

# IAEA-TERC-2022-02 ALMERA Proficiency Test Exercise, Pie-charts, S-Shapes and Reported Results with Scores

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November 3, 2022

## Contents

<b>1 Introduction</b>	<b>1</b>
1.1 Evaluation criteria . . . . .	1
<b>2 Data Evaluation</b>	<b>3</b>
<b>3 Proficiency Test Parameters</b>	<b>3</b>
<b>4 Intercomparison Parameters</b>	<b>47</b>
<b>5 Gamma spectrum analysis exercise results (Sample 7)</b>	<b>68</b>
<b>6 References</b>	<b>113</b>
<b>7 Contributors to evaluation and report</b>	<b>114</b>

### Abstract

This report describes the evaluation method for the Proficiency Test Exercise on the determination of anthropogenic and natural radionuclides in water, soil (gamma-ray spectrum analysis exercise), and simulated contaminated surface samples IAEA-TERC-2022-02. The evaluation is performed by the proficiency test team of the Terrestrial Environmental Radiochemistry Laboratory of the IAEA using their standard approach.

## 1 Introduction

The following figures show the results (displayed in pie charts, characteristic S-shape graphs and tables) for the ALMERA Proficiency Test. In the S-shape graphs, the vertical axis displays the activity in [Bq/kg] and the horizontal axis shows the labcodes for the participating laboratories. The range on the vertical axis is limited to  $\pm 2 \times$  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.

*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 criteria

The data is evaluated according to the following steps:

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

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

2. The relative bias is compared to the Maximum Acceptable Relative Bias (MARB) which has been determined for each analyte, considering the radioanalytical methods, the level of radioactivity and the complexity of the analysis.

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

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

$$P = \sqrt{\left(\frac{u_{target}}{A_{target}}\right)^2 + \left(\frac{u_{reported}}{A_{reported}}\right)^2} * 100$$

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

where k is the coverage factor, for the 99% confidential level,  $k = 2.58$ .

4. If the result is between the  $\pm MARB$  values, but it is not overlapping the target value within the uncertainty, this equation is used to decide if they are significantly different or not.

5. 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 precision. The result will be assigned "Not Accepted" for precision if either conditions are not fulfilled.

6. The final score is assigned according to the detailed evaluation described above. The possible scores are listed below:

- "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"

7. As additional information, a Z-Score parameter is shown in the evaluation tables that is calculated by using the robust standard deviation described in [2]:

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

8. If the analyte is included in the proficiency test evaluation scheme, 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.

9. For analytes evaluated by intercomparison, the final scores (Z-Score evaluation) are assigned as follows:

- "Accepted" for Z-Scores less than 2
- "Not Accepted" Z-Scores above 3
- "Warning" for Z-Scores less than 3 and larger than 2

## 2 Data Evaluation

A total of 97 laboratories from 55 different countries successfully reported data in the IAEA-TERC-2022-02 proficiency test exercise.

For each of the analytes evaluated, the target value, target uncertainty and the MARB are listed. A pie chart showing the distribution of accepted, warning, not acceptable and not reported results, the s-shape graph, and a detailed table listing all evaluation results for the analyte (sorted by the laboratory code) are provided. The data points are coloured in blue, yellow and red, corresponding to a result of "Accepted", "Warning", and "Not Accepted", respectively.

For analytes evaluated by intercomparison (IC) parameters, the target value table lists the robust mean, robust standard deviation (SD) and the number of results evaluated (N). All results are combined from the World Wide Open and ALMERA exercises for the purposes of calculating the robust statistics. A detailed table listing all evaluation results for the analyte (sorted by the laboratory code) are provided, where the Z-Scores are calculated using the robust mean as the  $Value_{target}$  in the equation listed in 1.1 Evaluation criteria, point 7.

## 3 Proficiency Test Parameters

### Reported Results for Co-60 Determination in Sample 1

TABLE 1. Target values

Parameter	Value
Target Value, Bq/kg	17.7
UNC, Bq/kg	1.1
MARB, %	20

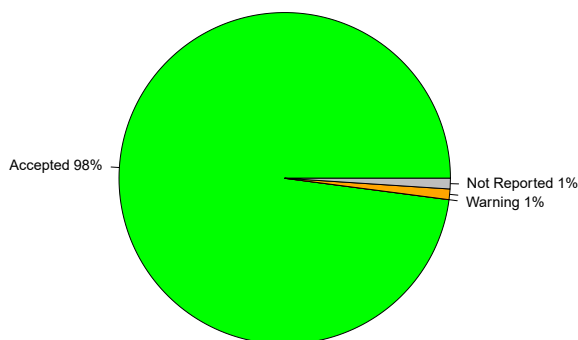


FIGURE 1. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

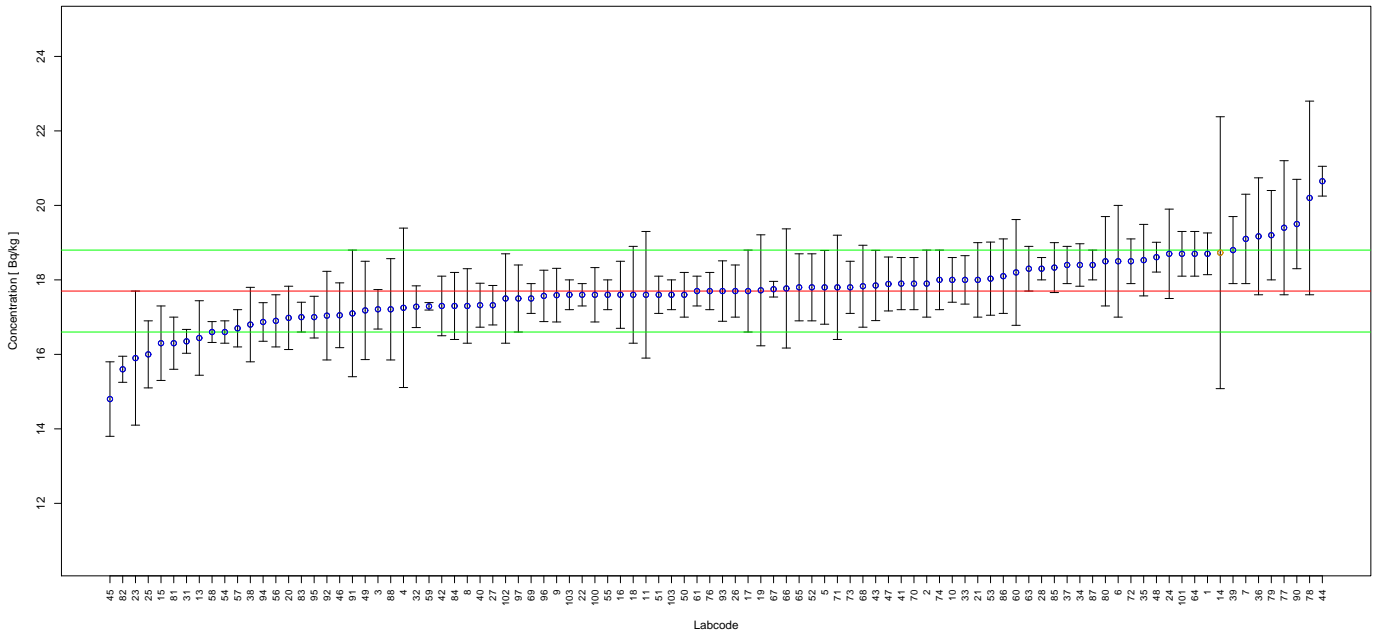


FIGURE 2. Reported results and evaluation parameters for Co-60. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 2. Evaluation Results for Co-60 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	18.7	0.56	5.65	6.90	A	A	A	0.91
2	17.9	0.9	1.13	7.99	A	A	A	0.18
3	17.21	0.53	-2.77	6.94	A	A	A	0.45
4	17.25	2.14	-2.54	13.88	A	A	A	0.41
5	17.8	0.99	0.56	8.34	A	A	A	0.09
6	18.5	1.5	4.52	10.22	A	A	A	0.73
7	19.1	1.2	7.91	8.84	A	A	A	1.27
8	17.3	1.0	-2.26	8.49	A	A	A	0.36
9	17.59	0.72	-0.62	7.44	A	A	A	0.10
10	18.0	0.6	1.69	7.05	A	A	A	0.27
11	17.6	1.7	-0.56	11.49	A	A	A	0.09
13	16.44	1.00	-7.12	8.70	A	A	A	1.15
14	18.73	3.65	5.82	20.45	A	N	W	0.94
15	16.3	1.0	-7.91	8.73	A	A	A	1.27
16	17.6	0.9	-0.56	8.05	A	A	A	0.09
17	17.7	1.1	0.00	8.79	A	A	A	0.00
18	17.6	1.3	-0.56	9.65	A	A	A	0.09
19	17.72	1.49	0.11	10.46	A	A	A	0.02
20	16.98	0.85	-4.07	7.98	A	A	A	0.65
21	18.0	1.0	1.69	8.34	A	A	A	0.27
22	17.6	0.3	-0.56	6.44	A	A	A	0.09
23	15.9	1.8	-10.17	12.91	A	A	A	1.64
24	18.7	1.2	5.65	8.93	A	A	A	0.91
25	16.0	0.9	-9.60	8.38	A	A	A	1.55
26	17.7	0.7	0.00	7.37	A	A	A	0.00
27	17.32	0.53	-2.15	6.93	A	A	A	0.35
28	18.3	0.3	3.39	6.43	A	A	A	0.55
31	16.35	0.32	-7.63	6.52	A	A	A	1.23
32	17.28	0.56	-2.37	7.01	A	A	A	0.38
33	18	0.65	1.69	7.19	A	A	A	0.27

