.00	0.00	6.27	A	A	A	0.00
155	16.4	0.9	4.46	0.71	6.05	A	A	A	0.55
156	15.8	0.4	0.64	0.18	3.59	A	A	A	0.08
157	15.8	2.5	0.64	0.04	16.03	A	A	A	0.08
158	20	2.8	27.39	1.52	14.23	A	A	A	3.40
159	16.2	0.5	3.18	0.78	4.00	A	A	A	0.39
160	19.1	1.1	21.66	2.90	6.30	A	N	W	2.69
161	16.47	0.61	4.90	1.06	4.50	A	A	A	0.61
162	15.0	1.3	-4.46	-0.51	9.03	A	A	A	0.55
163	16.5	0.68	5.10	1.01	4.85	A	A	A	0.63
164	15.8	0.4	0.64	0.18	3.59	A	A	A	0.08
165	16.4	0.8	4.46	0.78	5.50	A	A	A	0.55
166	16.82	0.70	7.13	1.39	4.88	A	A	A	0.88
167	16.6	1.2	5.73	0.71	7.66	A	A	A	0.71
168	16.7	0.7	6.37	1.24	4.91	A	A	A	0.79
170	16.7	0.7	6.37	1.24	4.91	A	A	A	0.79
171	15.48	1.26	-1.40	-0.17	8.53	A	A	A	0.17
173	19.96	1.28	27.13	3.18	6.90	A	N	W	3.36
174	16.9	1.0	7.64	1.11	6.44	A	A	A	0.95

TABLE 22. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
175	19.2	0.2	22.29	7.83	2.75	A	N	W	2.76
176	16.3	0.9	3.82	0.61	6.08	A	A	A	0.47
177	15.7	2.0	0.00	0.00	12.99	A	A	A	0.00
179	15.2	1.7	-3.18	-0.29	11.47	A	A	A	0.39
180	15.1	0.8	-3.82	-0.67	5.88	A	A	A	0.47
181	16.3	2.6	3.82	0.23	16.15	A	A	A	0.47
182	16.6	0.7	5.73	1.12	4.93	A	A	A	0.71
184	17.41	1.26	10.89	1.29	7.67	A	A	A	1.35
185	26.4	1.5	68.15	6.89	6.23	N	N	N	8.45
186	15.87	0.28	1.08	0.35	3.10	A	A	A	0.13
187	16.30	0.83	3.82	0.65	5.69	A	A	A	0.47
188	14.85	1.80	-5.41	-0.46	12.39	A	A	A	0.67
190	20.6	1.2	31.21	3.87	6.36	N	N	N	3.87
192	16.2	1.2	3.18	0.40	7.83	A	A	A	0.39
194	15.8	1.2	0.64	0.08	8.01	A	A	A	0.08
195	16.7	1.1	6.37	0.85	7.06	A	A	A	0.79
196	16.6	0.9	5.73	0.91	5.99	A	A	A	0.71
198	13.4	0.6	-14.65	-3.19	5.15	A	N	W	1.82
201	16.30	0.59	3.82	0.84	4.43	A	A	A	0.47
202	16.2	1.6	3.18	0.30	10.20	A	A	A	0.39
204	18.184	1.62	15.82	1.49	9.27	A	A	A	1.96
206	15.3	1.3	-2.55	-0.29	8.87	A	A	A	0.32
207	16.8	0.7	7.01	1.36	4.88	A	A	A	0.87
210	16.5	0.3	5.10	1.60	3.13	A	A	A	0.63
213	15.9	0.7	1.27	0.25	5.09	A	A	A	0.16
216	17.1	0.5	8.92	2.19	3.88	A	A	A	1.11
218	21.8	0.4	38.85	10.78	3.14	N	N	N	4.82
222	19.56	0.91	24.59	3.88	5.30	A	N	W	3.05
223	18.0	1.1	14.65	1.97	6.62	A	A	A	1.82
224	17.94	1.63	14.27	1.33	9.44	A	A	A	1.77
225	16.2	0.8	3.18	0.56	5.56	A	A	A	0.39
228	16.0	0.7	1.91	0.37	5.06	A	A	A	0.24
229	20.68	0.95	31.72	4.83	5.25	N	N	N	3.93
232	14.9	4.7	-5.10	-0.17	31.65	A	N	W	0.63
233	17.8	1.1	13.38	1.79	6.68	A	A	A	1.66
234	17.13	1.60	9.11	0.87	9.68	A	A	A	1.13
236	19.541	0.572	24.46	5.50	3.88	A	N	W	3.03
237	18.2	1.3	15.92	1.84	7.58	A	A	A	1.97
239	293	6.3	1766.24	43.93	3.33	N	N	N	219.02
241	16.5	1.0	5.10	0.74	6.57	A	A	A	0.63
242	16.6	1.2	5.73	0.71	7.66	A	A	A	0.71
243	14.7	0.99	-6.37	-0.94	7.20	A	A	A	0.79
244	18.44	0.19	17.45	6.19	2.75	A	N	W	2.16
245	20.54	0.47	30.83	7.84	3.42	N	N	N	3.82
249	167	1	963.69	140.48	2.62	N	N	N	119.50
251	20.04	1.79	27.64	2.37	9.29	A	N	W	3.43
252	16.4	2.9	4.46	0.24	17.87	A	A	A	0.55

## Reported Results for the Ce-143 Determination in Sample 2

TABLE 23. Target values

Parameter	Value
Massic Activity, [Bq/kg]	48
Uncertainty, [Bq/kg]	4
Maximum Acceptable Relative Bias, [%]	25

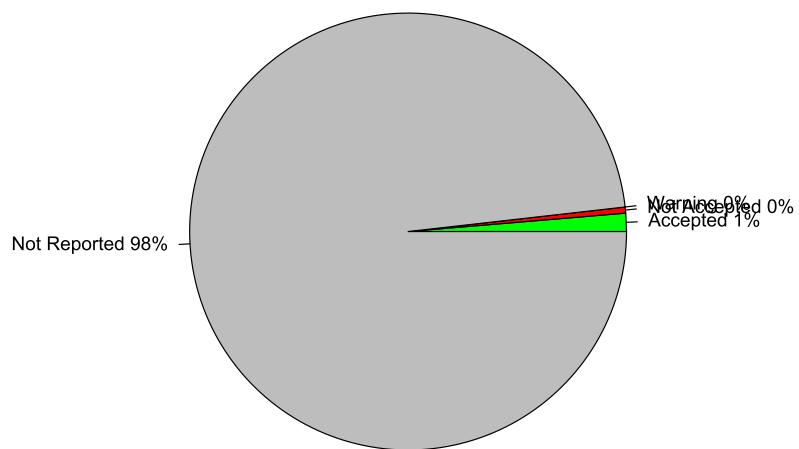


FIGURE 23. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

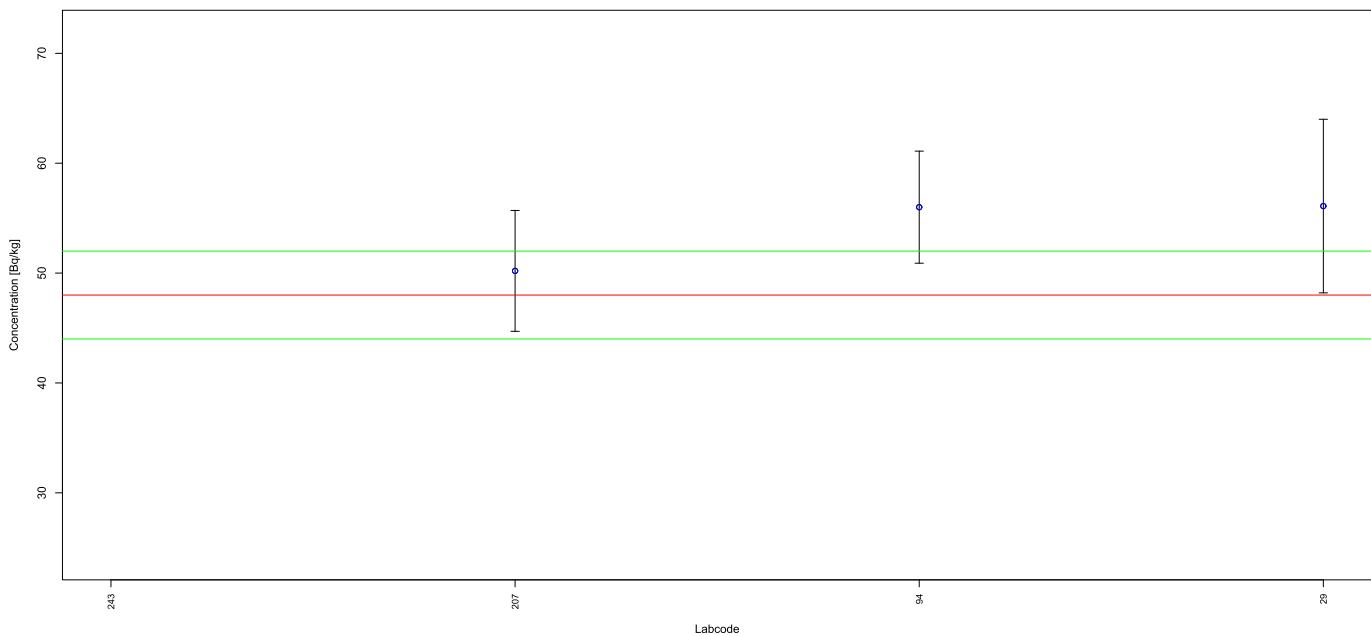


FIGURE 24. Reported results and evaluation parameters for Ce-143. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 24. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
29	56.1	7.9	16.88	0.91	16.36	A	A	A	1.53
94	56.0	5.1	16.67	1.23	12.34	A	A	A	1.51
207	50.2	5.5	4.58	0.32	13.77	A	A	A	0.41
243	0.00	0.00	-100.00	-12.00		N		N	9.04

## **Reported Results for the Ce-144 Determination in Sample 2**

TABLE 25. Target values

Parameter	Value
Massic Activity, [Bq/kg]	1.85
Uncertainty, [Bq/kg]	0.24
Maximum Acceptable Relative Bias, [%]	60

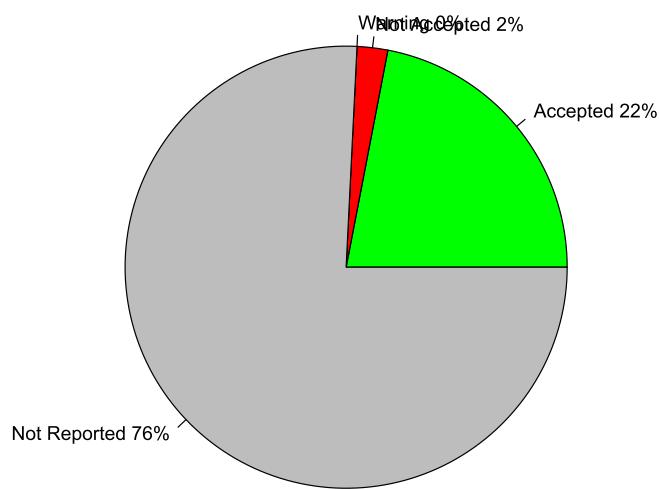


FIGURE 25. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

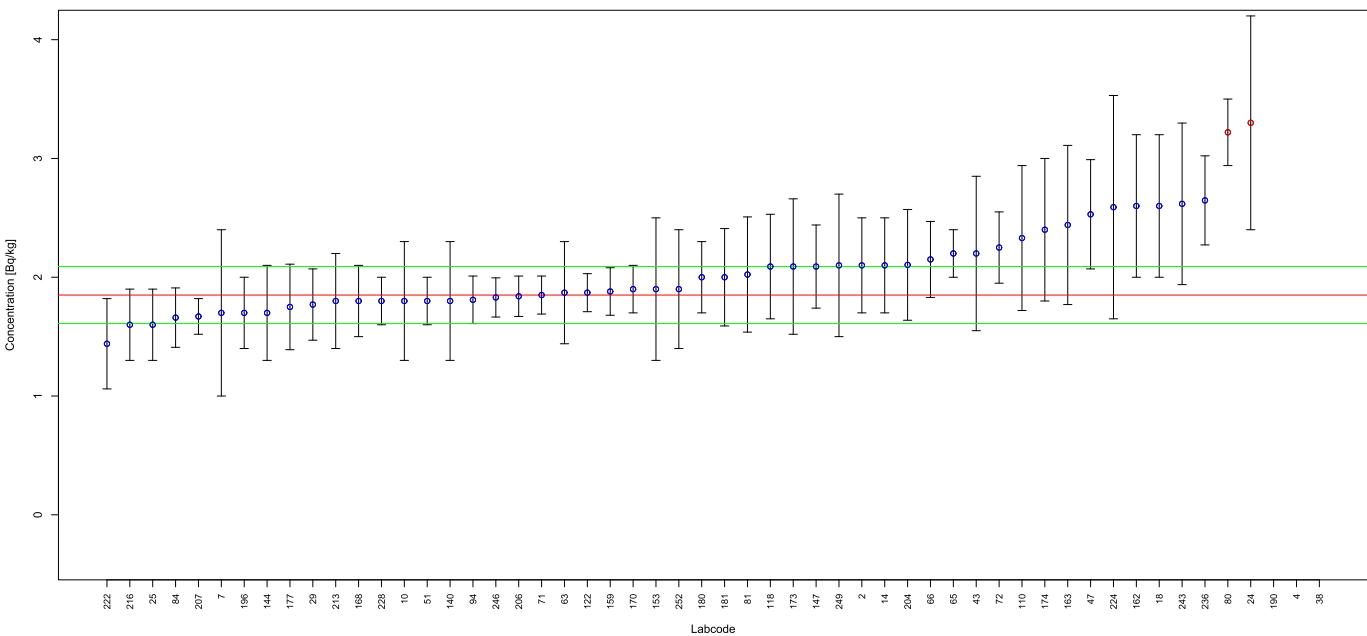


FIGURE 26. Reported results and evaluation parameters for Ce-144. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 26. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
2	2.1	0.4	13.51	0.54	23.05	A	A	A	0.77
4	5.65	0.79	205.41	4.60	19.07	N	N	N	11.66
7	1.7	0.7	-8.11	-0.20	43.17	A	A	A	0.46
10	1.8	0.5	-2.70	-0.09	30.66	A	A	A	0.15
14	2.1	0.4	13.51	0.54	23.05	A	A	A	0.77
18	2.6	0.6	40.54	1.16	26.47	A	A	A	2.30
24	3.3	0.9	78.38	1.56	30.20	N	N	N	4.45
25	1.6	0.3	-13.51	-0.65	22.80	A	A	A	0.77
29	1.77	0.30	-4.32	-0.21	21.34	A	A	A	0.25
38	15.77	0.37	752.43	31.56	13.18	N	N	N	42.72
43	2.2	0.65	18.92	0.51	32.27	A	A	A	1.07
47	2.53	0.46	36.76	1.31	22.34	A	A	A	2.09
51	1.8	0.2	-2.70	-0.16	17.08	A	A	A	0.15
63	1.87	0.43	1.08	0.04	26.40	A	A	A	0.06
65	2.20	0.20	18.92	1.12	15.84	A	A	A	1.07
66	2.15	0.32	16.22	0.75	19.74	A	A	A	0.92
71	1.85	0.16	0.00	0.00	15.59	A	A	A	0.00
72	2.25	0.3	21.62	1.04	18.60	A	A	A	1.23
80	3.22	0.28	74.05	3.71	15.62	N	N	N	4.20
81	2.023	0.485	9.35	0.32	27.26	A	A	A	0.53
84	1.66	0.25	-10.27	-0.55	19.88	A	A	A	0.58
94	1.81	0.2	-2.16	-0.13	17.04	A	A	A	0.12
110	2.33	0.61	25.95	0.73	29.22	A	A	A	1.47
118	2.09	0.44	12.97	0.48	24.73	A	A	A	0.74
122	1.87	0.16	1.08	0.07	15.54	A	A	A	0.06
140	1.8	0.5	-2.70	-0.09	30.66	A	A	A	0.15
144	1.7	0.4	-8.11	-0.32	26.87	A	A	A	0.46
147	2.09	0.35	12.97	0.57	21.18	A	A	A	0.74
153	1.9	0.6	2.70	0.08	34.14	A	A	A	0.15
159	1.88	0.2	1.62	0.10	16.78	A	A	A	0.09

TABLE 26. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
162	2.6	0.6	40.54	1.16	26.47	A	A	A	2.30
163	2.44	0.67	31.89	0.83	30.37	A	A	A	1.81
168	1.8	0.3	-2.70	-0.13	21.12	A	A	A	0.15
170	1.9	0.2	2.70	0.16	16.71	A	A	A	0.15
173	2.09	0.57	12.97	0.39	30.20	A	A	A	0.74
174	2.4	0.6	29.73	0.85	28.17	A	A	A	1.69
177	1.75	0.36	-5.41	-0.23	24.32	A	A	A	0.31
180	2.0	0.3	8.11	0.39	19.83	A	A	A	0.46
181	2.00	0.41	8.11	0.32	24.26	A	A	A	0.46
190	5.2	0.4	181.08	7.18	15.08	N	N	N	10.28
196	1.7	0.3	-8.11	-0.39	21.90	A	A	A	0.46
204	2.104	0.466	13.73	0.48	25.67	A	A	A	0.78
206	1.84	0.17	-0.54	-0.03	15.93	A	A	A	0.03
207	1.67	0.15	-9.73	-0.64	15.78	A	A	A	0.55
213	1.8	0.4	-2.70	-0.11	25.73	A	A	A	0.15
216	1.6	0.3	-13.51	-0.65	22.80	A	A	A	0.77
222	1.44	0.38	-22.16	-0.91	29.41	A	A	A	1.26
224	2.59	0.94	40.00	0.76	38.54	A	A	A	2.27
228	1.8	0.2	-2.70	-0.16	17.08	A	A	A	0.15
236	2.647	0.375	43.08	1.79	19.21	A	A	A	2.45
243	2.618	0.68	41.51	1.07	29.03	A	A	A	2.36
246	1.83	0.165	-1.08	-0.07	15.80	A	A	A	0.06
249	2.1	0.6	13.51	0.39	31.38	A	A	A	0.77
252	1.9	0.5	2.70	0.09	29.34	A	A	A	0.15

## Reported Results for the Nd-147 Determination in Sample 2

TABLE 27. Target values

Parameter	Value
Massic Activity, [Bq/kg]	15
Uncertainty, [Bq/kg]	0.5
Maximum Acceptable Relative Bias, [%]	30

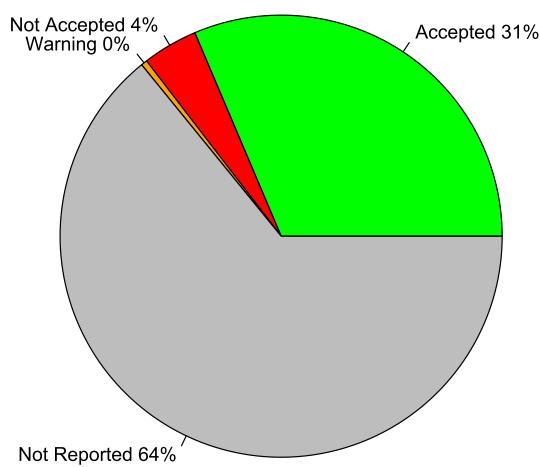


FIGURE 27. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

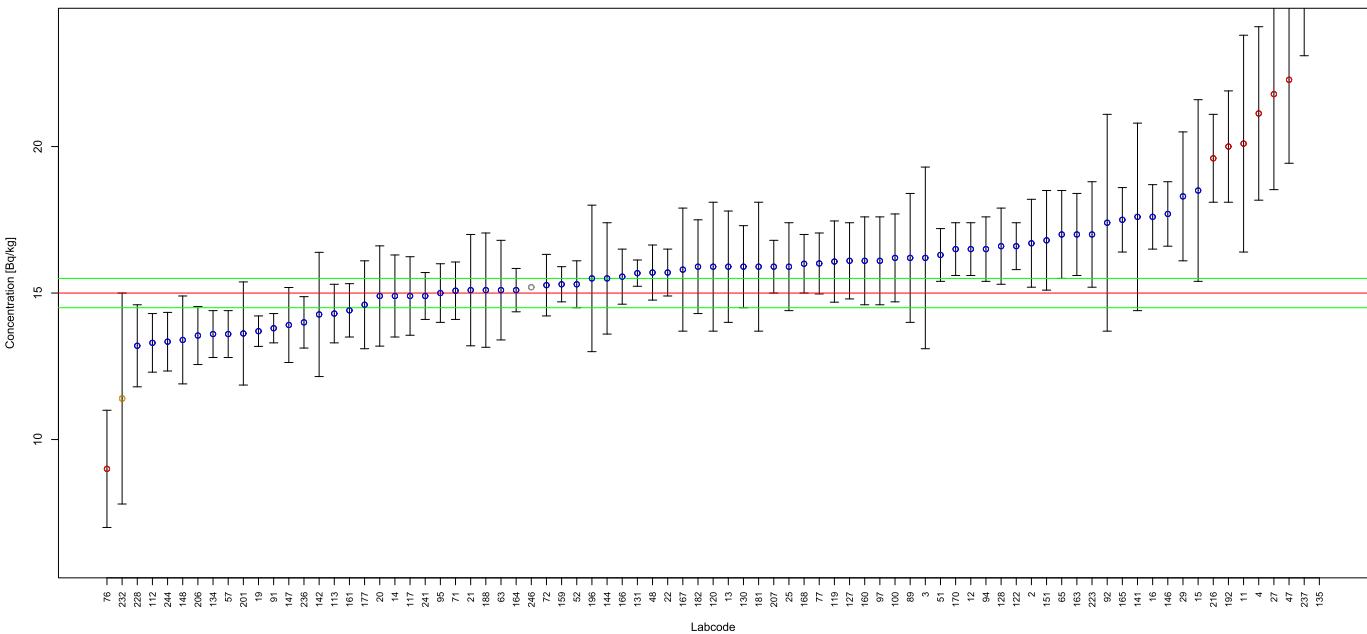


FIGURE 28. Reported results and evaluation parameters for Nd-147. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 28. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
2	16.7	1.5	11.33	1.08	9.58	A	A	A	1.15
3	16.2	3.1	8.00	0.38	19.42	A	A	A	0.81
4	21.13	2.96	40.87	2.04	14.40	N	N	N	4.15
11	20.1	3.7	34.00	1.37	18.71	N	A	N	3.45
12	16.5	0.9	10.00	1.46	6.39	A	A	A	1.02
13	15.9	1.9	6.00	0.46	12.41	A	A	A	0.61
14	14.9	1.4	-0.67	-0.07	9.97	A	A	A	0.07
15	18.5	3.1	23.33	1.11	17.09	A	A	A	2.37
16	17.6	1.1	17.33	2.15	7.08	A	A	A	1.76
19	13.7	0.52	-8.67	-1.80	5.05	A	A	A	0.88
20	14.9	1.711	-0.67	-0.06	11.96	A	A	A	0.07
21	15.1	1.9	0.67	0.05	13.02	A	A	A	0.07
22	15.7	0.8	4.67	0.74	6.09	A	A	A	0.47
25	15.9	1.5	6.00	0.57	10.01	A	A	A	0.61
27	21.79	3.26	45.27	2.06	15.33	N	N	N	4.60
29	18.3	2.2	22.00	1.46	12.48	A	A	A	2.23
47	22.28	2.85	48.53	2.52	13.22	N	N	N	4.93
48	15.7	0.94	4.67	0.66	6.85	A	A	A	0.47
51	16.3	0.9	8.67	1.26	6.45	A	A	A	0.88
52	15.3	0.8	2.00	0.32	6.20	A	A	A	0.20
57	13.6	0.8	-9.33	-1.48	6.76	A	A	A	0.95
63	15.1	1.7	0.67	0.06	11.74	A	A	A	0.07
65	17.0	1.5	13.33	1.26	9.43	A	A	A	1.35
71	15.08	0.98	0.53	0.07	7.30	A	A	A	0.05
72	15.27	1.05	1.80	0.23	7.64	A	A	A	0.18
76	9	2	-40.00	-2.91	22.47	N	A	N	4.06
77	16.01	1.04	6.73	0.88	7.30	A	A	A	0.68
89	16.2	2.2	8.00	0.53	13.98	A	A	A	0.81
91	13.8	0.5	-8.00	-1.70	4.92	A	A	A	0.81
92	17.4	3.7	16.00	0.64	21.52	A	A	A	1.62

TABLE 28. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
94	16.5	1.1	10.00	1.24	7.45	A	A	A	1.02
95	15	1	0.00	0.00	7.45	A	A	A	0.00
97	16.1	1.5	7.33	0.70	9.90	A	A	A	0.74
100	16.2	1.5	8.00	0.76	9.84	A	A	A	0.81
112	13.3	1.0	-11.33	-1.52	8.22	A	A	A	1.15
113	14.3	1.0	-4.67	-0.63	7.75	A	A	A	0.47
117	14.9	1.34	-0.67	-0.07	9.59	A	A	A	0.07
119	16.075	1.386	7.17	0.73	9.24	A	A	A	0.73
120	15.9	2.2	6.00	0.40	14.23	A	A	A	0.61
122	16.6	0.8	10.67	1.70	5.86	A	A	A	1.08
127	16.1	1.3	7.33	0.79	8.74	A	A	A	0.74
128	16.6	1.3	10.67	1.15	8.51	A	A	A	1.08
130	15.9	1.4	6.00	0.61	9.41	A	A	A	0.61
131	15.68	0.448	4.53	1.01	4.39	A	A	A	0.46
134	13.6	0.8	-9.33	-1.48	6.76	A	A	A	0.95
135	77000	10000	513233.33	7.70	13.41	N	N	N	52107.13
141	17.6	3.2	17.33	0.80	18.48	A	A	A	1.76
142	14.27	2.12	-4.87	-0.34	15.23	A	A	A	0.49
144	15.5	1.9	3.33	0.25	12.70	A	A	A	0.34
146	17.7	1.1	18.00	2.23	7.05	A	A	A	1.83
147	13.91	1.28	-7.27	-0.79	9.79	A	A	A	0.74
148	13.4	1.5	-10.67	-1.01	11.68	A	A	A	1.08
151	16.8	1.7	12.00	1.02	10.65	A	A	A	1.22
159	15.3	0.6	2.00	0.38	5.15	A	A	A	0.20
160	16.1	1.5	7.33	0.70	9.90	A	A	A	0.74
161	14.41	0.91	-3.93	-0.57	7.14	A	A	A	0.40
163	17.0	1.4	13.33	1.35	8.88	A	A	A	1.35
164	15.1	0.74	0.67	0.11	5.93	A	A	A	0.07
165	17.5	1.1	16.67	2.07	7.11	A	A	A	1.69
166	15.56	0.94	3.73	0.53	6.90	A	A	A	0.38
167	15.8	2.1	5.33	0.37	13.70	A	A	A	0.54
168	16.0	1.0	6.67	0.89	7.08	A	A	A	0.68
170	16.5	0.9	10.00	1.46	6.39	A	A	A	1.02
177	14.6	1.5	-2.67	-0.25	10.80	A	A	A	0.27
181	15.9	2.2	6.00	0.40	14.23	A	A	A	0.61
182	15.9	1.6	6.00	0.54	10.60	A	A	A	0.61
188	15.10	1.95	0.67	0.05	13.34	A	A	A	0.07
192	20.0	1.9	33.33	2.54	10.07	N	N	N	3.38
196	15.5	2.5	3.33	0.20	16.47	A	A	A	0.34
201	13.62	1.76	-9.20	-0.75	13.35	A	A	A	0.93
206	13.55	0.99	-9.67	-1.31	8.03	A	A	A	0.98
207	15.9	0.9	6.00	0.87	6.57	A	A	A	0.61
216	19.6	1.5	30.67	2.91	8.35	N	N	N	3.11
223	17.0	1.8	13.33	1.07	11.10	A	A	A	1.35
228	13.2	1.4	-12.00	-1.21	11.12	A	A	A	1.22
232	11.4	3.6	-24.00	-0.99	31.75	A	N	W	2.44
236	14.000	0.877	-6.67	-0.99	7.10	A	A	A	0.68
237	25.1	2.0	67.33	4.90	8.64	N	N	N	6.84
241	14.9	0.8	-0.67	-0.11	6.32	A	A	A	0.07
244	13.34	1.00	-11.07	-1.48	8.20	A	A	A	1.12
246	15.2		1.33			A			0.14

## Reported Results for the Np-239 Determination in Sample 2

TABLE 29. Target values

Parameter	Value
Massic Activity, [Bq/kg]	3100
Uncertainty, [Bq/kg]	70
Maximum Acceptable Relative Bias, [%]	20