TABLE 2. Evaluation Results for Co-60 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
34	18.40	0.57	3.95	6.94	A	A	A	0.64
35	18.53	0.96	4.69	8.09	A	A	A	0.75
36	19.17	1.57	8.31	10.28	A	A	A	1.34
37	18.4	0.5	3.95	6.78	A	A	A	0.64
38	16.8	1.0	-5.08	8.61	A	A	A	0.82
39	18.8	0.9	6.21	7.84	A	A	A	1.00
40	17.32	0.59	-2.15	7.09	A	A	A	0.35
41	17.9	0.7	1.13	7.34	A	A	A	0.18
42	17.3	0.80	-2.26	7.75	A	A	A	0.36
43	17.85	0.9435	0.85	8.16	A	A	A	0.14
44	20.65	0.4	16.67	6.51	A	A	A	2.68
45	14.8	1.0	-16.38	9.18	A	A	A	2.64
46	17.05	0.87	-3.67	8.04	A	A	A	0.59
47	17.89	0.724	1.07	7.42	A	A	A	0.17
48	18.61	0.40	5.14	6.58	A	A	A	0.83
49	17.18	1.32	-2.94	9.88	A	A	A	0.47
50	17.6	0.6	-0.56	7.09	A	A	A	0.09
51	17.6	0.5	-0.56	6.83	A	A	A	0.09
52	17.8	0.9	0.56	8.01	A	A	A	0.09
53	18.033	0.982	1.88	8.26	A	A	A	0.30
54	16.6	0.3	-6.21	6.47	A	A	A	1.00
55	17.6	0.4	-0.56	6.62	A	A	A	0.09
56	16.9	0.7	-4.52	7.47	A	A	A	0.73
57	16.7	0.5	-5.65	6.90	A	A	A	0.91
58	16.60	0.28	-6.21	6.44	A	A	A	1.00
59	17.29	0.1	-2.32	6.24	A	A	A	0.37
60	18.20	1.42	2.82	9.97	A	A	A	0.45
61	17.7	0.4	0.00	6.61	A	A	A	0.00
63	18.3	0.6	3.39	7.03	A	A	A	0.55
64	18.7	0.6	5.65	6.99	A	A	A	0.91
65	17.8	0.9	0.56	8.01	A	A	A	0.09
66	17.77	1.60	0.40	10.94	A	A	A	0.06
67	17.75	0.21	0.28	6.33	A	A	A	0.05
68	17.83	1.1	0.73	8.76	A	A	A	0.12
69	17.5	0.4	-1.13	6.62	A	A	A	0.18
70	17.9	0.7	1.13	7.34	A	A	A	0.18
71	17.8	1.4	0.56	10.02	A	A	A	0.09
72	18.5	0.6	4.52	7.01	A	A	A	0.73
73	17.8	0.7	0.56	7.35	A	A	A	0.09
74	18.0	0.8	1.69	7.64	A	A	A	0.27
76	17.7	0.5	0.00	6.83	A	A	A	0.00
77	19.4	1.8	9.60	11.17	A	A	A	1.55
78	20.2	2.6	14.12	14.29	A	A	A	2.27
79	19.2	1.2	8.47	8.81	A	A	A	1.36
80	18.5	1.2	4.52	8.98	A	A	A	0.73
81	16.30	0.7	-7.91	7.55	A	A	A	1.27
82	15.6	0.35	-11.86	6.61	A	A	A	1.91
83	17.0	0.4	-3.95	6.65	A	A	A	0.64
84	17.3	0.9	-2.26	8.10	A	A	A	0.36
85	18.33	0.67	3.56	7.21	A	A	A	0.57
86	18.1	1.0	2.26	8.32	A	A	A	0.36
87	18.4	0.4	3.95	6.58	A	A	A	0.64
88	17.21	1.36	-2.77	10.05	A	A	A	0.45
90	19.5	1.2	10.17	8.75	A	A	A	1.64

TABLE 2. Evaluation Results for Co-60 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
91	17.1	1.7	-3.39	11.72	A	A	A	0.55
92	17.04	1.19	-3.73	9.35	A	A	A	0.60
93	17.7	0.811	0.00	7.72	A	A	A	0.00
94	16.87	0.518	-4.69	6.93	A	A	A	0.75
95	17.0	0.56	-3.95	7.03	A	A	A	0.64
96	17.57	0.69	-0.73	7.35	A	A	A	0.12
97	17.5	0.9	-1.13	8.07	A	A	A	0.18
100	17.60	0.73	-0.56	7.47	A	A	A	0.09
101	18.7	0.6	5.65	6.99	A	A	A	0.91
102	17.5	1.2	-1.13	9.25	A	A	A	0.18
103	17.6	0.4	-0.56	6.62	A	A	A	0.09

# Reported Results for Sr-90 Determination in Sample 1

TABLE 3. Target values

Parameter	Value
Target Value, Bq/kg	26.4
UNC, Bq/kg	1.6
MARB, %	30

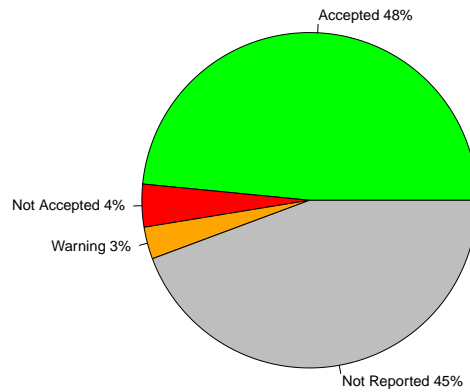


FIGURE 3. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

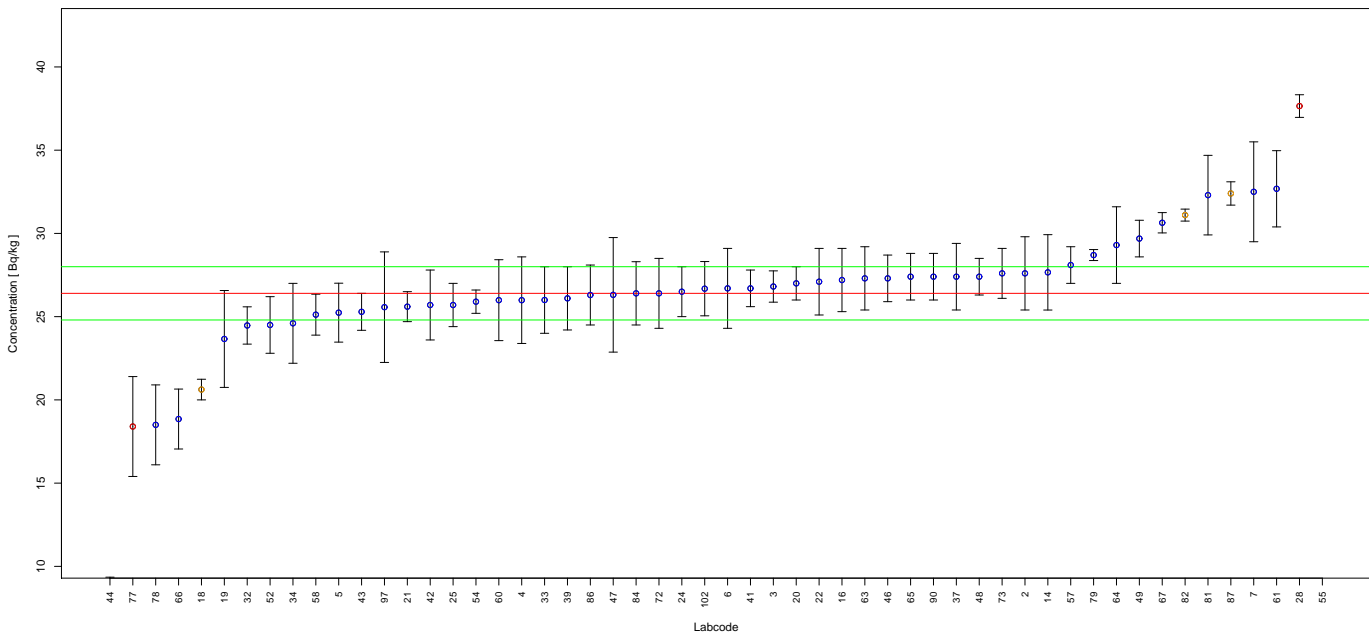


FIGURE 4. Reported results and evaluation parameters for Sr-90. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 4. Evaluation Results for Sr-90 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
2	27.6	2.2	4.55	10.01	A	A	A	0.75
3	26.81	0.94	1.55	7.00	A	A	A	0.26
4	25.99	2.60	-1.55	11.70	A	A	A	0.26
5	25.24	1.77	-4.39	9.27	A	A	A	0.73
6	26.7	2.4	1.14	10.84	A	A	A	0.19
7	32.5	3.0	23.11	11.04	A	A	A	3.81
14	27.661	2.264	4.78	10.18	A	A	A	0.79
16	27.2	1.9	3.03	9.25	A	A	A	0.50
18	20.62	0.62	-21.89	6.77	A	N	W	3.61
19	23.66	2.91	-10.38	13.71	A	A	A	1.71
20	27	1	2.27	7.10	A	A	A	0.38
21	25.6	0.9	-3.03	7.01	A	A	A	0.50
22	27.1	2.0	2.65	9.55	A	A	A	0.44
24	26.5	1.5	0.38	8.29	A	A	A	0.06
25	25.7	1.3	-2.65	7.89	A	A	A	0.44
28	37.65	0.68	42.61	6.32	N	N	N	7.03
32	24.47	1.12	-7.31	7.59	A	A	A	1.21
33	26	2	-1.52	9.79	A	A	A	0.25
34	24.6	2.4	-6.82	11.49	A	A	A	1.12
37	27.4	2.0	3.79	9.49	A	A	A	0.62
39	26.1	1.9	-1.14	9.47	A	A	A	0.19
41	26.7	1.1	1.14	7.33	A	A	A	0.19
42	25.7	2.1	-2.65	10.17	A	A	A	0.44
43	25.29	1.11	-4.20	7.48	A	A	A	0.69
44	8.45	0.9	-67.99	12.25	N	N	N	11.22
46	27.3	1.4	3.41	7.94	A	A	A	0.56
47	26.31	3.44	-0.34	14.41	A	A	A	0.06
48	27.4	1.1	3.79	7.27	A	A	A	0.62
49	29.69	1.10	12.46	7.10	A	A	A	2.06
52	24.5	1.7	-7.20	9.21	A	A	A	1.19
54	25.9	0.7	-1.89	6.64	A	A	A	0.31
55	86	14	225.76	17.37	N	N	N	37.25
57	28.1	1.1	6.44	7.21	A	A	A	1.06
58	25.12	1.23	-4.85	7.79	A	A	A	0.80
60	25.99	2.43	-1.55	11.14	A	A	A	0.26
61	32.68	2.29	23.79	9.26	A	A	A	3.93
63	27.3	1.9	3.41	9.23	A	A	A	0.56
64	29.3	2.3	10.98	9.92	A	A	A	1.81
65	27.4	1.4	3.79	7.93	A	A	A	0.62
66	18.85	1.80	-28.60	11.31	A	A	A	4.72
67	30.64	0.61	16.06	6.38	A	A	A	2.65
72	26.4	2.1	0.00	10.00	A	A	A	0.00
73	27.6	1.5	4.55	8.14	A	A	A	0.75
77	18.4	3.0	-30.30	17.39	N	A	N	5.00
78	18.5	2.4	-29.92	14.32	A	A	A	4.94
79	28.7	0.33	8.71	6.17	A	A	A	1.44
81	32.30	2.39	22.35	9.56	A	A	A	3.69
82	31.1	0.36	17.80	6.17	A	N	W	2.94
84	26.4	1.9	0.00	9.41	A	A	A	0.00
86	26.3	1.8	-0.38	9.14	A	A	A	0.06
87	32.4	0.7	22.73	6.43	A	N	W	3.75
90	27.4	1.4	3.79	7.93	A	A	A	0.62
97	25.57	3.32	-3.14	14.33	A	A	A	0.52



TABLE 4. Evaluation Results for Sr-90 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
102	26.68	1.63	1.06	8.61	A	A	A	0.18