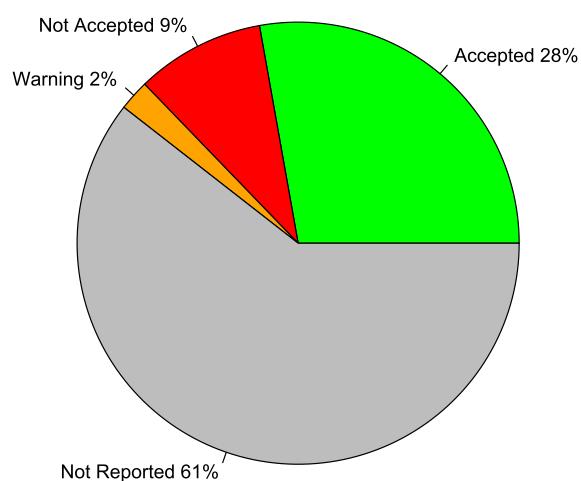


FIGURE 29. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

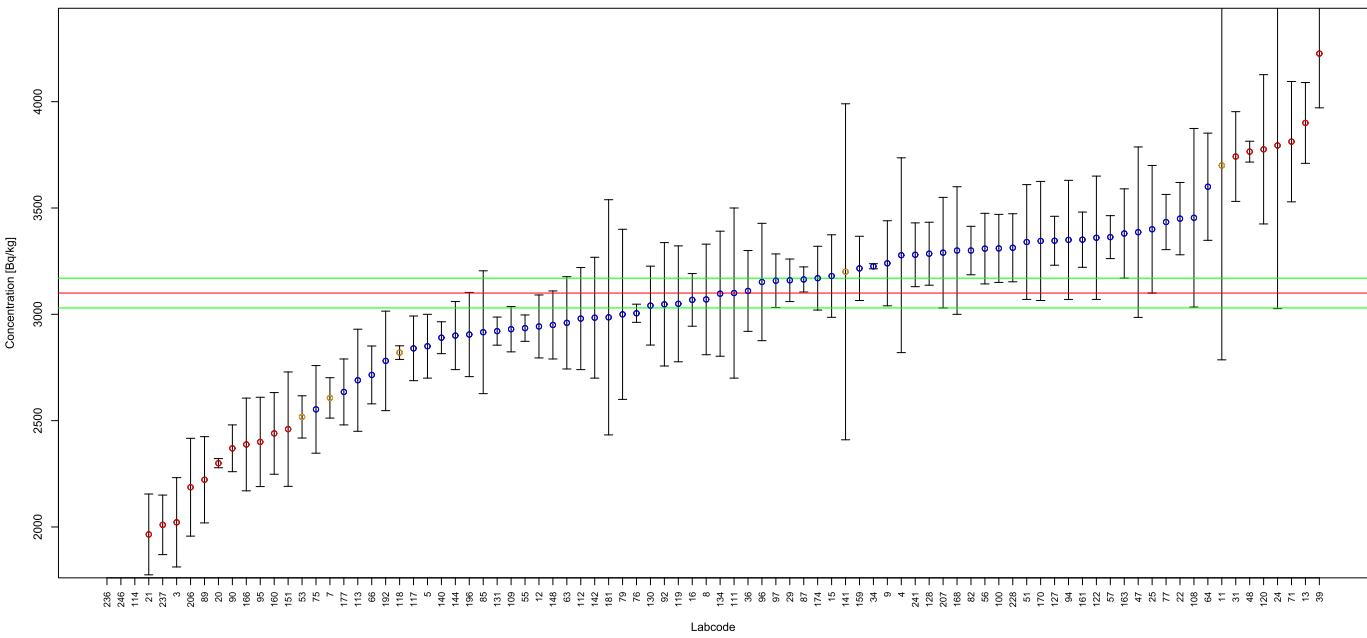


FIGURE 30. Reported results and evaluation parameters for Np-239. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 30. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
3	2022	210	-34.77	-4.87	10.63	N	N	N	2.72
4	3278	458	5.74	0.38	14.15	A	A	A	0.45
5	2850	150	-8.06	-1.51	5.73	A	A	A	0.63
7	2607	95	-15.90	-4.18	4.29	A	N	W	1.24
8	3070	260	-0.97	-0.11	8.76	A	A	A	0.08
9	3240	200	4.52	0.66	6.57	A	A	A	0.35
11	3700	914	19.35	0.65	24.81	A	N	W	1.51
12	2943	148	-5.06	-0.96	5.51	A	A	A	0.40
13	3900	190	25.81	3.95	5.37	N	N	N	2.02
15	3180	194	2.58	0.39	6.51	A	A	A	0.20
16	3067.9	123.8	-1.04	-0.23	4.62	A	A	A	0.08
20	2300	21.505	-25.81	-10.92	2.44	N	N	N	2.02
21	1965	190	-36.61	-5.61	9.93	N	N	N	2.87
22	3450	170	11.29	1.90	5.42	A	A	A	0.88
24	3794.0	767.3	22.39	0.90	20.35	N	N	N	1.75
25	3400	300	9.68	0.97	9.11	A	A	A	0.76
29	3160	100	1.94	0.49	3.89	A	A	A	0.15
31	3742	211	20.71	2.89	6.07	N	N	N	1.62
34	3226	12	4.06	1.77	2.29	A	A	A	0.32
36	3110	190	0.32	0.05	6.51	A	A	A	0.03
39	4226	255	36.32	4.26	6.44	N	N	N	2.84
47	3386.22	400.80	9.23	0.70	12.05	A	A	A	0.72
48	3765	49.0	21.45	7.78	2.61	N	N	N	1.68
51	3340	270	7.74	0.86	8.39	A	A	A	0.61
53	2517.60	99.31	-18.79	-4.79	4.55	A	N	W	1.47
55	2935	62	-5.32	-1.76	3.09	A	A	A	0.42
56	3309	166	6.74	1.16	5.50	A	A	A	0.53
57	3363	101	8.48	2.14	3.76	A	A	A	0.66
63	2960	217	-4.52	-0.61	7.67	A	A	A	0.35
64	3600	252	16.13	1.91	7.36	A	A	A	1.26

TABLE 30. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
66	2715	136	-12.42	-2.52	5.49	A	A	A	0.97
71	3812	283	22.97	2.44	7.76	N	N	N	1.80
75	2553.0	206	-17.65	-2.51	8.38	A	A	A	1.38
76	3005	42.7	-3.06	-1.16	2.67	A	A	A	0.24
77	3434	129.8	10.77	2.26	4.40	A	A	A	0.84
79	3000	400	-3.23	-0.25	13.52	A	A	A	0.25
82	3300	114	6.45	1.50	4.13	A	A	A	0.50
85	2915.83	288.84	-5.94	-0.62	10.16	A	A	A	0.46
87	3164.0	59.0	2.06	0.70	2.93	A	A	A	0.16
89	2222.0	202.8	-28.32	-4.09	9.40	N	N	N	2.22
90	2370	110	-23.55	-5.60	5.16	N	N	N	1.84
92	3047.1	290.1	-1.71	-0.18	9.78	A	A	A	0.13
94	3350	280	8.06	0.87	8.66	A	A	A	0.63
95	2400	210	-22.58	-3.16	9.04	N	A	N	1.77
96	3152	276	1.68	0.18	9.04	A	A	A	0.13
97	3158	126	1.87	0.40	4.58	A	A	A	0.15
100	3310	160	6.77	1.20	5.34	A	A	A	0.53
108	3454	420	11.42	0.83	12.37	A	A	A	0.89
109	2930	106.5	-5.48	-1.33	4.28	A	A	A	0.43
111	3100	400	0.00	0.00	13.10	A	A	A	0.00
112	2980	240	-3.87	-0.48	8.36	A	A	A	0.30
113	2690	240	-13.23	-1.64	9.20	A	A	A	1.04
114	684		-77.94			N		N	6.10
117	2840	152	-8.39	-1.55	5.81	A	A	A	0.66
118	2820	32	-9.03	-3.64	2.53	A	N	W	0.71
119	3049.33	272.57	-1.63	-0.18	9.22	A	A	A	0.13
120	3776	351	21.81	1.89	9.57	N	A	N	1.71
122	3360	290	8.39	0.87	8.92	A	A	A	0.66
127	3346	115	7.94	1.83	4.11	A	A	A	0.62
128	3285	148	5.97	1.13	5.04	A	A	A	0.47
130	3041.0	185.5	-1.90	-0.30	6.50	A	A	A	0.15
131	2921	66.0	-5.77	-1.86	3.19	A	A	A	0.45
134	3097	294	-0.10	-0.01	9.76	A	A	A	0.01
140	2890	75	-6.77	-2.05	3.44	A	A	A	0.53
141	3200	790	3.23	0.13	24.79	A	N	W	0.25
142	2984.12	284.14	-3.74	-0.40	9.79	A	A	A	0.29
144	2900	160	-6.45	-1.15	5.96	A	A	A	0.50
148	2950	160	-4.84	-0.86	5.88	A	A	A	0.38
151	2460	269	-20.65	-2.30	11.17	N	A	N	1.62
159	3216	151	3.74	0.70	5.21	A	A	A	0.29
160	2440	192	-21.29	-3.23	8.19	N	N	N	1.67
161	3351.0	129.8	8.10	1.70	4.48	A	A	A	0.63
163	3380	210	9.03	1.26	6.61	A	A	A	0.71
166	2388	218	-22.97	-3.11	9.40	N	A	N	1.80
168	3300	300	6.45	0.65	9.37	A	A	A	0.50
170	3345	280	7.90	0.85	8.67	A	A	A	0.62
174	3170	150	2.26	0.42	5.24	A	A	A	0.18
177	2635	155	-15.00	-2.73	6.30	A	A	A	1.17
181	2986	553	-3.68	-0.20	18.66	A	A	A	0.29
192	2781	234	-10.29	-1.31	8.71	A	A	A	0.81
196	2905	198	-6.29	-0.93	7.18	A	A	A	0.49
206	2187	230	-29.45	-3.80	10.76	N	N	N	2.30
207	3290	260	6.13	0.71	8.22	A	A	A	0.48
228	3313	160	6.87	1.22	5.33	A	A	A	0.54

TABLE 30. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
236	5.934	0.194	-99.81	-44.20	3.97	N	N	N	7.81
237	2010	140	-35.16	-6.96	7.32	N	N	N	2.75
241	3280	150	5.81	1.09	5.10	A	A	A	0.45
246	148	9.62	-95.23	-41.78	6.88	N	N	N	7.45

## Reported Results for I-131 Determination in Sample 2 (Intercomparison, no evaluation)

TABLE 31. Target values

Parameter	Value
Robust Mean, Bq/kg	1
Robust SD, Bq/kg	0.3

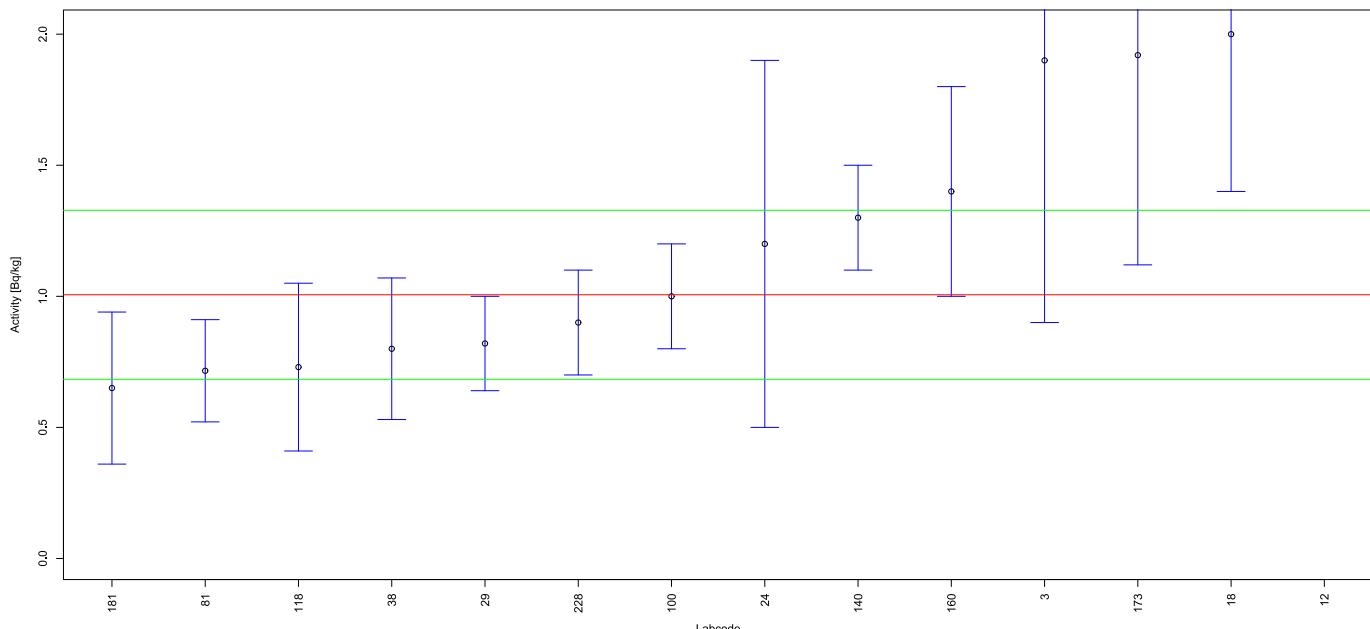


FIGURE 31. Reported results and evaluation parameters for I-131 in Sample 2.

## Reported Results for La-140 Determination in Sample 2 (Intercomparison, no evaluation)

TABLE 32. Target values

Parameter	Value
Target Value, Bq/kg	41.5
Target Unc, Bq/kg	4.1

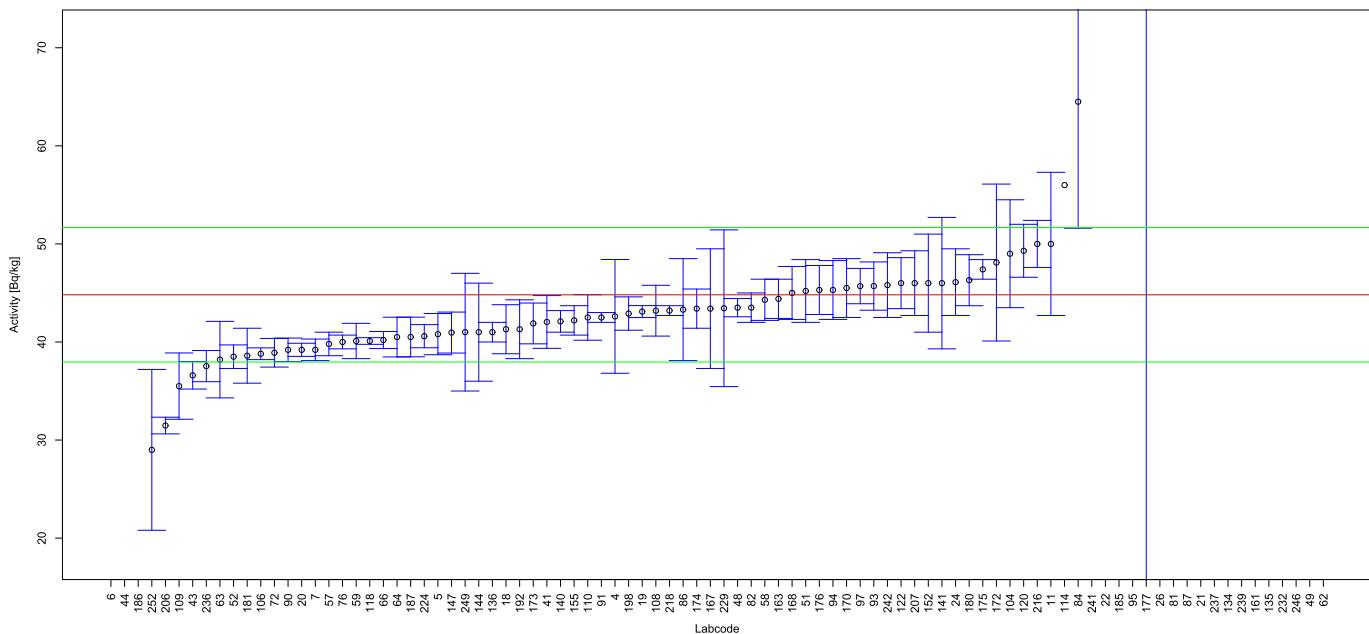


FIGURE 32. Reported results and evaluation parameters for La-140 in Sample 2.

## Reported Results for Nb-95 Determination in Sample 2 (Intercomparison, no evaluation)

TABLE 33. Target values

Parameter	Value
Target Value, Bq/kg	0.37
Target Unc, Bq/kg	3.3

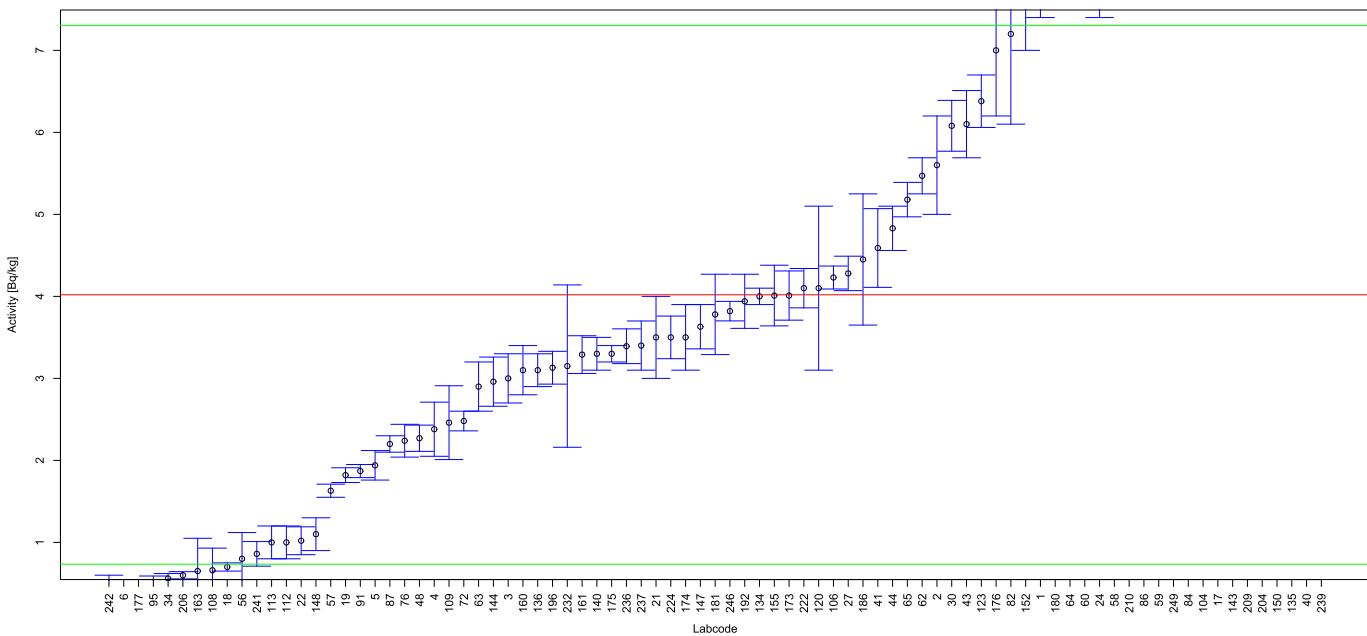


FIGURE 33. Reported results and evaluation parameters for Nb-95 in Sample 2.

## **Reported Results for the Sr-90 Determination in Sample 4**

TABLE 34. Target values

Parameter	Value
Massic Activity, [Bq/kg]	99.9
Uncertainty, [Bq/kg]	5
Maximum Acceptable Relative Bias, [%]	15

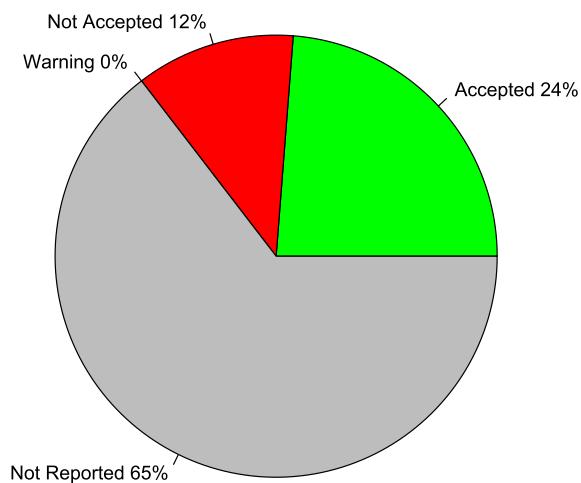


FIGURE 34. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

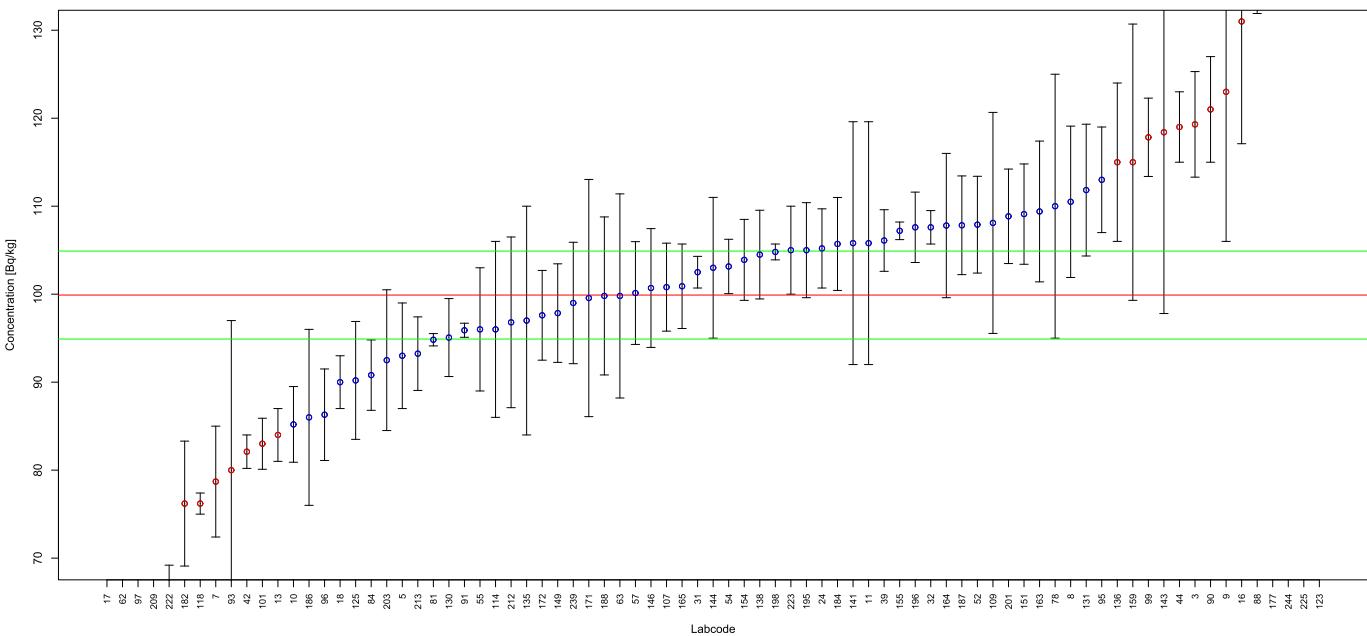


FIGURE 35. Reported results and evaluation parameters for Sr-90. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 35. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
3	119.3	6.0	19.42	2.48	7.10	N	N	N	1.56
5	93	6	-6.91	-0.88	8.17	A	A	A	0.56
7	78.7	6.3	-21.22	-2.64	9.44	N	A	N	1.71
8	110.5	8.6	10.61	1.07	9.25	A	A	A	0.85
9	123	17	23.12	1.30	14.70	N	A	N	1.86
10	85.2	4.3	-14.71	-2.23	7.11	A	A	A	1.18
11	105.8	13.8	5.91	0.40	13.97	A	A	A	0.48
13	84	3	-15.92	-2.73	6.15	N	N	N	1.28
16	131.0	13.9	31.13	2.11	11.73	N	N	N	2.51
17	3.92	0.47	-96.08	-19.11	12.99	N	N	N	7.73
18	90	3	-9.91	-1.70	6.01	A	A	A	0.80
24	105.2	4.5	5.31	0.79	6.58	A	A	A	0.43
31	102.5	1.8	2.60	0.49	5.30	A	A	A	0.21
32	107.6	1.9	7.71	1.44	5.31	A	A	A	0.62
39	106.1	3.5	6.21	1.02	5.99	A	A	A	0.50
42	82.1	1.9	-17.82	-3.33	5.51	N	N	N	1.43
44	119	4	19.12	2.98	6.03	N	N	N	1.54
52	107.9	5.5	8.01	1.08	7.14	A	A	A	0.64
54	103.15	3.09	3.25	0.55	5.83	A	A	A	0.26
55	96	7	-3.90	-0.45	8.84	A	A	A	0.31
57	100.13	5.84	0.23	0.03	7.69	A	A	A	0.02
62	12.81	0.70	-87.18	-17.25	7.41	N	N	N	7.02
63	99.8	11.6	-0.10	-0.01	12.66	A	A	A	0.01
78	110.0	15.0	10.11	0.64	14.53	A	A	A	0.81
81	94.82	0.70	-5.09	-1.01	5.06	A	A	A	0.41
84	90.8	4.0	-9.11	-1.42	6.67	A	A	A	0.73
88	146.4	14.5	46.55	3.03	11.10	N	N	N	3.75
90	121	6	21.12	2.70	7.05	N	N	N	1.70
91	95.9	0.8	-4.00	-0.79	5.07	A	A	A	0.32
93	80	17	-19.92	-1.12	21.83	N	N	N	1.60

TABLE 35. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
95	113	6	13.11	1.68	7.30	A	A	A	1.06
96	86.3	5.2	-13.61	-1.89	7.83	A	A	A	1.10
97	56.0	5.0	-43.94	-6.21	10.24	N	N	N	3.54
99	117.83	4.45	17.95	2.68	6.27	N	N	N	1.44
101	83	2.9	-16.92	-2.92	6.10	N	N	N	1.36
107	100.8	5.0	0.90	0.13	7.05	A	A	A	0.07
109	108.1	12.56	8.21	0.61	12.65	A	A	A	0.66
114	96	10	-3.90	-0.35	11.56	A	A	A	0.31
118	76.2	1.2	-23.72	-4.61	5.25	N	N	N	1.91
123	680.0	26.0	580.68	21.91	6.30	N	N	N	46.74
125	90.2	6.7	-9.71	-1.16	8.96	A	A	A	0.78
130	95.07	4.43	-4.83	-0.72	6.84	A	A	A	0.39
131	111.83	7.49	11.94	1.32	8.36	A	A	A	0.96
135	97.0	13.0	-2.90	-0.21	14.31	A	A	A	0.23
136	115	9	15.12	1.47	9.29	N	A	N	1.22
138	104.5	5.04	4.60	0.65	6.95	A	A	A	0.37
139	98.6	4.19	-1.30	-0.20	6.57	A	A	A	0.10
141	105.8	13.8	5.91	0.40	13.97	A	A	A	0.48
143	118.4	20.6	18.52	0.87	18.10	N	N	N	1.49
144	103	8	3.10	0.33	9.24	A	A	A	0.25
146	100.7	6.75	0.80	0.10	8.37	A	A	A	0.06
149	97.85	5.60	-2.05	-0.27	7.60	A	A	A	0.17
151	109.1	5.7	9.21	1.21	7.24	A	A	A	0.74
154	103.9	4.6	4.00	0.59	6.68	A	A	A	0.32
155	107.2	1	7.31	1.43	5.09	A	A	A	0.59
159	115	15.7	15.12	0.92	14.54	N	A	N	1.22
163	109.4	8.0	9.51	1.01	8.86	A	A	A	0.77
164	107.8	8.2	7.91	0.82	9.11	A	A	A	0.64
165	100.9	4.8	1.00	0.14	6.91	A	A	A	0.08
171	99.56	13.48	-0.34	-0.02	14.44	A	A	A	0.03
172	97.6	5.1	-2.30	-0.32	7.24	A	A	A	0.19
177	153	14	53.15	3.57	10.43	N	N	N	4.28
182	76.2	7.1	-23.72	-2.73	10.58	N	A	N	1.91
184	105.71	5.28	5.82	0.80	7.07	A	A	A	0.47
186	86	10	-13.91	-1.24	12.66	A	A	A	1.12
187	107.83	5.61	7.94	1.06	7.22	A	A	A	0.64
188	99.80	8.98	-0.10	-0.01	10.30	A	A	A	0.01
195	105	5.4	5.11	0.69	7.18	A	A	A	0.41
196	107.6	4.0	7.71	1.20	6.23	A	A	A	0.62
198	104.8	0.9	4.90	0.96	5.08	A	A	A	0.39
201	108.85	5.37	8.96	1.22	7.03	A	A	A	0.72
203	92.5	8.0	-7.41	-0.78	9.99	A	A	A	0.60
209	58.85	2.20	-41.09	-7.51	6.25	N	N	N	3.31
212	96.8	9.7	-3.10	-0.28	11.20	A	A	A	0.25
213	93.24	4.18	-6.67	-1.02	6.72	A	A	A	0.54
222	66.3	2.9	-33.63	-5.81	6.65	N	N	N	2.71
223	105	5	5.11	0.72	6.91	A	A	A	0.41
225	468.6	30.8	369.07	11.82	8.26	N	N	N	29.71
239	99	6.9	-0.90	-0.11	8.58	A	A	A	0.07
244	282.3	21.9	182.58	8.12	9.23	N	N	N	14.70

## **Reported Results for the Ba-133 Determination in Sample 4**

TABLE 36. Target values

Parameter	Value
Massic Activity, [Bq/kg]	137.4
Uncertainty, [Bq/kg]	5
Maximum Acceptable Relative Bias, [%]	15

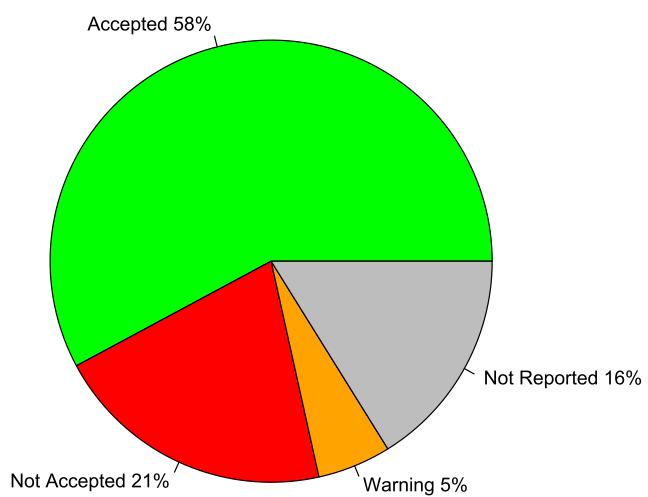


FIGURE 36. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

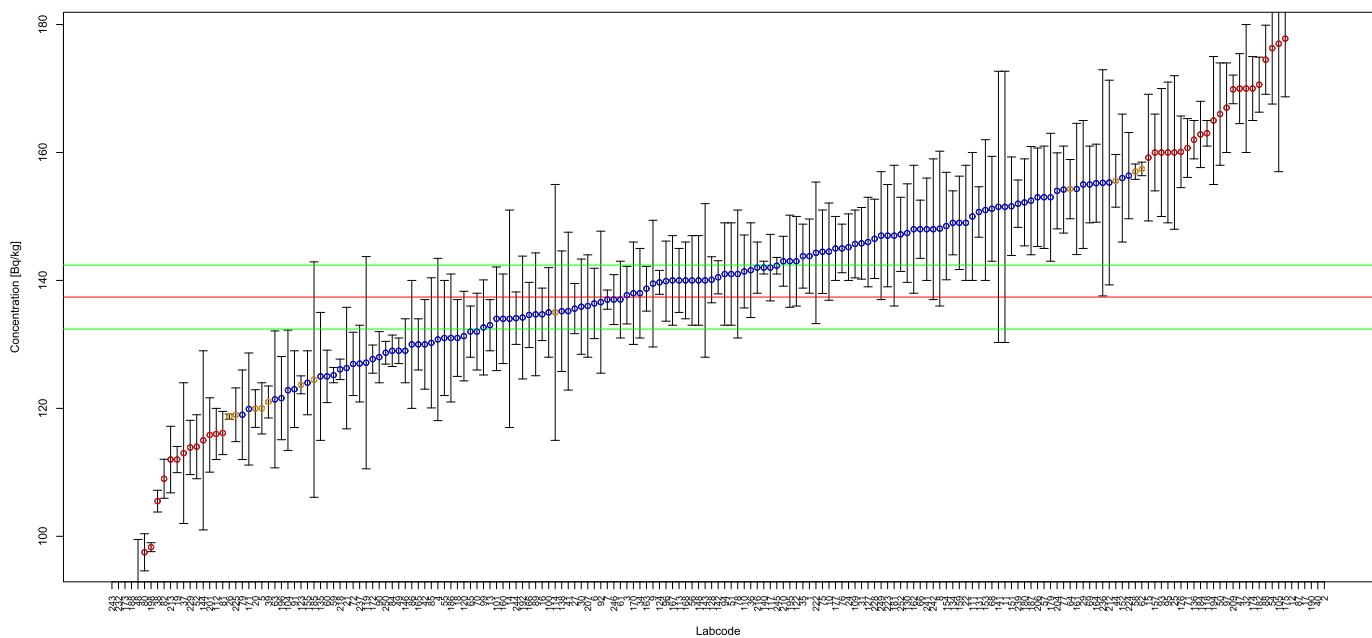


FIGURE 37. Reported results and evaluation parameters for Ba-133. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 37. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	143.8	5.8	4.66	0.84	5.43	A	A	A	0.38
2	1072.5	53.6	680.57	17.37	6.18	N	N	N	55.54
3	137.7	4.5	0.22	0.04	4.89	A	A	A	0.02
4	130.77	12.68	-4.83	-0.49	10.36	A	A	A	0.39
5	120	4	-12.66	-2.72	4.93	A	N	W	1.03
6	136.40	5.50	-0.73	-0.13	5.43	A	A	A	0.06
7	137	1.5	-0.29	-0.08	3.80	A	A	A	0.02
8	148.1	12.1	7.79	0.82	8.94	A	A	A	0.64
9	139.5	9.9	1.53	0.19	7.98	A	A	A	0.12
10	144.5	7.6	5.17	0.78	6.40	A	A	A	0.42
11	151.5	21.2	10.26	0.65	14.46	A	A	A	0.84
12	192	9	39.74	5.30	5.93	N	N	N	3.24
13	133.0	4.0	-3.20	-0.69	4.72	A	A	A	0.26
14	134	17	-2.47	-0.19	13.20	A	A	A	0.20
15	159.2	9.9	15.87	1.97	7.21	N	A	N	1.29
16	134.7	4.1	-1.97	-0.42	4.74	A	A	A	0.16
17	207.3	19.3	50.87	3.51	10.00	N	N	N	4.15
18	131	6	-4.66	-0.82	5.85	A	A	A	0.38
19	112	2.05	-18.49	-4.70	4.07	N	N	N	1.51
20	119.97	2.944	-12.69	-3.00	4.39	A	N	W	1.04
21	126.3	9.5	-8.08	-1.03	8.36	A	A	A	0.66
22	149	9	8.44	1.13	7.05	A	A	A	0.69
24	145.2	5.2	5.68	1.08	5.11	A	A	A	0.46
25	160	12	16.45	1.74	8.34	N	A	N	1.34
26	118.7	0.4	-13.61	-3.73	3.65	A	N	W	1.11
27	135.60	3.92	-1.31	-0.28	4.65	A	A	A	0.11
29	155	10	12.81	1.57	7.41	A	A	A	1.05
30	135.9	7.44	-1.09	-0.17	6.57	A	A	A	0.09
31	145.8	5.6	6.11	1.12	5.29	A	A	A	0.50
32	170	10	23.73	2.92	6.92	N	N	N	1.94