# Reported Results for Cs-134 Determination in Sample 1

TABLE 5. Target values

Parameter	Value
Target Value, Bq/kg	15.9
UNC, Bq/kg	1
MARB, %	20

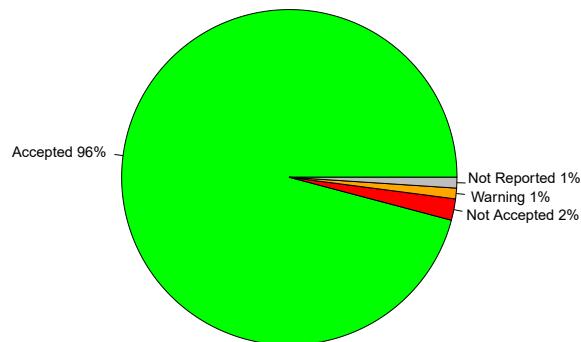


FIGURE 5. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

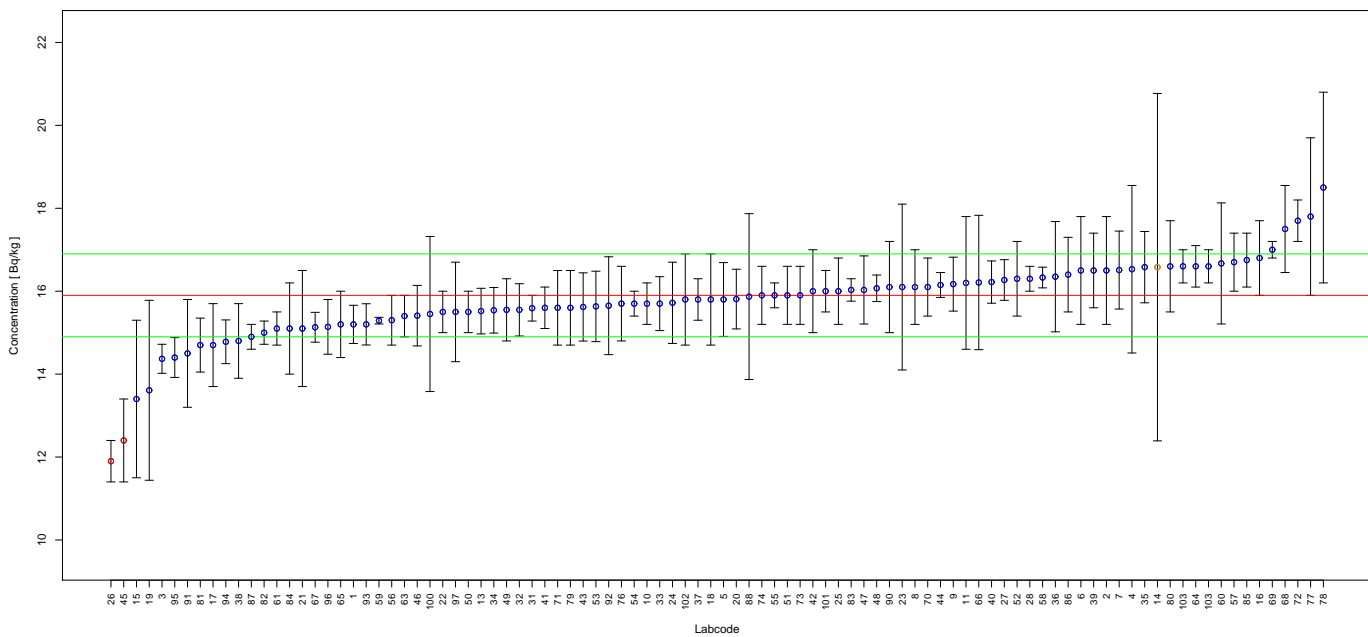


FIGURE 6. Reported results and evaluation parameters for Cs-134. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 6. Evaluation Results for Cs-134 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	15.2	0.46	-4.40	6.98	A	A	A	0.70
2	16.5	1.3	3.77	10.08	A	A	A	0.60
3	14.37	0.35	-9.62	6.74	A	A	A	1.53
4	16.53	2.02	3.96	13.74	A	A	A	0.63
5	15.8	0.89	-0.63	8.44	A	A	A	0.10
6	16.5	1.3	3.77	10.08	A	A	A	0.60
7	16.51	0.94	3.84	8.48	A	A	A	0.61
8	16.1	0.9	1.26	8.41	A	A	A	0.20
9	16.17	0.65	1.70	7.46	A	A	A	0.27
10	15.7	0.5	-1.26	7.05	A	A	A	0.20
11	16.2	1.6	1.89	11.71	A	A	A	0.30
13	15.52	0.55	-2.39	7.22	A	A	A	0.38
14	16.58	4.19	4.28	26.04	A	N	W	0.68
15	13.4	1.9	-15.72	15.51	A	A	A	2.50
16	16.8	0.9	5.66	8.26	A	A	A	0.90
17	14.7	1.0	-7.55	9.26	A	A	A	1.20
18	15.8	1.1	-0.63	9.38	A	A	A	0.10
19	13.61	2.17	-14.40	17.14	A	A	A	2.29
20	15.81	0.72	-0.57	7.76	A	A	A	0.09
21	15.1	1.4	-5.03	11.20	A	A	A	0.80
22	15.5	0.5	-2.52	7.07	A	A	A	0.40
23	16.1	2.0	1.26	13.92	A	A	A	0.20
24	15.72	0.98	-1.13	8.86	A	A	A	0.18
25	16.0	0.8	0.63	8.03	A	A	A	0.10
26	11.9	0.5	-25.16	7.56	N	N	N	4.00
27	16.27	0.49	2.33	6.97	A	A	A	0.37
28	16.3	0.3	2.52	6.55	A	A	A	0.40
31	15.59	0.31	-1.95	6.60	A	A	A	0.31
32	15.55	0.63	-2.20	7.48	A	A	A	0.35
33	15.7	0.65	-1.26	7.53	A	A	A	0.20
34	15.54	0.55	-2.26	7.22	A	A	A	0.36
35	16.58	0.86	4.28	8.15	A	A	A	0.68
36	16.35	1.33	2.83	10.28	A	A	A	0.45
37	15.8	0.5	-0.63	7.04	A	A	A	0.10
38	14.8	0.9	-6.92	8.75	A	A	A	1.10
39	16.5	0.9	3.77	8.33	A	A	A	0.60
40	16.22	0.51	2.01	7.03	A	A	A	0.32
41	15.6	0.5	-1.89	7.06	A	A	A	0.30
42	16.0	1.0	0.63	8.87	A	A	A	0.10
43	15.62	0.8225	-1.76	8.20	A	A	A	0.28
44	16.15	0.3	1.57	6.56	A	A	A	0.25
45	12.4	1.0	-22.01	10.23	N	A	N	3.50
46	15.41	0.73	-3.08	7.87	A	A	A	0.49
47	16.03	0.821	0.82	8.11	A	A	A	0.13
48	16.07	0.32	1.07	6.60	A	A	A	0.17
49	15.55	0.75	-2.20	7.93	A	A	A	0.35
50	15.5	0.5	-2.52	7.07	A	A	A	0.40
51	15.9	0.7	0.00	7.68	A	A	A	0.00
52	16.3	0.9	2.52	8.37	A	A	A	0.40
53	15.633	0.849	-1.68	8.31	A	A	A	0.27
54	15.7	0.3	-1.26	6.57	A	A	A	0.20
55	15.9	0.3	0.00	6.57	A	A	A	0.00
56	15.3	0.6	-3.77	7.41	A	A	A	0.60

TABLE 6. Evaluation Results for Cs-134 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
57	16.7	0.7	5.03	7.56	A	A	A	0.80
58	16.33	0.25	2.70	6.47	A	A	A	0.43
59	15.29	0.08	-3.84	6.31	A	A	A	0.61
60	16.67	1.46	4.84	10.78	A	A	A	0.77
61	15.1	0.4	-5.03	6.82	A	A	A	0.80
63	15.4	0.5	-3.14	7.08	A	A	A	0.50
64	16.6	0.5	4.40	6.97	A	A	A	0.70
65	15.2	0.8	-4.40	8.20	A	A	A	0.70
66	16.21	1.62	1.95	11.81	A	A	A	0.31
67	15.13	0.36	-4.84	6.72	A	A	A	0.77
68	17.5	1.05	10.06	8.69	A	A	A	1.60
69	17	0.2	6.92	6.40	A	A	A	1.10
70	16.1	0.7	1.26	7.65	A	A	A	0.20
71	15.6	0.9	-1.89	8.53	A	A	A	0.30
72	17.7	0.5	11.32	6.89	A	A	A	1.80
73	15.9	0.7	0.00	7.68	A	A	A	0.00
74	15.9	0.7	0.00	7.68	A	A	A	0.00
76	15.7	0.9	-1.26	8.51	A	A	A	0.20
77	17.8	1.9	11.95	12.39	A	A	A	1.90
78	18.5	2.3	16.35	13.93	A	A	A	2.60
79	15.6	0.9	-1.89	8.53	A	A	A	0.30
80	16.6	1.1	4.40	9.14	A	A	A	0.70
81	14.7	0.65	-7.55	7.69	A	A	A	1.20
82	15.0	0.28	-5.66	6.56	A	A	A	0.90
83	16.03	0.27	0.82	6.51	A	A	A	0.13
84	15.1	1.1	-5.03	9.62	A	A	A	0.80
85	16.75	0.65	5.35	7.39	A	A	A	0.85
86	16.4	0.9	3.14	8.35	A	A	A	0.50
87	14.9	0.3	-6.29	6.60	A	A	A	1.00
88	15.87	2.00	-0.19	14.08	A	A	A	0.03
90	16.1	1.1	1.26	9.29	A	A	A	0.20
91	14.5	1.3	-8.81	10.95	A	A	A	1.40
92	15.65	1.18	-1.57	9.82	A	A	A	0.25
93	15.2	0.497	-4.40	7.09	A	A	A	0.70
94	14.78	0.527	-7.04	7.23	A	A	A	1.12
95	14.4	0.48	-9.43	7.12	A	A	A	1.50
96	15.14	0.66	-4.78	7.65	A	A	A	0.76
97	15.5	1.2	-2.52	9.97	A	A	A	0.40
100	15.45	1.87	-2.83	13.64	A	A	A	0.45
101	16.0	0.5	0.63	7.02	A	A	A	0.10
102	15.8	1.1	-0.63	9.38	A	A	A	0.10
103	16.6	0.4	4.40	6.74	A	A	A	0.70