TABLE 37. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
34	138	7	0.44	0.07	6.24	A	A	A	0.04
35	143.8	5	4.66	0.91	5.03	A	A	A	0.38
36	141.6	7.4	3.06	0.47	6.37	A	A	A	0.25
37	113	11	-17.76	-2.02	10.39	N	A	N	1.45
38	105.5	1.7	-23.22	-6.04	3.98	N	N	N	1.89
39	121	2.5	-11.94	-2.93	4.18	A	N	W	0.97
40	502	16	265.36	21.75	4.84	N	N	N	21.66
41	135.2	12.34	-1.60	-0.17	9.83	A	A	A	0.13
42	130	7	-5.39	-0.86	6.50	A	A	A	0.44
44	155.57	4.12	13.22	2.80	4.50	A	N	W	1.08
47	169.98	5.47	23.71	4.40	4.86	N	N	N	1.94
48	90.2	9.31	-34.35	-4.47	10.94	N	N	N	2.80
49	129	2	-6.11	-1.56	3.96	A	A	A	0.50
50	166	8	20.82	3.03	6.04	N	N	N	1.70
51	141	8	2.62	0.38	6.74	A	A	A	0.21
52	114	5	-17.03	-3.31	5.70	N	N	N	1.39
54	176.31	8.74	28.32	3.86	6.15	N	N	N	2.31
55	131	9	-4.66	-0.62	7.77	A	A	A	0.38
56	140	7	1.89	0.30	6.18	A	A	A	0.15
57	153	8	11.35	1.65	6.37	A	A	A	0.93
58	157	1.2	14.26	3.81	3.72	A	N	W	1.16
59	125.2	1.2	-8.88	-2.37	3.76	A	A	A	0.72
60	125	4.1	-9.02	-1.92	4.90	A	A	A	0.74
61	137	6	-0.29	-0.05	5.69	A	A	A	0.02
62	157.43	1.06	14.58	3.92	3.70	A	N	W	1.19
63	121.4	10.7	-11.64	-1.35	9.54	A	A	A	0.95
64	154.27	4.63	12.28	2.48	4.72	A	N	W	1.00
65	132	4	-3.93	-0.84	4.74	A	A	A	0.32
66	148	4.55	7.71	1.57	4.76	A	A	A	0.63
68	151.2	8.2	10.04	1.44	6.53	A	A	A	0.82
69	155	6	12.81	2.25	5.31	A	A	A	1.05
70	132	6	-3.93	-0.69	5.82	A	A	A	0.32
71	160.7	4.6	16.96	3.43	4.63	N	N	N	1.38
72	126.95	4.95	-7.61	-1.49	5.33	A	A	A	0.62
75	144.48	6.53	5.15	0.86	5.80	A	A	A	0.42
76	145	3.8	5.53	1.21	4.48	A	A	A	0.45
77	154.2	6.8	12.23	1.99	5.72	A	A	A	1.00
78	141.0	10.0	2.62	0.32	7.97	A	A	A	0.21
79	119	7	-13.39	-2.14	6.92	A	A	A	1.09
80	97.5	2.9	-29.04	-6.90	4.70	N	N	N	2.37
81	116.15	3.38	-15.47	-3.52	4.66	N	N	N	1.26
82	109	3.05	-20.67	-4.85	4.59	N	N	N	1.69
84	129	2.46	-6.11	-1.51	4.11	A	A	A	0.50
85	130.24	10.17	-5.21	-0.63	8.61	A	A	A	0.43
86	130	10	-5.39	-0.66	8.51	A	A	A	0.44
87	196.2	7.5	42.79	6.52	5.28	N	N	N	3.49
88	174.5	5.4	27.00	5.04	4.78	N	N	N	2.20
89	134.7	9.6	-1.97	-0.25	8.00	A	A	A	0.16
90	128	4	-6.84	-1.47	4.80	A	A	A	0.56
91	123	6	-10.48	-1.84	6.09	A	A	A	0.86
92	136.6	11.1	-0.58	-0.07	8.90	A	A	A	0.05
93	160	10	16.45	2.02	7.23	N	A	N	1.34
94	141	8.0	2.62	0.38	6.74	A	A	A	0.21
95	160	11	16.45	1.87	7.78	N	A	N	1.34

TABLE 37. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
96	139.89	6.26	1.81	0.31	5.77	A	A	A	0.15
97	167	7	21.54	3.44	5.55	N	N	N	1.76
99	132.65	7.43	-3.46	-0.53	6.68	A	A	A	0.28
100	135	7	-1.75	-0.28	6.33	A	A	A	0.14
101	134	8.1	-2.47	-0.36	7.06	A	A	A	0.20
104	122.83	9.4	-10.60	-1.37	8.47	A	A	A	0.87
105	177	20	28.82	1.92	11.87	N	A	N	2.35
109	145.7	5.3	6.04	1.14	5.15	A	A	A	0.49
110	141.4	5.7	2.91	0.53	5.43	A	A	A	0.24
111	150	10	9.17	1.13	7.60	A	A	A	0.75
112	116	4	-15.57	-3.34	5.01	N	N	N	1.27
113	140	5	1.89	0.37	5.10	A	A	A	0.15
114	135	20	-1.75	-0.12	15.26	A	N	W	0.14
117	142	5.20	3.35	0.64	5.16	A	A	A	0.27
118	163	2	18.63	4.75	3.84	N	N	N	1.52
119	127.14	16.59	-7.47	-0.59	13.55	A	A	A	0.61
120	131.3	7.0	-4.44	-0.71	6.45	A	A	A	0.36
122	143	7	4.08	0.65	6.10	A	A	A	0.33
123	123.68	1.4	-9.99	-2.64	3.81	A	N	W	0.81
124	139.7	1.87	1.67	0.43	3.88	A	A	A	0.14
127	146	7	6.26	1.00	6.02	A	A	A	0.51
128	140.1	3.6	1.97	0.44	4.45	A	A	A	0.16
130	147.4	7.7	7.28	1.09	6.37	A	A	A	0.59
131	150.7	3.943	9.68	2.09	4.48	A	A	A	0.79
134	149	5	8.44	1.64	4.95	A	A	A	0.69
135	125	10	-9.02	-1.11	8.79	A	A	A	0.74
136	162	3	17.90	4.22	4.08	N	N	N	1.46
138	135.190	9.419	-1.61	-0.21	7.86	A	A	A	0.13
140	142	1.0	3.35	0.90	3.71	A	A	A	0.27
141	151.5	21.2	10.26	0.65	14.46	A	A	A	0.84
142	140.49	2.59	2.25	0.55	4.08	A	A	A	0.18
143	140	12	1.89	0.20	9.31	A	A	A	0.15
144	115	14	-16.30	-1.51	12.71	N	A	N	1.33
146	129	5.0	-6.11	-1.19	5.32	A	A	A	0.50
148	140	7	1.89	0.30	6.18	A	A	A	0.15
151	151.6	7.7	10.33	1.55	6.25	A	A	A	0.84
152	156	10	13.54	1.66	7.37	A	A	A	1.10
153	151	11	9.90	1.13	8.14	A	A	A	0.81
154	148.5	8.4	8.08	1.14	6.73	A	A	A	0.66
155	124	5	-9.75	-1.90	5.43	A	A	A	0.80
157	160	6.0	16.45	2.89	5.23	N	N	N	1.34
159	149	7.3	8.44	1.31	6.10	A	A	A	0.69
160	134.0	7.0	-2.47	-0.40	6.37	A	A	A	0.20
161	154.30	10.26	12.30	1.48	7.58	A	A	A	1.00
162	148	10	7.71	0.95	7.67	A	A	A	0.63
163	138.7	3.5	0.95	0.21	4.43	A	A	A	0.08
164	155.2	6.1	12.95	2.26	5.36	A	A	A	1.06
165	130	4	-5.39	-1.16	4.77	A	A	A	0.44
166	134.6	5.1	-2.04	-0.39	5.25	A	A	A	0.17
167	140	7	1.89	0.30	6.18	A	A	A	0.15
168	140	6	1.89	0.33	5.62	A	A	A	0.15
170	138	8	0.44	0.06	6.84	A	A	A	0.04
171	119.90	8.76	-12.74	-1.73	8.16	A	A	A	1.04
172	127.7	2.2	-7.06	-1.78	4.03	A	A	A	0.58

TABLE 37. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
173	56.17	2.65	-59.12	-14.35	5.96	N	N	N	4.82
174	170	5	23.73	4.61	4.68	N	N	N	1.94
175	177.8	9.1	29.40	3.89	6.28	N	N	N	2.40
176	160.1	5.6	16.52	3.02	5.05	N	N	N	1.35
177	145	5	5.53	1.07	5.01	A	A	A	0.45
179	153	10.0	11.35	1.40	7.48	A	A	A	0.93
180	152.2	6.8	10.77	1.75	5.76	A	A	A	0.88
181	147	11	6.99	0.79	8.32	A	A	A	0.57
182	170.6	4.3	24.16	5.03	4.43	N	N	N	1.97
184	162.82	5.18	18.50	3.53	4.83	N	N	N	1.51
185	124.5	18.4	-9.39	-0.68	15.22	A	N	W	0.77
186	131	10	-4.66	-0.57	8.46	A	A	A	0.38
187	152.47	8.46	10.97	1.53	6.64	A	A	A	0.90
188	77.50	7.40	-43.60	-6.71	10.22	N	N	N	3.56
190	216	13	57.21	5.64	7.03	N	N	N	4.67
192	134.2	9.6	-2.33	-0.30	8.03	A	A	A	0.19
194	165.0	10.0	20.09	2.47	7.07	N	N	N	1.64
195	143	7.2	4.08	0.64	6.21	A	A	A	0.33
196	121.6	6.5	-11.50	-1.93	6.47	A	A	A	0.94
198	98.3	0.7	-28.46	-7.74	3.71	N	N	N	2.32
201	115.84	5.81	-15.69	-2.81	6.20	N	A	N	1.28
202	148	5.0	7.71	1.50	4.97	A	A	A	0.63
204	154	5.94	12.08	2.14	5.30	A	A	A	0.99
206	153.0	7.7	11.35	1.70	6.21	A	A	A	0.93
207	136	8	-1.02	-0.15	6.92	A	A	A	0.08
209	169.86	2.24	23.62	5.92	3.87	N	N	N	1.93
210	143	3.9	4.08	0.88	4.55	A	A	A	0.33
212	155.3	16	13.03	1.07	10.93	A	A	A	1.06
213	112.0	5.2	-18.49	-3.52	5.90	N	N	N	1.51
216	142	4	3.35	0.72	4.60	A	A	A	0.27
218	126.1	1.6	-8.22	-2.15	3.85	A	A	A	0.67
222	144.31	11.07	5.03	0.57	8.49	A	A	A	0.41
223	147	8	6.99	1.02	6.55	A	A	A	0.57
224	156.38	6.74	13.81	2.26	5.64	A	A	A	1.13
225	119	4.2	-13.39	-2.82	5.07	A	N	W	1.09
228	146.5	6.2	6.62	1.14	5.58	A	A	A	0.54
229	113.89	4.24	-17.11	-3.59	5.21	N	N	N	1.40
232	13.8	4.3	-89.96	-18.74	31.37	N	N	N	7.34
236	155.256	17.676	13.00	0.97	11.95	A	A	A	1.06
237	127	6	-7.57	-1.33	5.96	A	A	A	0.62
239	152	3.7	10.63	2.35	4.38	A	A	A	0.87
241	148	8	7.71	1.12	6.52	A	A	A	0.63
242	148	11	7.71	0.88	8.28	A	A	A	0.63
243	10.18	0.383	-92.59	-25.37	5.23	N	N	N	7.56
244	134.1	4.1	-2.40	-0.51	4.75	A	A	A	0.20
245	142.3	1.3	3.57	0.95	3.75	A	A	A	0.29
246	137	3.9	-0.29	-0.06	4.62	A	A	A	0.02
249	147	10	6.99	0.86	7.71	A	A	A	0.57
250	128.70	1.78	-6.33	-1.64	3.89	A	A	A	0.52
252	147.2	5.8	7.13	1.28	5.36	A	A	A	0.58

## Reported Results for the Cs-137 Determination in Sample 4

TABLE 38. Target values

Parameter	Value
Massic Activity, [Bq/kg]	98.6
Uncertainty, [Bq/kg]	5
Maximum Acceptable Relative Bias, [%]	15