# Reported Results for Cs-137 Determination in Sample 1

TABLE 7. Target values

Parameter	Value
Target Value, Bq/kg	24.2
UNC, Bq/kg	1.5
MARB, %	20

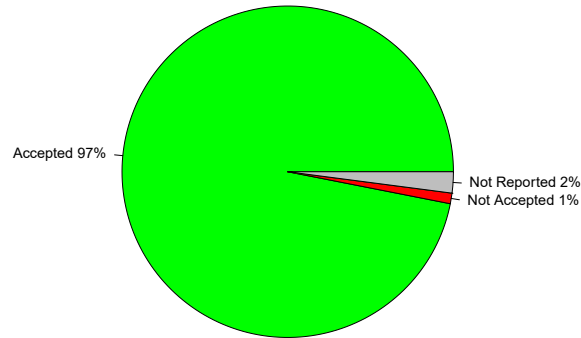


FIGURE 7. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

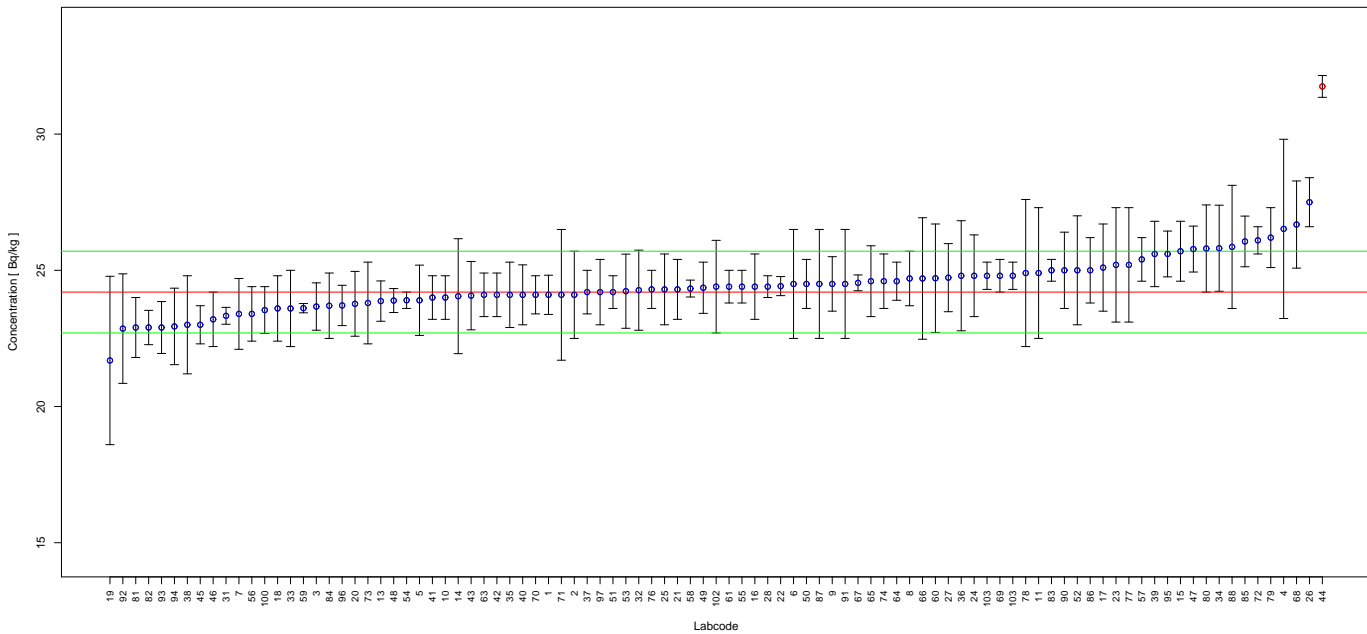


FIGURE 8. Reported results and evaluation parameters for Cs-137. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 8. Evaluation Results for Cs-137 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	24.1	0.72	-0.41	6.88	A	A	A	0.07
2	24.1	1.6	-0.41	9.08	A	A	A	0.07
3	23.67	0.87	-2.19	7.21	A	A	A	0.35
4	26.52	3.29	9.59	13.87	A	A	A	1.55
5	23.9	1.29	-1.24	8.22	A	A	A	0.20
6	24.5	2.0	1.24	10.25	A	A	A	0.20
7	23.4	1.3	-3.31	8.32	A	A	A	0.53
8	24.7	1.0	2.07	7.40	A	A	A	0.33
9	24.5	1.0	1.24	7.42	A	A	A	0.20
10	24.0	0.8	-0.83	7.04	A	A	A	0.13
11	24.9	2.4	2.89	11.46	A	A	A	0.47
13	23.87	0.74	-1.36	6.93	A	A	A	0.22
14	24.05	2.11	-0.62	10.74	A	A	A	0.10
15	25.7	1.1	6.20	7.53	A	A	A	1.00
16	24.4	1.2	0.83	7.91	A	A	A	0.13
17	25.1	1.6	3.72	8.89	A	A	A	0.60
18	23.6	1.2	-2.48	8.02	A	A	A	0.40
19	21.69	3.09	-10.37	15.54	A	A	A	1.67
20	23.77	1.19	-1.78	7.97	A	A	A	0.29
21	24.3	1.1	0.41	7.68	A	A	A	0.07
22	24.42	0.35	0.91	6.36	A	A	A	0.15
23	25.2	2.1	4.13	10.39	A	A	A	0.67
24	24.8	1.5	2.48	8.66	A	A	A	0.40
25	24.3	1.3	0.41	8.19	A	A	A	0.07
26	27.5	0.9	13.64	7.01	A	A	A	2.20
27	24.73	1.25	2.19	8.00	A	A	A	0.35
28	24.4	0.4	0.83	6.41	A	A	A	0.13
31	23.33	0.31	-3.60	6.34	A	A	A	0.58
32	24.27	1.47	0.29	8.67	A	A	A	0.05
33	23.6	1.4	-2.48	8.58	A	A	A	0.40
34	25.81	1.58	6.65	8.71	A	A	A	1.07
35	24.1	1.2	-0.41	7.95	A	A	A	0.07
36	24.8	2.02	2.48	10.24	A	A	A	0.40
37	24.2	0.8	0.00	7.02	A	A	A	0.00
38	23.0	1.8	-4.96	9.98	A	A	A	0.80
39	25.6	1.2	5.79	7.77	A	A	A	0.93
40	24.1	1.1	-0.41	7.70	A	A	A	0.07
41	24.0	0.8	-0.83	7.04	A	A	A	0.13
42	24.1	0.8	-0.41	7.03	A	A	A	0.07
43	24.07	1.2545	-0.54	8.10	A	A	A	0.09
44	31.75	0.4	31.20	6.33	N	N	N	5.03
45	23.0	0.7	-4.96	6.91	A	A	A	0.80
46	23.2	1.0	-4.13	7.55	A	A	A	0.67
47	25.78	0.843	6.53	7.01	A	A	A	1.05
48	23.89	0.44	-1.28	6.47	A	A	A	0.21
49	24.36	0.94	0.66	7.30	A	A	A	0.11
50	24.5	0.9	1.24	7.21	A	A	A	0.20
51	24.2	0.6	0.00	6.68	A	A	A	0.00
52	25	2	3.31	10.12	A	A	A	0.53
53	24.233	1.361	0.14	8.36	A	A	A	0.02
54	23.9	0.3	-1.24	6.32	A	A	A	0.20
55	24.4	0.6	0.83	6.67	A	A	A	0.13
56	23.4	1.0	-3.31	7.53	A	A	A	0.53

TABLE 8. Evaluation Results for Cs-137 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
57	25.4	0.8	4.96	6.95	A	A	A	0.80
58	24.33	0.31	0.54	6.33	A	A	A	0.09
59	23.61	0.17	-2.44	6.24	A	A	A	0.39
60	24.71	1.99	2.11	10.16	A	A	A	0.34
61	24.4	0.6	0.83	6.67	A	A	A	0.13
63	24.1	0.8	-0.41	7.03	A	A	A	0.07
64	24.6	0.7	1.65	6.82	A	A	A	0.27
65	24.6	1.3	1.65	8.15	A	A	A	0.27
66	24.70	2.23	2.07	10.95	A	A	A	0.33
67	24.54	0.29	1.40	6.31	A	A	A	0.23
68	26.68	1.6	10.25	8.62	A	A	A	1.65
69	24.8	0.6	2.48	6.65	A	A	A	0.40
70	24.1	0.7	-0.41	6.85	A	A	A	0.07
71	24.1	2.4	-0.41	11.73	A	A	A	0.07
72	26.1	0.5	7.85	6.49	A	A	A	1.27
73	23.8	1.5	-1.65	8.84	A	A	A	0.27
74	24.6	1.0	1.65	7.41	A	A	A	0.27
76	24.3	0.7	0.41	6.84	A	A	A	0.07
77	25.2	2.1	4.13	10.39	A	A	A	0.67
78	24.9	2.7	2.89	12.49	A	A	A	0.47
79	26.2	1.1	8.26	7.49	A	A	A	1.33
80	25.8	1.6	6.61	8.77	A	A	A	1.07
81	22.9	1.1	-5.37	7.84	A	A	A	0.87
82	22.9	0.63	-5.37	6.78	A	A	A	0.87
83	25.0	0.4	3.31	6.40	A	A	A	0.53
84	23.7	1.2	-2.07	8.00	A	A	A	0.33
85	26.06	0.93	7.69	7.15	A	A	A	1.24
86	25.0	1.2	3.31	7.84	A	A	A	0.53
87	24.5	2.0	1.24	10.25	A	A	A	0.20
88	25.86	2.26	6.86	10.71	A	A	A	1.11
90	25.0	1.4	3.31	8.35	A	A	A	0.53
91	24.5	2.0	1.24	10.25	A	A	A	0.20
92	22.86	2.01	-5.54	10.76	A	A	A	0.89
93	22.9	0.952	-5.37	7.46	A	A	A	0.87
94	22.94	1.404	-5.21	8.71	A	A	A	0.84
95	25.6	0.84	5.79	7.01	A	A	A	0.93
96	23.71	0.74	-2.02	6.94	A	A	A	0.33
97	24.2	1.2	0.00	7.94	A	A	A	0.00
100	23.54	0.86	-2.73	7.19	A	A	A	0.44
102	24.4	1.7	0.83	9.33	A	A	A	0.13
103	24.8	0.5	2.48	6.52	A	A	A	0.40