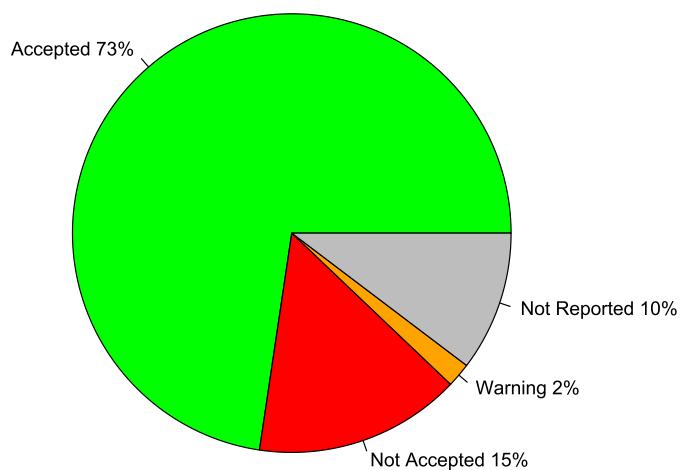


FIGURE 38. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

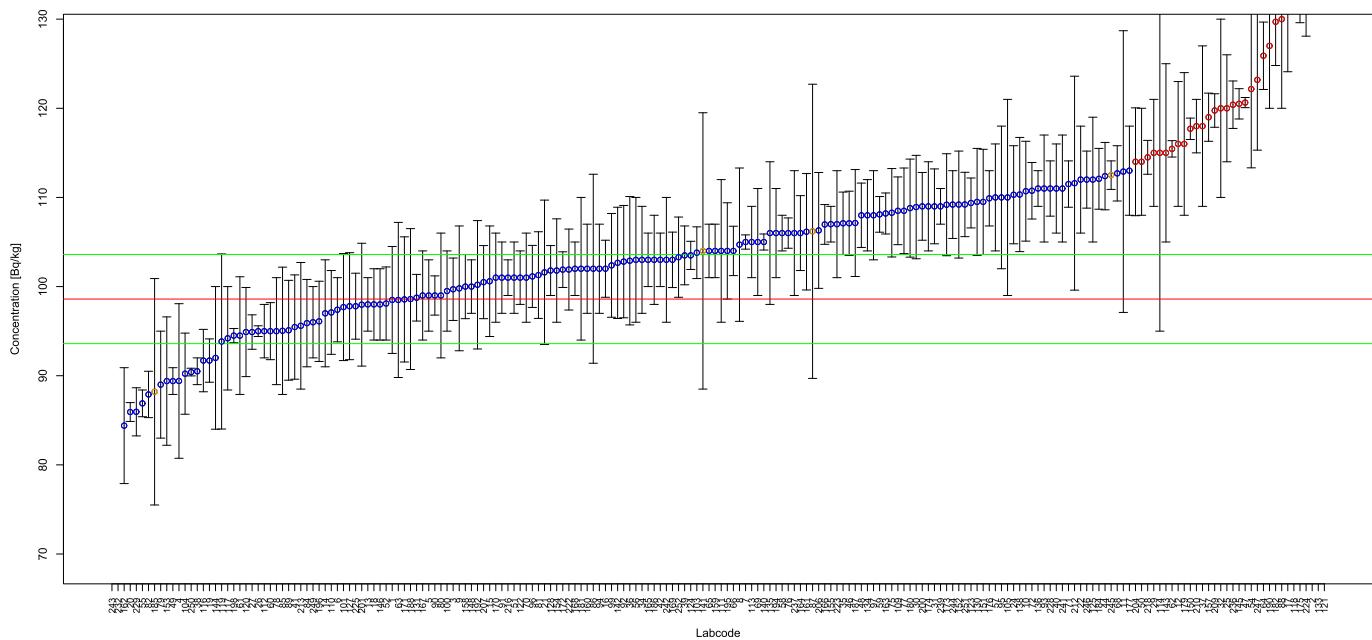


FIGURE 39. Reported results and evaluation parameters for Cs-137. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 39. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
1	98.5	6.0	-0.10	-0.01	7.93	A	A	A	0.01
2	167.0	6.2	69.37	8.59	6.28	N	N	N	7.72
3	99.7	3.5	1.12	0.18	6.17	A	A	A	0.12
4	89.41	8.67	-9.32	-0.92	10.94	A	A	A	1.04
5	99	4	0.41	0.06	6.48	A	A	A	0.05
6	97.40	3.60	-1.22	-0.19	6.28	A	A	A	0.14
7	105	0.8	6.49	1.26	5.13	A	A	A	0.72
8	104.7	8.6	6.19	0.61	9.65	A	A	A	0.69
9	99.8	7.0	1.22	0.14	8.66	A	A	A	0.14
10	110.7	5.6	12.27	1.61	7.16	A	A	A	1.37
11	112.9	15.8	14.50	0.86	14.89	A	A	A	1.61
12	116	7	17.65	2.02	7.88	N	A	N	1.96
13	98.0	3.0	-0.61	-0.10	5.92	A	A	A	0.07
14	97	6	-1.62	-0.20	8.00	A	A	A	0.18
15	100.6	6.2	2.03	0.25	7.98	A	A	A	0.23
16	102.0	3.2	3.45	0.57	5.96	A	A	A	0.38
17	132.0	7.9	33.87	3.57	7.84	N	N	N	3.77
18	98	4	-0.61	-0.09	6.51	A	A	A	0.07
19	91.7	2.43	-7.00	-1.24	5.72	A	A	A	0.78
20	85.929	1.057	-12.85	-2.48	5.22	A	A	A	1.43
21	101.6	8.1	3.04	0.32	9.45	A	A	A	0.34
22	112	6	13.59	1.72	7.38	A	A	A	1.51
24	110.3	5.5	11.87	1.57	7.11	A	A	A	1.32
25	120	6	21.70	2.74	7.12	N	N	N	2.42
26	95.0	0.6	-3.65	-0.71	5.11	A	A	A	0.41
27	94.90	1.93	-3.75	-0.69	5.46	A	A	A	0.42
29	115	6	16.63	2.10	7.28	N	A	N	1.85
30	108.92	5.8	10.47	1.35	7.35	A	A	A	1.16
31	109.0	4.2	10.55	1.59	6.37	A	A	A	1.17
32	120	10	21.70	1.91	9.75	N	A	N	2.42

TABLE 39. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
34	103	6	4.46	0.56	7.72	A	A	A	0.50
35	107.1	3.5	8.62	1.39	6.03	A	A	A	0.96
36	102.9	7.2	4.36	0.49	8.64	A	A	A	0.49
37	118	9	19.68	1.88	9.16	N	A	N	2.19
38	90.5	1.5	-8.22	-1.55	5.33	A	A	A	0.91
39	103.5	3.3	4.97	0.82	5.99	A	A	A	0.55
40	111	5	12.58	1.75	6.78	A	A	A	1.40
41	95.46	5.85	-3.18	-0.41	7.95	A	A	A	0.35
42	103	3	4.46	0.75	5.85	A	A	A	0.50
44	112.39	3.78	13.99	2.20	6.08	A	A	A	1.56
46	107.1	3.6	8.62	1.38	6.08	A	A	A	0.96
47	120.64	0.57	22.35	4.38	5.09	N	N	N	2.49
48	108	3.61	9.53	1.52	6.07	A	A	A	1.06
49	89.4	1.5	-9.33	-1.76	5.34	A	A	A	1.04
50	114	6	15.62	1.97	7.31	N	A	N	1.74
51	101	4	2.43	0.37	6.43	A	A	A	0.27
52	98.1	4.1	-0.51	-0.08	6.57	A	A	A	0.06
54	122.16	8.84	23.89	2.32	8.84	N	N	N	2.66
55	86.9	1.5	-11.87	-2.24	5.36	A	A	A	1.32
56	103	7	4.46	0.51	8.48	A	A	A	0.50
57	110	6	11.56	1.46	7.45	A	A	A	1.29
58	106.0	2.0	7.51	1.37	5.41	A	A	A	0.84
59	108.1	2.0	9.63	1.76	5.40	A	A	A	1.07
60	95	3.2	-3.65	-0.61	6.09	A	A	A	0.41
61	94.5	6.6	-4.16	-0.50	8.63	A	A	A	0.46
62	115.45	0.92	17.09	3.31	5.13	N	N	N	1.90
63	98.5	8.7	-0.10	-0.01	10.18	A	A	A	0.01
64	125.89	3.78	27.68	4.35	5.89	N	N	N	3.08
65	104	3	5.48	0.93	5.83	A	A	A	0.61
66	104	2.77	5.48	0.94	5.73	A	A	A	0.61
68	112.7	3.1	14.30	2.40	5.77	A	A	A	1.59
69	105	6	6.49	0.82	7.64	A	A	A	0.72
70	101	5	2.43	0.34	7.09	A	A	A	0.27
71	111.5	2.6	13.08	2.29	5.58	A	A	A	1.46
72	110.75	3.17	12.32	2.05	5.82	A	A	A	1.37
75	108.28	4.96	9.82	1.37	6.83	A	A	A	1.09
76	106	1.7	7.51	1.40	5.32	A	A	A	0.84
77	108.5	4.8	10.04	1.43	6.73	A	A	A	1.12
78	95.0	6.0	-3.65	-0.46	8.10	A	A	A	0.41
79	89	6	-9.74	-1.23	8.44	A	A	A	1.08
80	99.0	7	0.41	0.05	8.70	A	A	A	0.05
81	101.29	4.86	2.73	0.39	6.98	A	A	A	0.30
82	87.9	2.6	-10.85	-1.90	5.87	A	A	A	1.21
84	95.9	4.9	-2.74	-0.39	7.20	A	A	A	0.30
85	95.04	7.14	-3.61	-0.41	9.06	A	A	A	0.40
86	102.0	10.6	3.45	0.29	11.56	A	A	A	0.38
87	106.2	16.5	7.71	0.44	16.34	A	N	W	0.86
88	130	10	31.85	2.81	9.21	N	N	N	3.54
89	95.1	5.6	-3.55	-0.47	7.77	A	A	A	0.40
90	99.0	2.2	0.41	0.07	5.54	A	A	A	0.05
91	101	4	2.43	0.37	6.43	A	A	A	0.27
92	102.8	6.3	4.26	0.52	7.95	A	A	A	0.47
93	111	6	12.58	1.59	7.41	A	A	A	1.40
94	102	5.0	3.45	0.48	7.05	A	A	A	0.38

TABLE 39. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
95	110	8	11.56	1.21	8.87	A	A	A	1.29
96	101.14	3.48	2.58	0.42	6.13	A	A	A	0.29
97	108	5	9.53	1.33	6.87	A	A	A	1.06
99	102.38	5.82	3.83	0.49	7.62	A	A	A	0.43
100	99.5	4.5	0.91	0.13	6.79	A	A	A	0.10
101	97.7	6.0	-0.91	-0.12	7.96	A	A	A	0.10
103	103.8	2.9	5.27	0.90	5.79	A	A	A	0.59
104	90.23	4.55	-8.49	-1.24	7.15	A	A	A	0.94
105	110	11	11.56	0.94	11.21	A	A	A	1.29
109	108.5	3.8	10.04	1.58	6.16	A	A	A	1.12
110	97.1	4.7	-1.52	-0.22	7.01	A	A	A	0.17
111	104	8	5.48	0.57	9.21	A	A	A	0.61
112	95	3	-3.65	-0.62	5.97	A	A	A	0.41
113	105	4	6.49	1.00	6.34	A	A	A	0.72
114	115	20	16.63	0.80	18.12	N	N	N	1.85
116	91.7	3.5	-7.00	-1.13	6.35	A	A	A	0.78
117	94.2	5.80	-4.46	-0.57	7.98	A	A	A	0.50
118	133	2	34.89	6.39	5.29	N	N	N	3.88
119	93.84	9.82	-4.83	-0.43	11.63	A	A	A	0.54
120	94.9	5.0	-3.75	-0.52	7.31	A	A	A	0.42
121	978.2	15.0	892.09	55.63	5.30	N	N	N	99.28
122	101	3	2.43	0.41	5.88	A	A	A	0.27
123	109.38	2.8	10.93	1.88	5.68	A	A	A	1.22
124	103.5	1.58	4.97	0.93	5.30	A	A	A	0.55
125	112	7	13.59	1.56	8.05	A	A	A	1.51
127	97.8	6.0	-0.81	-0.10	7.96	A	A	A	0.09
128	101.8	2.8	3.25	0.56	5.77	A	A	A	0.36
130	109.5	6.0	11.05	1.40	7.47	A	A	A	1.23
131	98.75	2.617	0.15	0.03	5.72	A	A	A	0.02
133	240.7	20.2	144.12	6.83	9.81	N	N	N	16.04
134	108	4	9.53	1.47	6.28	A	A	A	1.06
135	106	8	7.51	0.78	9.09	A	A	A	0.84
136	111	2	12.58	2.30	5.38	A	A	A	1.40
138	110.326	6.405	11.89	1.44	7.71	A	A	A	1.32
140	105	0.9	6.49	1.26	5.14	A	A	A	0.72
141	104.0	15.5	5.48	0.33	15.74	A	N	W	0.61
142	102.66	6.24	4.12	0.51	7.92	A	A	A	0.46
143	115	10	16.63	1.47	10.07	N	A	N	1.85
144	92	8	-6.69	-0.70	10.07	A	A	A	0.74
145	120.5	1.7	22.21	4.15	5.26	N	N	N	2.47
146	98	4	-0.61	-0.09	6.51	A	A	A	0.07
148	100	3	1.42	0.24	5.89	A	A	A	0.16
150	117.7	1.2	19.37	3.71	5.17	N	N	N	2.16
151	109.5	5.9	11.05	1.41	7.40	A	A	A	1.23
152	109.2	6.0	10.75	1.36	7.48	A	A	A	1.20
153	89.4	7.2	-9.33	-1.05	9.52	A	A	A	1.04
154	101.8	5.8	3.25	0.42	7.63	A	A	A	0.36
155	107	2	8.52	1.56	5.40	A	A	A	0.95
157	119	2.7	20.69	3.59	5.56	N	N	N	2.30
158	100	3.6	1.42	0.23	6.22	A	A	A	0.16
159	104	3.0	5.48	0.93	5.83	A	A	A	0.61
160	102.0	5.0	3.45	0.48	7.05	A	A	A	0.38
161	106.15	6.53	7.66	0.92	7.97	A	A	A	0.85
162	84.4	6.5	-14.40	-1.73	9.22	A	A	A	1.60

TABLE 39. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
163	108.2	2.3	9.74	1.74	5.50	A	A	A	1.08
164	106	4.2	7.51	1.13	6.44	A	A	A	0.84
165	103	3	4.46	0.75	5.85	A	A	A	0.50
166	106.97	2.23	8.49	1.53	5.48	A	A	A	0.94
167	99	5	0.41	0.06	7.16	A	A	A	0.05
168	102	3	3.45	0.58	5.86	A	A	A	0.38
169	103	3.11	4.46	0.75	5.90	A	A	A	0.50
170	101	5	2.43	0.34	7.09	A	A	A	0.27
171	98.56	7.02	-0.04	-0.00	8.74	A	A	A	0.00
172	101.9	2.0	3.35	0.61	5.44	A	A	A	0.37
173	109.18	5.72	10.73	1.39	7.29	A	A	A	1.19
174	109	5	10.55	1.47	6.84	A	A	A	1.17
175	134.4	4.8	36.31	5.17	6.20	N	N	N	4.04
176	109.9	3.1	11.46	1.92	5.80	A	A	A	1.28
177	113	5	14.60	2.04	6.73	A	A	A	1.63
179	116	8.0	17.65	1.84	8.56	N	A	N	1.96
180	108.8	5.5	10.34	1.37	7.16	A	A	A	1.15
181	102	8.0	3.45	0.36	9.34	A	A	A	0.38
182	129.7	4.9	31.54	4.44	6.32	N	N	N	3.51
184	112.09	3.41	13.68	2.23	5.91	A	A	A	1.52
185	88.2	12.7	-10.55	-0.76	15.27	A	N	W	1.17
186	103	5	4.46	0.62	7.02	A	A	A	0.50
187	107.13	6.00	8.65	1.09	7.56	A	A	A	0.96
188	98.60	7.90	0.00	0.00	9.48	A	A	A	0.00
190	127	7	28.80	3.30	7.49	N	N	N	3.21
192	100.2	7.2	1.62	0.18	8.79	A	A	A	0.18
194	106.0	5.0	7.51	1.05	6.93	A	A	A	0.84
195	104	5.4	5.48	0.73	7.26	A	A	A	0.61
196	96.1	4.5	-2.54	-0.37	6.90	A	A	A	0.28
198	94.5	0.8	-4.16	-0.81	5.14	A	A	A	0.46
200	109	3.8	10.55	1.66	6.15	A	A	A	1.17
201	97.97	6.89	-0.64	-0.07	8.67	A	A	A	0.07
202	104	1.3	5.48	1.05	5.22	A	A	A	0.61
204	114	6.05	15.62	1.96	7.34	N	A	N	1.74
206	106.3	6.5	7.81	0.94	7.94	A	A	A	0.87
207	100.5	4.1	1.93	0.29	6.51	A	A	A	0.21
209	119.75	1.88	21.45	3.96	5.31	N	N	N	2.39
210	118	3	19.68	3.33	5.67	N	N	N	2.19
212	111.6	12	13.18	1.00	11.89	A	A	A	1.47
213	95.6	7.1	-3.04	-0.35	8.99	A	A	A	0.34
216	101	2	2.43	0.45	5.44	A	A	A	0.27
218	114.5	1.9	16.13	2.97	5.34	N	N	N	1.79
222	101.91	4.54	3.36	0.49	6.75	A	A	A	0.37
223	107	6	8.52	1.08	7.56	A	A	A	0.95
224	136.41	8.32	38.35	3.90	7.93	N	N	N	4.27
225	97.8	3.7	-0.81	-0.13	6.33	A	A	A	0.09
228	111.0	3.1	12.58	2.11	5.79	A	A	A	1.40
229	85.95	2.70	-12.83	-2.23	5.97	A	A	A	1.43
232	13.0	4.1	-86.82	-13.24	31.94	N	N	N	9.66
236	120.402	2.662	22.11	3.85	5.53	N	N	N	2.46
237	106	7	7.51	0.86	8.33	A	A	A	0.84
239	109	2.0	10.55	1.93	5.39	A	A	A	1.17
241	111	6	12.58	1.59	7.41	A	A	A	1.40
242	103	7	4.46	0.51	8.48	A	A	A	0.50

TABLE 39. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
243	8.12	0.498	-91.76	-18.01	7.96	N	N	N	10.21
244	109.2	3.8	10.75	1.69	6.15	A	A	A	1.20
245	112.5	1.6	14.10	2.65	5.27	A	N	W	1.57
246	112	3.2	13.59	2.26	5.82	A	A	A	1.51
247	123.188	7.884	24.94	2.63	8.17	N	N	N	2.78
249	96	4	-2.64	-0.41	6.56	A	A	A	0.29
250	90.41	0.43	-8.31	-1.63	5.09	A	A	A	0.92
251	109.21	3.61	10.76	1.72	6.05	A	A	A	1.20
252	103.3	4.5	4.77	0.70	6.69	A	A	A	0.53

## **Reported Results for the Ra-228 Determination in Sample 5**

TABLE 40. Target values

Parameter	Value
Massic Activity, [Bq/kg]	90
Uncertainty, [Bq/kg]	4
Maximum Acceptable Relative Bias, [%]	30

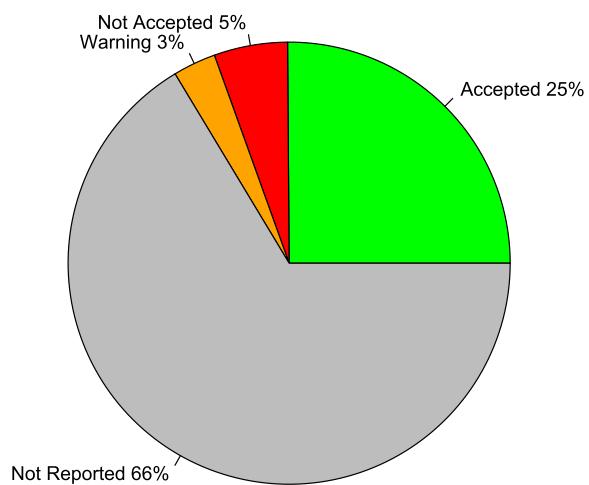


FIGURE 40. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

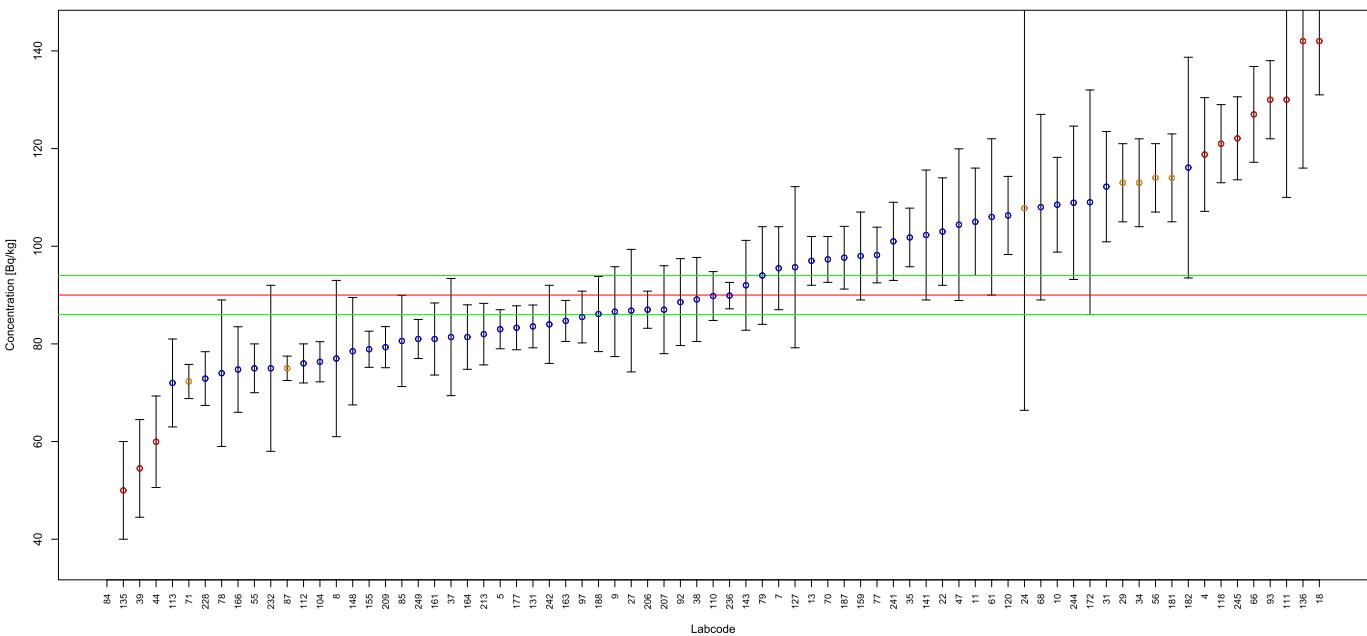


FIGURE 41. Reported results and evaluation parameters for Ra-228. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 41. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
4	118.78	11.64	31.98	2.34	10.76	N	N	N	1.55
5	83	4	-7.78	-1.24	6.56	A	A	A	0.38
7	95.5	8.5	6.11	0.59	9.95	A	A	A	0.30
8	77.0	16.0	-14.44	-0.79	21.25	A	A	A	0.70
9	86.6	9.2	-3.78	-0.34	11.52	A	A	A	0.18
10	108.5	9.7	20.56	1.76	9.98	A	A	A	0.99
11	105	11	16.67	1.28	11.38	A	A	A	0.81
13	97	5	7.78	1.09	6.81	A	A	A	0.38
18	142	11	57.78	4.44	8.93	N	N	N	2.79
22	103	11	14.44	1.11	11.57	A	A	A	0.70
24	107.8	41.4	19.78	0.43	38.66	A	N	W	0.96
27	86.81	12.55	-3.54	-0.24	15.12	A	A	A	0.17
29	113	8	25.56	2.57	8.36	A	N	W	1.24
31	112.2	11.3	24.67	1.85	11.01	A	A	A	1.19
34	113	9	25.56	2.34	9.12	A	N	W	1.24
35	101.8	6	13.11	1.64	7.38	A	A	A	0.63
37	81.4	12.0	-9.56	-0.68	15.40	A	A	A	0.46
38	89.1	8.6	-1.00	-0.09	10.63	A	A	A	0.05
39	54.5	10	-39.44	-3.30	18.88	N	A	N	1.91
44	59.96	9.37	-33.38	-2.95	16.25	N	A	N	1.61
47	104.41	15.53	16.01	0.90	15.52	A	A	A	0.77
55	75	5	-16.67	-2.34	8.01	A	A	A	0.81
56	114	7	26.67	2.98	7.58	A	N	W	1.29
61	106	16	17.78	0.97	15.74	A	A	A	0.86
66	127	9.81	41.11	3.49	8.91	N	N	N	1.99
68	108	19	20.00	0.93	18.15	A	A	A	0.97
70	97.3	4.7	8.11	1.18	6.56	A	A	A	0.39
71	72.3	3.5	-19.67	-3.33	6.57	A	N	W	0.95
77	98.2	5.7	9.11	1.18	7.31	A	A	A	0.44
78	74.0	15.0	-17.78	-1.03	20.75	A	A	A	0.86

TABLE 41. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
79	94	10	4.44	0.37	11.53	A	A	A	0.21
84	8.25	0.58	-90.83	-20.23	8.32	N	N	N	4.39
85	80.60	9.34	-10.44	-0.93	12.41	A	A	A	0.51
87	75.0	2.5	-16.67	-3.18	5.56	A	N	W	0.81
92	88.56	8.9	-1.60	-0.15	10.99	A	A	A	0.08
93	130	8	44.44	4.47	7.59	N	N	N	2.15
97	85.5	5.3	-5.00	-0.68	7.63	A	A	A	0.24
104	76.34	4.11	-15.18	-2.38	6.98	A	A	A	0.73
110	89.8	5.0	-0.22	-0.03	7.12	A	A	A	0.01
111	130	20	44.44	1.96	16.01	N	N	N	2.15
112	76	4	-15.56	-2.47	6.89	A	A	A	0.75
113	72	9	-20.00	-1.83	13.27	A	A	A	0.97
118	121	8	34.44	3.47	7.97	N	N	N	1.67
120	106.3	8.0	18.11	1.82	8.74	A	A	A	0.88
127	95.7	16.5	6.33	0.34	17.81	A	A	A	0.31
131	83.58	4.38	-7.13	-1.08	6.87	A	A	A	0.34
135	50.0	10.0	-44.44	-3.71	20.49	N	A	N	2.15
136	142	26	57.78	1.98	18.84	N	N	N	2.79
139	94.4	7.62	4.89	0.51	9.21	A	A	A	0.24
141	102.3	13.3	13.67	0.89	13.74	A	A	A	0.66
143	92	9.2	2.22	0.20	10.94	A	A	A	0.11
148	78.5	11	-12.78	-0.98	14.70	A	A	A	0.62
155	78.9	3.7	-12.33	-2.04	6.46	A	A	A	0.60
159	98	9	8.89	0.81	10.20	A	A	A	0.43
161	81.00	7.38	-10.00	-1.07	10.14	A	A	A	0.48
163	84.7	4.2	-5.89	-0.91	6.66	A	A	A	0.28
164	81.4	6.6	-9.56	-1.11	9.25	A	A	A	0.46
166	74.75	8.76	-16.94	-1.58	12.53	A	A	A	0.82
172	109	23	21.11	0.81	21.56	A	A	A	1.02
177	83.3	4.5	-7.44	-1.11	7.00	A	A	A	0.36
181	114	9	26.67	2.44	9.06	A	N	W	1.29
182	116.1	22.6	29.00	1.14	19.97	A	A	A	1.40
187	97.65	6.42	8.50	1.01	7.94	A	A	A	0.41
188	86.12	7.70	-4.31	-0.45	9.98	A	A	A	0.21
206	87.0	3.8	-3.33	-0.54	6.23	A	A	A	0.16
207	87	9	-3.33	-0.30	11.26	A	A	A	0.16
209	79.33	4.21	-11.86	-1.84	6.92	A	A	A	0.57
213	82.0	6.3	-8.89	-1.07	8.88	A	A	A	0.43
228	72.9	5.5	-19.00	-2.51	8.76	A	A	A	0.92
232	75	17	-16.67	-0.86	23.10	A	A	A	0.81
236	89.884	2.703	-0.13	-0.02	5.37	A	A	A	0.01
241	101	8	12.22	1.23	9.08	A	A	A	0.59
242	84	8	-6.67	-0.67	10.51	A	A	A	0.32
244	108.9	15.7	21.00	1.17	15.09	A	A	A	1.02
245	122.1	8.5	35.67	3.42	8.26	N	N	N	1.72
249	81	4	-10.00	-1.59	6.64	A	A	A	0.48

## Reported Results for the Ra-226 Determination in Sample 5

TABLE 42. Target values

Parameter	Value
Massic Activity, [Bq/kg]	6970
Uncertainty, [Bq/kg]	200
Maximum Acceptable Relative Bias, [%]	20

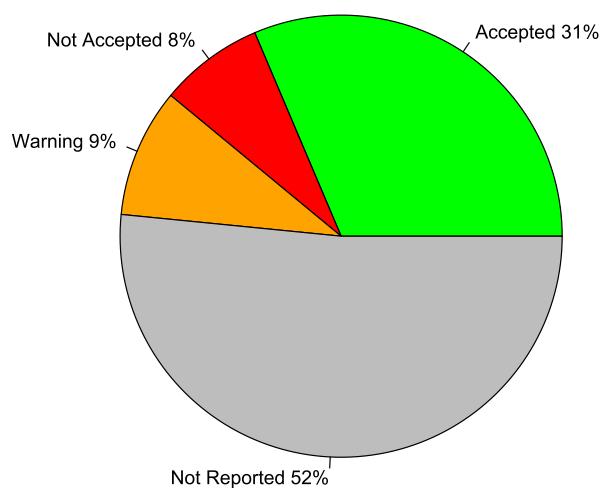


FIGURE 42. Piechart of percentage of accepted results vs. warnings vs. not accepted results vs. not reported

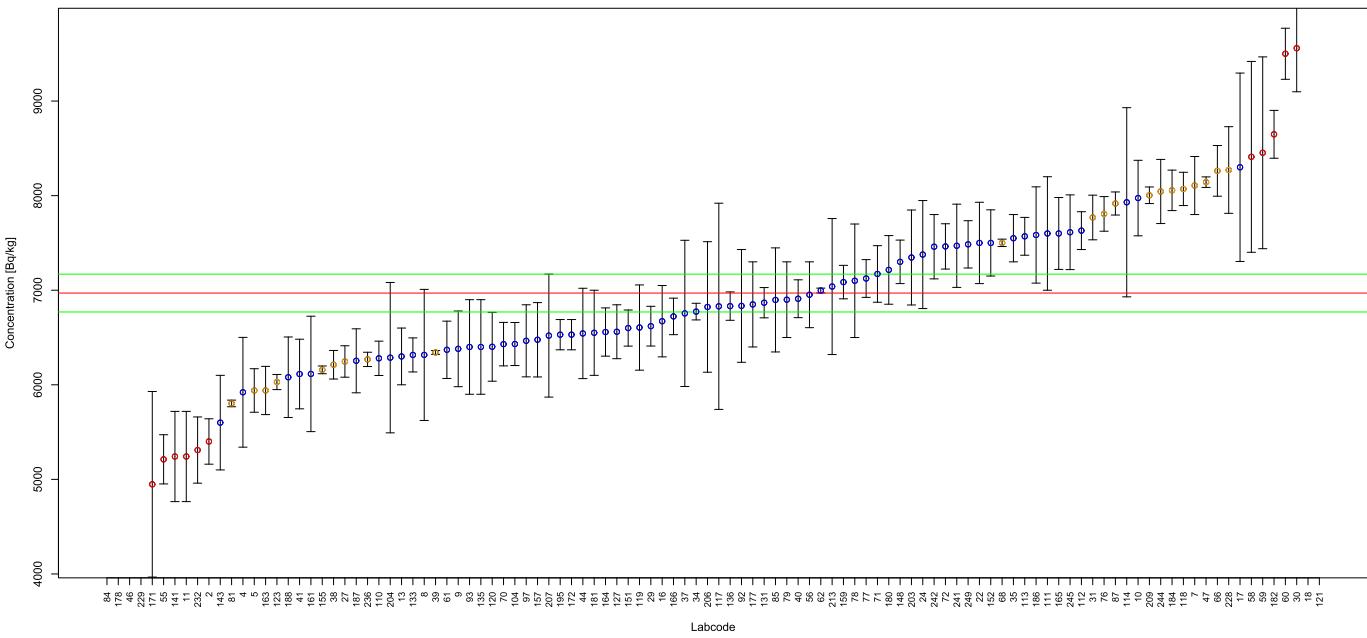


FIGURE 43. Reported results and evaluation parameters for Ra-226. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores.