# Reported Results for Po-210 Determination in Sample 1

TABLE 9. Target values

Parameter	Value
Target Value, Bq/kg	31.6
UNC, Bq/kg	1.9
MARB, %	30

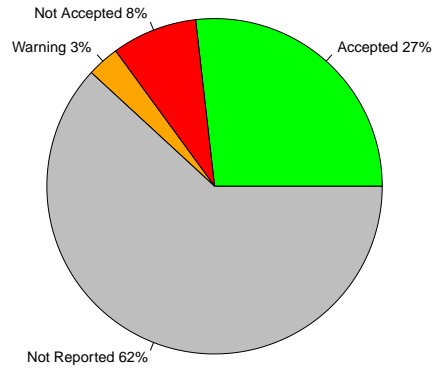


FIGURE 9. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

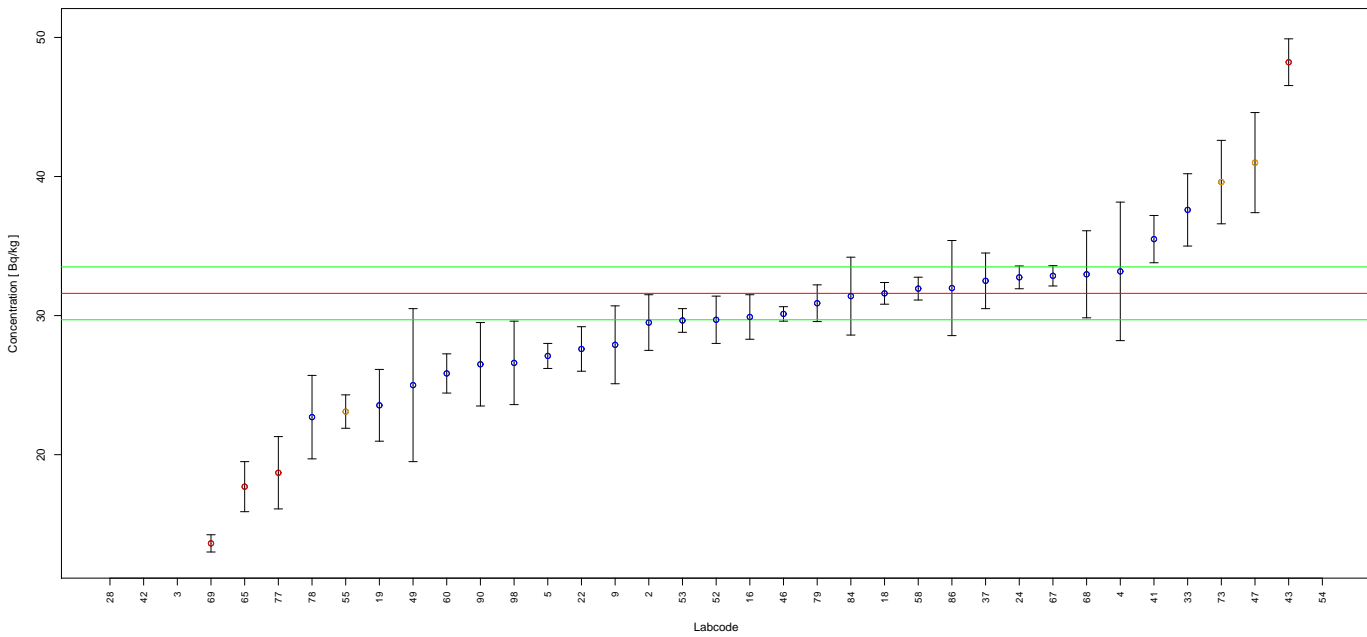


FIGURE 10. Reported results and evaluation parameters for Po-210. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.



TABLE 10. Evaluation Results for Po-210 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
2	29.5	2.0	-6.65	9.06	A	A	A	1.11
3	9.54	1.25	-69.81	14.42	N	N	N	11.61
4	33.18	4.98	5.00	16.17	A	A	A	0.83
5	27.1	0.9	-14.24	6.87	A	A	A	2.37
9	27.9	2.8	-11.71	11.70	A	A	A	1.95
16	29.9	1.6	-5.38	8.05	A	A	A	0.89
18	31.60	0.78	0.00	6.50	A	A	A	0.00
19	23.55	2.58	-25.47	12.50	A	A	A	4.24
22	27.6	1.6	-12.66	8.35	A	A	A	2.11
24	32.75	0.82	3.64	6.51	A	A	A	0.61
28	3.5	0.3	-88.92	10.47	N	N	N	14.79
33	37.6	2.6	18.99	9.16	A	A	A	3.16
37	32.5	2.0	2.85	8.60	A	A	A	0.47
41	35.5	1.7	12.34	7.69	A	A	A	2.05
42	8.4	0.8	-73.42	11.26	N	N	N	12.21
43	48.22	1.68	52.59	6.95	N	N	N	8.75
46	30.12	0.52	-4.68	6.26	A	A	A	0.78
47	41	3.6	29.75	10.64	A	N	W	4.95
49	25	5.5	-20.89	22.81	A	A	A	3.47
52	29.7	1.7	-6.01	8.30	A	A	A	1.00
53	29.65	0.85	-6.17	6.66	A	A	A	1.03
54	101.9	1.7	222.47	6.24	N	N	N	37.00
55	23.1	1.2	-26.90	7.95	A	N	W	4.47
58	31.94	0.82	1.08	6.54	A	A	A	0.18
60	25.84	1.41	-18.23	8.12	A	A	A	3.03
65	17.7	1.8	-43.99	11.81	N	N	N	7.32
67	32.86	0.73	3.99	6.41	A	A	A	0.66
68	32.97	3.13	4.34	11.24	A	A	A	0.72
69	13.622	0.62	-56.89	7.54	N	N	N	9.46
73	39.6	3	25.32	9.67	A	N	W	4.21
77	18.7	2.6	-40.82	15.15	N	N	N	6.79
78	22.7	3.0	-28.16	14.52	A	A	A	4.68
79	30.89	1.32	-2.25	7.38	A	A	A	0.37
84	31.4	2.8	-0.63	10.75	A	A	A	0.11
86	31.98	3.42	1.20	12.27	A	A	A	0.20
90	26.5	3.0	-16.14	12.82	A	A	A	2.68
98	26.6	3.0	-15.82	12.78	A	A	A	2.63

# Reported Results for Pb-210 Determination in Sample 1

TABLE 11. Target values

Parameter	Value
Target Value, Bq/kg	31.3
UNC, Bq/kg	1.9
MARB, %	30

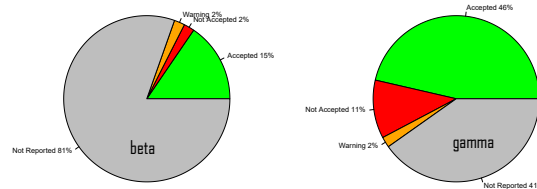


FIGURE 11. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

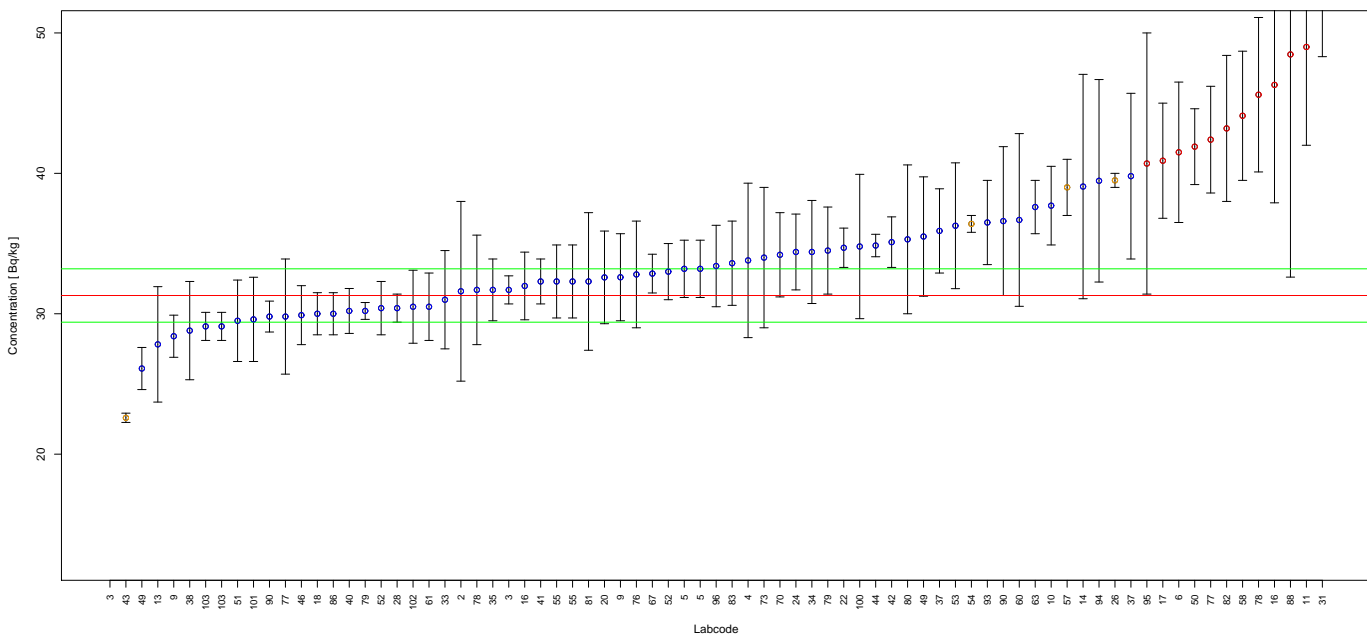


FIGURE 12. Reported results and evaluation parameters for Pb-210. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 12. Evaluation Results for Pb-210 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
2	31.6	6.4	0.96	21.14	A	A	A	0.16
3	7.52	0.63	-75.97	10.35	N	N	N	12.52
3	31.7	1.0	1.28	6.84	A	A	A	0.21
4	33.80	5.50	7.99	17.37	A	A	A	1.32
5	33.2	2.04	6.07	8.64	A	A	A	1.00
5	33.2	2.04	6.07	8.64	A	A	A	1.00
6	41.5	5.0	32.59	13.49	N	A	N	5.37
9	32.6	3.1	4.15	11.28	A	A	A	0.68

TABLE 12. Evaluation Results for Pb-210 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
9	28.4	1.5	-9.27	8.05	A	A	A	1.53
10	37.7	2.8	20.45	9.59	A	A	A	3.37
11	49	7	56.55	15.52	N	N	N	9.32
13	27.82	4.11	-11.12	15.97	A	A	A	1.83
14	39.06	7.99	24.79	21.34	A	A	A	4.08
16	31.98	2.41	2.17	9.68	A	A	A	0.36
16	46.3	8.4	47.92	19.13	N	A	N	7.89
17	40.9	4.1	30.67	11.72	N	N	N	5.05
18	30.0	1.5	-4.15	7.86	A	A	A	0.68
20	32.59	3.3	4.12	11.81	A	A	A	0.68
22	34.7	1.4	10.86	7.29	A	A	A	1.79
24	34.4	2.7	9.90	9.92	A	A	A	1.63
26	39.5	0.5	26.20	6.20	A	N	W	4.32
28	30.4	1.0	-2.88	6.90	A	A	A	0.47
31	60.85	12.54	94.41	21.48	N	N	N	15.55
33	31	3.5	-0.96	12.82	A	A	A	0.16
34	34.40	3.67	9.90	12.27	A	A	A	1.63
35	31.7	2.2	1.28	9.22	A	A	A	0.21
37	35.9	3.0	14.70	10.33	A	A	A	2.42
37	39.8	5.9	27.16	16.02	A	A	A	4.47
38	28.8	3.5	-7.99	13.58	A	A	A	1.32
40	30.2	1.6	-3.51	8.06	A	A	A	0.58
41	32.3	1.6	3.19	7.83	A	A	A	0.53
42	35.1	1.8	12.14	7.95	A	A	A	2.00
43	22.59	0.33	-27.83	6.24	A	N	W	4.58
44	34.86	0.8	11.37	6.49	A	A	A	1.87
46	29.9	2.1	-4.47	9.28	A	A	A	0.74
49	26.1	1.5	-16.61	8.36	A	A	A	2.74
49	35.5	4.25	13.42	13.42	A	A	A	2.21
50	41.9	2.7	33.87	8.85	N	N	N	5.58
51	29.5	2.9	-5.75	11.55	A	A	A	0.95
52	30.4	1.9	-2.88	8.71	A	A	A	0.47
52	33	2	5.43	8.58	A	A	A	0.89
53	36.267	4.480	15.87	13.76	A	A	A	2.61
54	36.4	0.6	16.29	6.29	A	N	W	2.68
55	32.3	2.6	3.19	10.08	A	A	A	0.53
55	32.3	2.6	3.19	10.08	A	A	A	0.53
57	39	2	24.60	7.95	A	N	W	4.05
58	44.1	4.6	40.89	12.07	N	N	N	6.74
60	36.68	6.15	17.19	17.83	A	A	A	2.83
61	30.5	2.4	-2.56	9.94	A	A	A	0.42
63	37.6	1.9	20.13	7.90	A	A	A	3.32
67	32.86	1.38	4.98	7.38	A	A	A	0.82
70	34.2	3.0	9.27	10.67	A	A	A	1.53
73	34.0	5.0	8.63	15.91	A	A	A	1.42
76	32.8	3.8	4.79	13.08	A	A	A	0.79
77	29.8	4.1	-4.79	15.04	A	A	A	0.79
77	42.4	3.8	35.46	10.82	N	N	N	5.84
78	31.7	3.9	1.28	13.72	A	A	A	0.21
78	45.6	5.5	45.69	13.50	N	N	N	7.53
79	30.20	0.60	-3.51	6.39	A	A	A	0.58
79	34.5	3.1	10.22	10.84	A	A	A	1.68
80	35.3	5.3	12.78	16.19	A	A	A	2.11
81	32.3	4.9	3.19	16.34	A	A	A	0.53

TABLE 12. Evaluation Results for Pb-210 in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
82	43.2	5.20	38.02	13.48	N	N	N	6.26
83	33.6	3.0	7.35	10.80	A	A	A	1.21
86	30.0	1.5	-4.15	7.86	A	A	A	0.68
88	48.47	15.86	54.86	33.28	N	N	N	9.04
90	29.8	1.1	-4.79	7.10	A	A	A	0.79
90	36.6	5.3	16.93	15.70	A	A	A	2.79
93	36.5	3.00	16.61	10.22	A	A	A	2.74
94	39.47	7.21	26.10	19.25	A	A	A	4.30
95	40.7	9.3	30.03	23.64	N	A	N	4.95
96	33.4	2.9	6.71	10.59	A	A	A	1.11
100	34.79	5.14	11.15	15.97	A	A	A	1.84
101	29.6	3.0	-5.43	11.81	A	A	A	0.89
102	30.5	2.6	-2.56	10.47	A	A	A	0.42
103	29.1	1	-7.03	6.98	A	A	A	1.16

## Reported Results for H-3 Determination in Sample 2

TABLE 13. Target values

Parameter	Value
Target Value, Bq/kg	10.8
UNC, Bq/kg	0.6
MARB, %	30

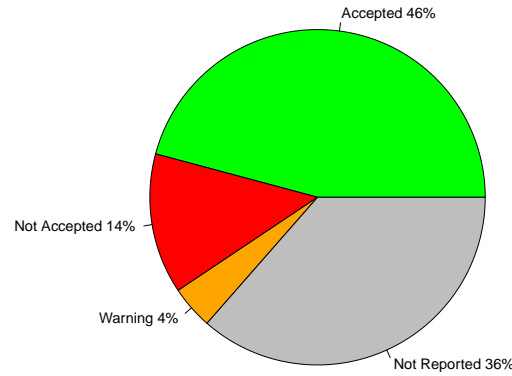


FIGURE 13. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

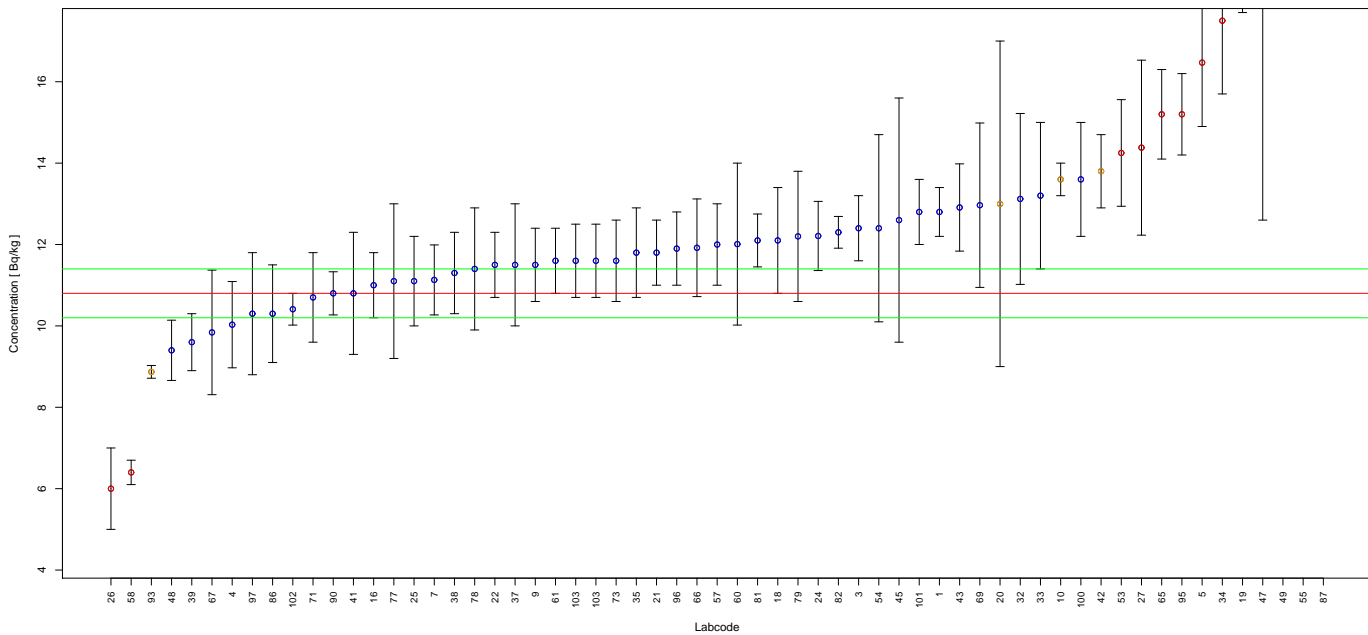


FIGURE 14. Reported results and evaluation parameters for H-3. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 14. Evaluation Results for H-3 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	12.8	0.6	18.52	7.27	A	A	A	3.33
3	12.4	0.8	14.81	8.51	A	A	A	2.67
4	10.03	1.06	-7.13	11.94	A	A	A	1.28
5	16.47	1.57	52.50	11.03	N	N	N	9.45
7	11.13	0.86	3.06	9.52	A	A	A	0.55
9	11.50	0.90	6.48	9.60	A	A	A	1.17
10	13.6	0.4	25.93	6.29	A	N	W	4.67
16	11.0	0.8	1.85	9.15	A	A	A	0.33
18	12.1	1.3	12.04	12.10	A	A	A	2.17
19	19.68	1.98	82.22	11.49	N	N	N	14.80
20	13	4	20.37	31.27	A	N	W	3.67
21	11.8	0.8	9.26	8.77	A	A	A	1.67
22	11.5	0.8	6.48	8.90	A	A	A	1.17
24	12.21	0.85	13.06	8.91	A	A	A	2.35
25	11.1	1.1	2.78	11.36	A	A	A	0.50
26	6	1	-44.44	17.57	N	A	N	8.00
27	14.38	2.15	33.15	15.95	N	A	N	5.97
32	13.12	2.10	21.48	16.94	A	A	A	3.87
33	13.2	1.8	22.22	14.72	A	A	A	4.00
34	17.5	1.8	62.04	11.69	N	N	N	11.17
35	11.8	1.1	9.26	10.85	A	A	A	1.67
37	11.5	1.5	6.48	14.18	A	A	A	1.17
38	11.3	1.0	4.63	10.45	A	A	A	0.83
39	9.6	0.7	-11.11	9.17	A	A	A	2.00
41	10.8	1.5	0.00	14.96	A	A	A	0.00
42	13.8	0.9	27.78	8.57	A	N	W	5.00
43	12.91	1.072	19.54	9.99	A	A	A	3.52
45	12.6	3.0	16.67	24.45	A	A	A	3.00
47	23.2	10.6	114.81	46.03	N	N	N	20.67
48	9.4	0.74	-12.96	9.64	A	A	A	2.33
49	32	7	196.30	22.57	N	N	N	35.33
53	14.25	1.31	31.94	10.74	N	N	N	5.75
54	12.4	2.3	14.81	19.36	A	A	A	2.67
55	45	7	316.67	16.52	N	N	N	57.00
57	12	1	11.11	10.02	A	A	A	2.00
58	6.4	0.3	-40.74	7.27	N	N	N	7.33
60	12.01	1.99	11.20	17.48	A	A	A	2.02
61	11.6	0.8	7.41	8.86	A	A	A	1.33
65	15.2	1.1	40.74	9.12	N	N	N	7.33
66	11.92	1.20	10.37	11.50	A	A	A	1.87
67	9.84	1.53	-8.89	16.51	A	A	A	1.60
69	12.966	2.02	20.06	16.54	A	A	A	3.61
71	10.7	1.1	-0.93	11.69	A	A	A	0.17
73	11.6	1	7.41	10.26	A	A	A	1.33
77	11.1	1.9	2.78	18.00	A	A	A	0.50
78	11.4	1.5	5.56	14.28	A	A	A	1.00
79	12.2	1.6	12.96	14.24	A	A	A	2.33
81	12.10	0.65	12.04	7.73	A	A	A	2.17
82	12.3	0.39	13.89	6.40	A	A	A	2.50
86	10.3	1.2	-4.63	12.91	A	A	A	0.83
87	67.2	5.0	522.22	9.29	N	N	N	94.00
90	10.8	0.53	0.00	7.41	A	A	A	0.00
93	8.87	0.156	-17.87	5.83	A	N	W	3.22

TABLE 14. Evaluation Results for H-3 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
95	15.2	1.0	40.74	8.61	N	N	N	7.33
96	11.9	0.9	10.19	9.38	A	A	A	1.83
97	10.3	1.5	-4.63	15.59	A	A	A	0.83
100	13.6	1.4	25.93	11.70	A	A	A	4.67
101	12.8	0.8	18.52	8.36	A	A	A	3.33
102	10.41	0.39	-3.61	6.70	A	A	A	0.65
103	11.6	0.9	7.41	9.54	A	A	A	1.33