TABLE 43. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
2	5400.7	240	-22.52	-5.02	5.29	N	N	N	1.66
4	5921	580.3	-15.05	-1.71	10.21	A	A	A	1.11
5	5940	230	-14.78	-3.38	4.82	A	N	W	1.09
7	8107	307	16.31	3.10	4.75	A	N	W	1.20
8	6316	693	-9.38	-0.91	11.34	A	A	A	0.69
9	6380	400	-8.46	-1.32	6.90	A	A	A	0.62
10	7974.4	399.2	14.41	2.25	5.77	A	A	A	1.06
11	5242	477	-24.79	-3.34	9.54	N	N	N	1.82
13	6300	300	-9.61	-1.86	5.56	A	A	A	0.71
16	6672.5	377.2	-4.27	-0.70	6.34	A	A	A	0.31
17	8300	996	19.08	1.31	12.34	A	A	A	1.40
18	10600	600	52.08	5.74	6.35	N	N	N	3.83
22	7500	430	7.60	1.12	6.41	A	A	A	0.56
24	7377	571	5.84	0.67	8.26	A	A	A	0.43
27	6246.60	166.16	-10.38	-2.78	3.91	A	N	W	0.76
29	6620	210	-5.02	-1.21	4.28	A	A	A	0.37
30	9559.2	460.97	37.15	5.15	5.61	N	N	N	2.73
31	7769	236	11.46	2.58	4.18	A	N	W	0.84
34	6774	88	-2.81	-0.90	3.15	A	A	A	0.21
35	7550	250	8.32	1.81	4.38	A	A	A	0.61
37	6755	773	-3.08	-0.27	11.80	A	A	A	0.23
38	6212	151	-10.88	-3.02	3.76	A	N	W	0.80
39	6342	20	-9.01	-3.12	2.89	A	N	W	0.66
40	6910	200	-0.86	-0.21	4.08	A	A	A	0.06
41	6114	368	-12.28	-2.04	6.67	A	A	A	0.90
44	6543.01	477.63	-6.13	-0.82	7.84	A	A	A	0.45
46	1515	115	-78.26	-23.64	8.12	N	N	N	5.75
47	8142.49	55.67	16.82	5.65	2.95	A	N	W	1.24
55	5212	260	-25.22	-5.36	5.75	N	N	N	1.85
56	6952	348	-0.26	-0.04	5.77	A	A	A	0.02

TABLE 43. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
58	8410	1009	20.66	1.40	12.34	N	A	N	1.52
59	8453.0	1014.0	21.28	1.43	12.33	N	A	N	1.56
60	9500	270	36.30	7.53	4.04	N	N	N	2.67
61	6370	303	-8.61	-1.65	5.56	A	A	A	0.63
62	6996.8	25.47	0.38	0.13	2.89	A	A	A	0.03
66	8262	268	18.54	3.86	4.33	A	N	W	1.36
68	7501	39	7.62	2.61	2.92	A	N	W	0.56
70	6430	230	-7.75	-1.77	4.59	A	A	A	0.57
71	7172	299	2.90	0.56	5.06	A	A	A	0.21
72	7463.21	239.53	7.08	1.58	4.31	A	A	A	0.52
76	7807	183	12.01	3.09	3.71	A	N	W	0.88
77	7124	199.5	2.21	0.55	4.01	A	A	A	0.16
78	7100.0	600.0	1.87	0.21	8.92	A	A	A	0.14
79	6900	400	-1.00	-0.16	6.47	A	A	A	0.07
81	5803	34.99	-16.74	-5.75	2.93	A	N	W	1.23
84	631	37.8	-90.95	-31.14	6.64	N	N	N	6.69
85	6897.48	550.14	-1.04	-0.12	8.48	A	A	A	0.08
87	7917	122	13.59	4.04	3.26	A	N	W	1.00
92	6834.2	596.1	-1.95	-0.22	9.18	A	A	A	0.14
93	6400	500	-8.18	-1.06	8.32	A	A	A	0.60
97	6465	381	-7.25	-1.17	6.55	A	A	A	0.53
104	6431.2	227.5	-7.73	-1.78	4.55	A	A	A	0.57
110	6280	181.5	-9.90	-2.55	4.07	A	A	A	0.73
111	7600	600	9.04	1.00	8.40	A	A	A	0.66
112	7630	200	9.47	2.33	3.89	A	A	A	0.70
113	7570	200	8.61	2.12	3.90	A	A	A	0.63
114	7930	1000	13.77	0.94	12.93	A	A	A	1.01
117	6830	1090	-2.01	-0.13	16.21	A	A	A	0.15
118	8071	176	15.80	4.13	3.60	A	N	W	1.16
119	6605.32	450.61	-5.23	-0.74	7.40	A	A	A	0.38
120	6402	364	-8.15	-1.37	6.37	A	A	A	0.60
121	13787	373	97.80	16.11	3.94	N	N	N	7.19
123	6029.2	80.03	-13.50	-4.37	3.16	A	N	W	0.99
127	6561	285	-5.87	-1.17	5.21	A	A	A	0.43
131	6868	160.1	-1.46	-0.40	3.70	A	A	A	0.11
133	6315.9	180	-9.38	-2.43	4.04	A	A	A	0.69
135	6400	500	-8.18	-1.06	8.32	A	A	A	0.60
136	6832	150	-1.98	-0.55	3.61	A	A	A	0.15
139	7392.2	611.91	6.06	0.66	8.76	A	A	A	0.45
141	5242	477	-24.79	-3.34	9.54	N	N	N	1.82
143	5600	500	-19.66	-2.54	9.38	A	A	A	1.45
148	7300	230	4.73	1.08	4.26	A	A	A	0.35
151	6600	191	-5.31	-1.34	4.08	A	A	A	0.39
152	7500	350	7.60	1.31	5.48	A	A	A	0.56
155	6158	41	-11.65	-3.98	2.95	A	N	W	0.86
157	6476	393	-7.09	-1.12	6.71	A	A	A	0.52
159	7086	177	1.66	0.43	3.80	A	A	A	0.12
161	6115.04	610.10	-12.27	-1.33	10.38	A	A	A	0.90
163	5940	255	-14.78	-3.18	5.16	A	N	W	1.09
164	6558	255	-5.91	-1.27	4.83	A	A	A	0.43
165	7600	380	9.04	1.47	5.76	A	A	A	0.66
166	6723	193	-3.54	-0.89	4.06	A	A	A	0.26
171	4948	981	-29.01	-2.02	20.03	N	N	N	2.13
172	6530	160	-6.31	-1.72	3.77	A	A	A	0.46

TABLE 43. Evaluation Results, Rep. Value and Rep. Unc. in [Bq/kg]

Labcode	Rep. Value	Rep. Unc.	Relbias	Utest	Ptest	Accuracy	Precision	Final Score	Z-Score
177	6850	450	-1.72	-0.24	7.17	A	A	A	0.13
178	1168	115	-83.24	-25.15	10.26	N	N	N	6.12
180	7214.9	362.9	3.51	0.59	5.79	A	A	A	0.26
181	6550	450	-6.03	-0.85	7.45	A	A	A	0.44
182	8648.4	252.9	24.08	5.21	4.10	N	N	N	1.77
184	8056	214	15.58	3.71	3.91	A	N	W	1.15
186	7584	509	8.81	1.12	7.30	A	A	A	0.65
187	6253.70	338.33	-10.28	-1.82	6.12	A	A	A	0.76
188	6080.00	425.60	-12.77	-1.89	7.57	A	A	A	0.94
195	6530	160	-6.31	-1.72	3.77	A	A	A	0.46
203	7346	502	5.39	0.70	7.41	A	A	A	0.40
204	6287	795	-9.80	-0.83	12.97	A	A	A	0.72
206	6823	690	-2.11	-0.20	10.51	A	A	A	0.16
207	6520	650	-6.46	-0.66	10.37	A	A	A	0.47
209	8004.00	87.68	14.84	4.73	3.07	A	N	W	1.09
213	7039	719	0.99	0.09	10.61	A	A	A	0.07
228	8271.0	458.0	18.67	2.60	6.24	A	N	W	1.37
229	1751.32	229.06	-74.87	-17.16	13.39	N	N	N	5.51
232	5310	350	-23.82	-4.12	7.19	N	N	N	1.75
236	6268.788	75.549	-10.06	-3.28	3.11	A	N	W	0.74
241	7470	440	7.17	1.03	6.55	A	A	A	0.53
242	7460	340	7.03	1.24	5.39	A	A	A	0.52
244	8044	339	15.41	2.73	5.10	A	N	W	1.13
245	7613	395	9.23	1.45	5.93	A	A	A	0.68
249	7485	250	7.39	1.61	4.40	A	A	A	0.54

## 4 Intercomparison Parameters

### Reported Results for gross alpha Determination in Sample 1

TABLE 44. Target values

Parameter	Value
Robust Mean, Bq/kg	42.3
Robust SD, Bq/kg	6.5
MARB, %	50

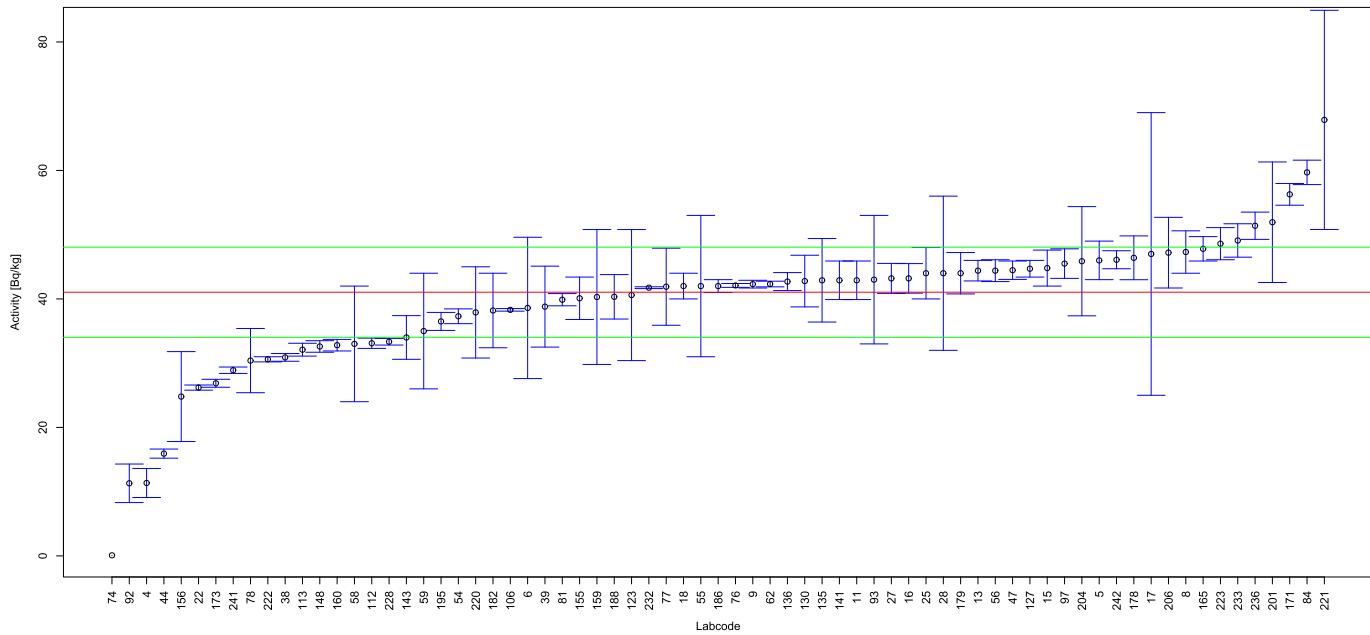


FIGURE 44. Reported results and evaluation parameters for gross alpha in Sample 1.

## Reported Results for gross beta Determination in Sample 1

TABLE 45. Target values

Parameter	Value
Robust Mean, Bq/kg	38.1
Robust SD, Bq/kg	10
MARB, %	50

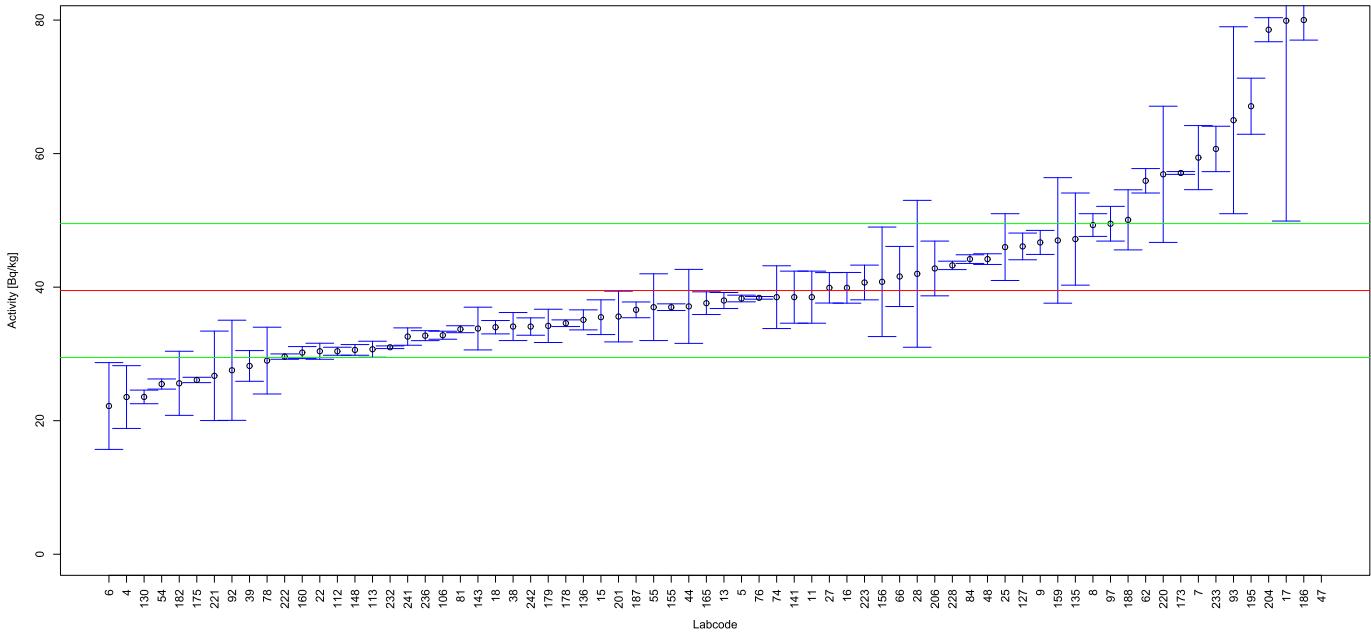


FIGURE 45. Reported results and evaluation parameters for gross beta in Sample 1.

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- [3] OSVATH, I., TARJAN, S., PITOIS, A., GROENING, M., OSBORN, D., IAEA's ALMERA network: Supporting the quality of environmental radioactivity measurements, Applied Radiation and Isotopes (2015) DOI: 10.1016/j.apradiso.2015.12.062

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