## Reported Results for Sr-90 Determination in Sample 2

TABLE 15. Target values

Parameter	Value
Target Value, Bq/kg	7.42
UNC, Bq/kg	0.45
MARB, %	30

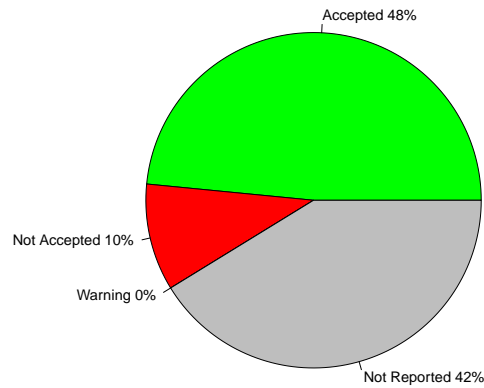


FIGURE 15. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

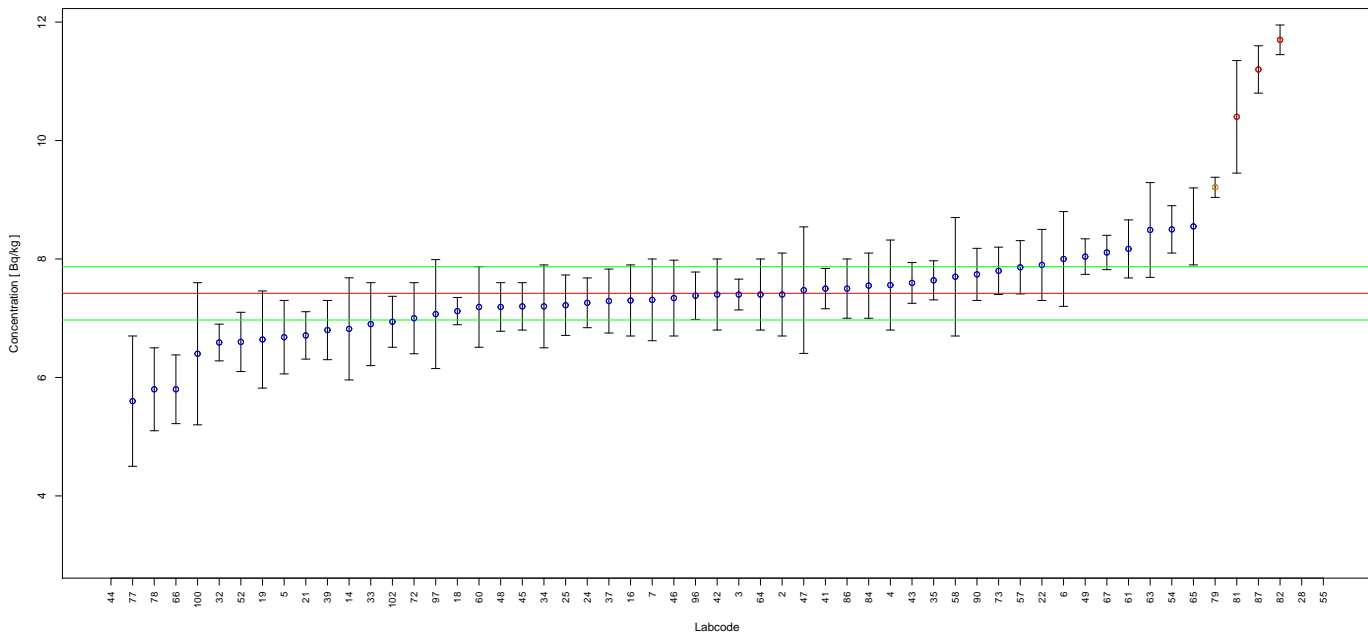


FIGURE 16. Reported results and evaluation parameters for Sr-90. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.



TABLE 16. Evaluation Results for Sr-90 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
2	7.4	0.7	-0.27	11.24	A	A	A	0.04
3	7.40	0.26	-0.27	7.01	A	A	A	0.04
4	7.56	0.76	1.89	11.74	A	A	A	0.31
5	6.68	0.62	-9.97	11.09	A	A	A	1.64
6	8.0	0.8	7.82	11.70	A	A	A	1.29
7	7.31	0.69	-1.48	11.22	A	A	A	0.24
14	6.820	0.862	-8.09	14.02	A	A	A	1.33
16	7.3	0.6	-1.62	10.21	A	A	A	0.27
18	7.12	0.23	-4.04	6.87	A	A	A	0.67
19	6.64	0.82	-10.51	13.76	A	A	A	1.73
21	6.71	0.40	-9.57	8.50	A	A	A	1.58
22	7.9	0.6	6.47	9.72	A	A	A	1.07
24	7.26	0.42	-2.16	8.38	A	A	A	0.36
25	7.22	0.51	-2.70	9.31	A	A	A	0.44
28	14.78	0.48	99.19	6.88	N	N	N	16.36
32	6.59	0.31	-11.19	7.68	A	A	A	1.84
33	6.9	0.7	-7.01	11.82	A	A	A	1.16
34	7.2	0.7	-2.96	11.46	A	A	A	0.49
35	7.64	0.33	2.96	7.45	A	A	A	0.49
37	7.29	0.54	-1.75	9.57	A	A	A	0.29
39	6.8	0.5	-8.36	9.53	A	A	A	1.38
41	7.50	0.34	1.08	7.57	A	A	A	0.18
42	7.4	0.6	-0.27	10.13	A	A	A	0.04
43	7.596	0.344	2.37	7.57	A	A	A	0.39
44	1.77	0.3	-76.15	18.00	N	N	N	12.56
45	7.2	0.4	-2.96	8.22	A	A	A	0.49
46	7.34	0.64	-1.08	10.62	A	A	A	0.18
47	7.474	1.068	0.73	15.52	A	A	A	0.12
48	7.19	0.41	-3.10	8.32	A	A	A	0.51
49	8.04	0.30	8.36	7.12	A	A	A	1.38
52	6.6	0.5	-11.05	9.70	A	A	A	1.82
54	8.5	0.4	14.56	7.68	A	A	A	2.40
55	25.1	4.2	238.27	17.80	N	N	N	39.29
57	7.86	0.45	5.93	8.34	A	A	A	0.98
58	7.70	1.00	3.77	14.33	A	A	A	0.62
60	7.19	0.68	-3.10	11.24	A	A	A	0.51
61	8.17	0.49	10.11	8.53	A	A	A	1.67
63	8.49	0.80	14.42	11.21	A	A	A	2.38
64	7.4	0.6	-0.27	10.13	A	A	A	0.04
65	8.55	0.65	15.23	9.73	A	A	A	2.51
66	5.80	0.58	-21.83	11.70	A	A	A	3.60
67	8.11	0.29	9.30	7.04	A	A	A	1.53
72	7.0	0.6	-5.66	10.50	A	A	A	0.93
73	7.8	0.4	5.12	7.94	A	A	A	0.84
77	5.6	1.1	-24.53	20.56	A	A	A	4.04
78	5.8	0.7	-21.83	13.51	A	A	A	3.60
79	9.21	0.17	24.12	6.34	A	N	W	3.98
81	10.40	0.95	40.16	10.96	N	N	N	6.62
82	11.7	0.25	57.68	6.43	N	N	N	9.51
84	7.55	0.55	1.75	9.48	A	A	A	0.29
86	7.5	0.5	1.08	9.01	A	A	A	0.18
87	11.2	0.4	50.94	7.04	N	N	N	8.40
90	7.74	0.44	4.31	8.31	A	A	A	0.71

TABLE 16. Evaluation Results for Sr-90 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
96	7.38	0.4	-0.54	8.13	A	A	A	0.09
97	7.07	0.92	-4.72	14.36	A	A	A	0.78
100	6.4	1.2	-13.75	19.71	A	A	A	2.27
102	6.94	0.43	-6.47	8.67	A	A	A	1.07

## Reported Results for Cs-137 Determination in Sample 2

TABLE 17. Target values

Parameter	Value
Target Value, Bq/kg	8.36
UNC, Bq/kg	0.5
MARB, %	20

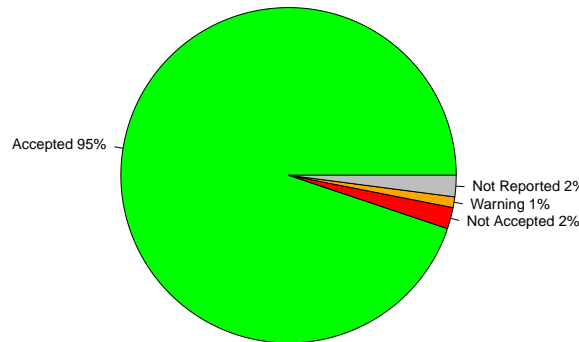


FIGURE 17. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

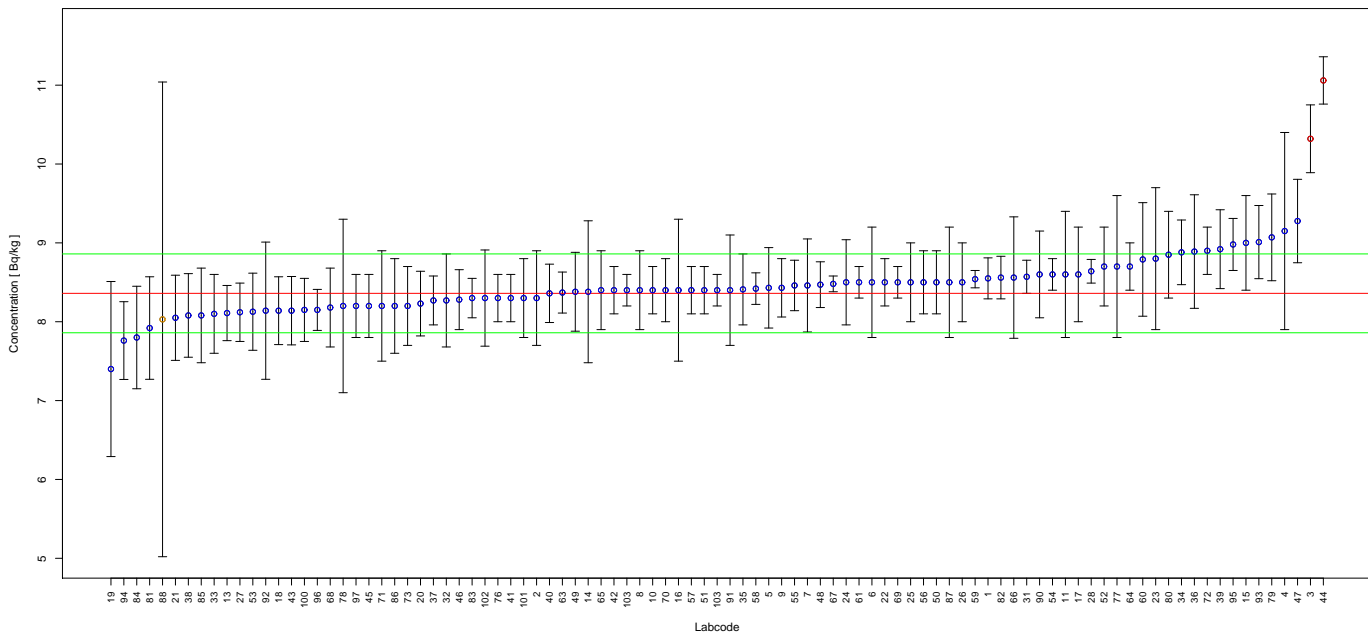


FIGURE 18. Reported results and evaluation parameters for Cs-137. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 18. Evaluation Results for Cs-137 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	8.55	0.26	2.27	6.71	A	A	A	0.38
2	8.3	0.6	-0.72	9.38	A	A	A	0.12
3	10.32	0.43	23.44	7.29	N	N	N	3.92
4	9.15	1.25	9.45	14.91	A	A	A	1.58
5	8.43	0.51	0.84	8.51	A	A	A	0.14
6	8.5	0.7	1.67	10.18	A	A	A	0.28
7	8.46	0.59	1.20	9.19	A	A	A	0.20
8	8.4	0.5	0.48	8.44	A	A	A	0.08
9	8.43	0.37	0.84	7.42	A	A	A	0.14
10	8.4	0.3	0.48	6.97	A	A	A	0.08
11	8.6	0.8	2.87	11.06	A	A	A	0.48
13	8.11	0.35	-2.99	7.38	A	A	A	0.50
14	8.38	0.90	0.24	12.29	A	A	A	0.04
15	9.0	0.6	7.66	8.96	A	A	A	1.28
16	8.4	0.9	0.48	12.27	A	A	A	0.08
17	8.6	0.6	2.87	9.19	A	A	A	0.48
18	8.14	0.43	-2.63	7.98	A	A	A	0.44
19	7.40	1.11	-11.48	16.15	A	A	A	1.92
20	8.23	0.41	-1.56	7.78	A	A	A	0.26
21	8.05	0.54	-3.71	8.99	A	A	A	0.62
22	8.5	0.3	1.67	6.94	A	A	A	0.28
23	8.8	0.9	5.26	11.85	A	A	A	0.88
24	8.50	0.54	1.67	8.73	A	A	A	0.28
25	8.5	0.5	1.67	8.39	A	A	A	0.28
26	8.5	0.5	1.67	8.39	A	A	A	0.28
27	8.12	0.37	-2.87	7.52	A	A	A	0.48
28	8.64	0.15	3.35	6.23	A	A	A	0.56
31	8.57	0.21	2.51	6.46	A	A	A	0.42
32	8.27	0.59	-1.08	9.31	A	A	A	0.18
33	8.1	0.5	-3.11	8.60	A	A	A	0.52
34	8.88	0.41	6.22	7.56	A	A	A	1.04
35	8.41	0.45	0.60	8.03	A	A	A	0.10
36	8.89	0.72	6.34	10.07	A	A	A	1.06
37	8.27	0.31	-1.08	7.06	A	A	A	0.18
38	8.08	0.53	-3.35	8.88	A	A	A	0.56
39	8.92	0.50	6.70	8.20	A	A	A	1.12
40	8.36	0.37	0.00	7.44	A	A	A	0.00
41	8.3	0.3	-0.72	6.99	A	A	A	0.12
42	8.4	0.3	0.48	6.97	A	A	A	0.08
43	8.14	0.4336	-2.63	8.01	A	A	A	0.44
44	11.06	0.3	32.30	6.57	N	N	N	5.40
45	8.2	0.4	-1.91	7.72	A	A	A	0.32
46	8.28	0.38	-0.96	7.54	A	A	A	0.16
47	9.277	0.529	10.97	8.26	A	A	A	1.83
48	8.47	0.29	1.32	6.89	A	A	A	0.22
49	8.38	0.5	0.24	8.45	A	A	A	0.04
50	8.5	0.4	1.67	7.61	A	A	A	0.28
51	8.4	0.3	0.48	6.97	A	A	A	0.08
52	8.7	0.5	4.07	8.29	A	A	A	0.68
53	8.127	0.489	-2.79	8.48	A	A	A	0.47
54	8.6	0.2	2.87	6.42	A	A	A	0.48
55	8.46	0.32	1.20	7.08	A	A	A	0.20
56	8.5	0.4	1.67	7.61	A	A	A	0.28

TABLE 18. Evaluation Results for Cs-137 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
57	8.4	0.3	0.48	6.97	A	A	A	0.08
58	8.42	0.20	0.72	6.44	A	A	A	0.12
59	8.54	0.11	2.15	6.12	A	A	A	0.36
60	8.79	0.72	5.14	10.14	A	A	A	0.86
61	8.5	0.2	1.67	6.43	A	A	A	0.28
63	8.37	0.26	0.12	6.74	A	A	A	0.02
64	8.7	0.3	4.07	6.90	A	A	A	0.68
65	8.40	0.50	0.48	8.44	A	A	A	0.08
66	8.56	0.77	2.39	10.80	A	A	A	0.40
67	8.48	0.10	1.44	6.10	A	A	A	0.24
68	8.18	0.5	-2.15	8.55	A	A	A	0.36
69	8.5	0.2	1.67	6.43	A	A	A	0.28
70	8.4	0.4	0.48	7.65	A	A	A	0.08
71	8.2	0.7	-1.91	10.42	A	A	A	0.32
72	8.9	0.3	6.46	6.87	A	A	A	1.08
73	8.2	0.5	-1.91	8.54	A	A	A	0.32
76	8.3	0.3	-0.72	6.99	A	A	A	0.12
77	8.7	0.9	4.07	11.95	A	A	A	0.68
78	8.2	1.1	-1.91	14.69	A	A	A	0.32
79	9.07	0.55	8.49	8.52	A	A	A	1.42
80	8.85	0.55	5.86	8.63	A	A	A	0.98
81	7.92	0.65	-5.26	10.16	A	A	A	0.88
82	8.56	0.27	2.39	6.76	A	A	A	0.40
83	8.30	0.25	-0.72	6.70	A	A	A	0.12
84	7.8	0.65	-6.70	10.26	A	A	A	1.12
85	8.08	0.60	-3.35	9.53	A	A	A	0.56
86	8.2	0.6	-1.91	9.45	A	A	A	0.32
87	8.5	0.7	1.67	10.18	A	A	A	0.28
88	8.03	3.01	-3.95	37.96	A	N	W	0.66
90	8.60	0.55	2.87	8.76	A	A	A	0.48
91	8.4	0.7	0.48	10.26	A	A	A	0.08
92	8.14	0.87	-2.63	12.25	A	A	A	0.44
93	9.01	0.464	7.78	7.89	A	A	A	1.30
94	7.761	0.493	-7.17	8.72	A	A	A	1.20
95	8.98	0.33	7.42	7.02	A	A	A	1.24
96	8.15	0.26	-2.51	6.78	A	A	A	0.42
97	8.2	0.4	-1.91	7.72	A	A	A	0.32
100	8.15	0.40	-2.51	7.74	A	A	A	0.42
101	8.3	0.5	-0.72	8.49	A	A	A	0.12
102	8.30	0.61	-0.72	9.48	A	A	A	0.12
103	8.4	0.2	0.48	6.44	A	A	A	0.08

## Reported Results for Po-210 Determination in Sample 2

TABLE 19. Target values

Parameter	Value
Target Value, Bq/kg	5.29
UNC, Bq/kg	0.32
MARB, %	30

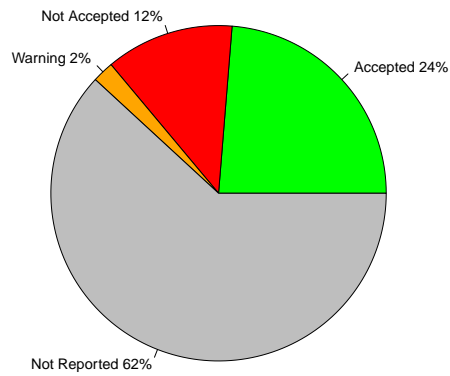


FIGURE 19. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

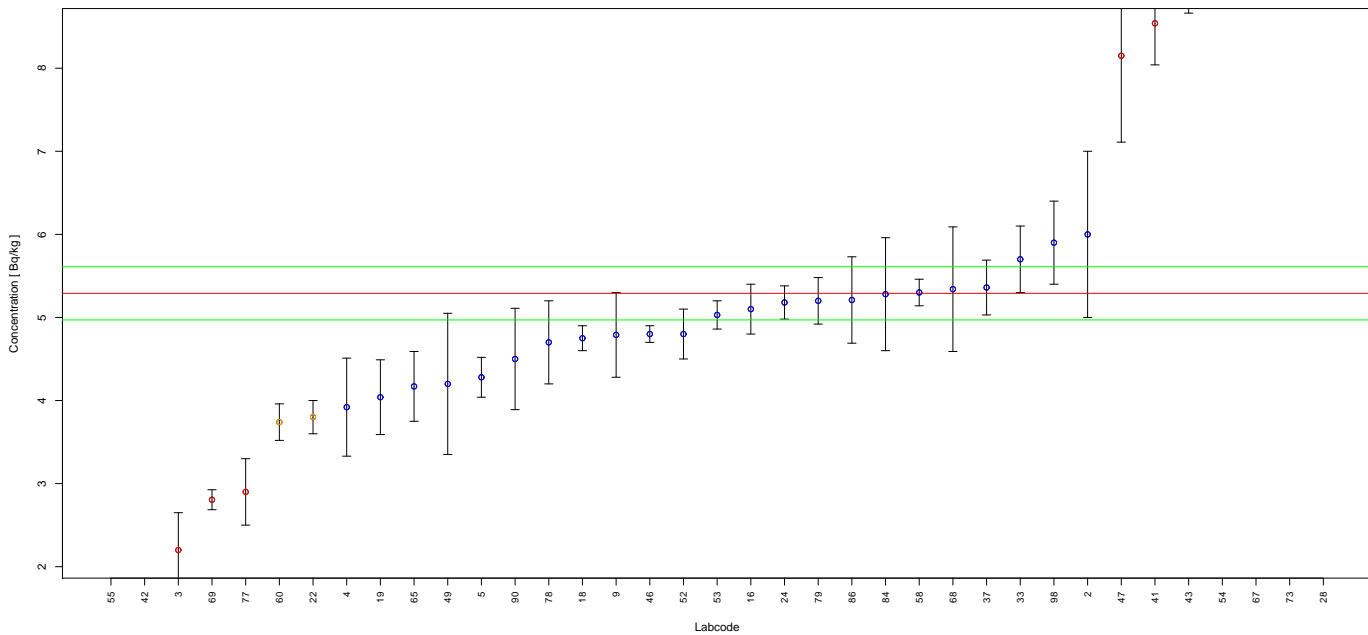


FIGURE 20. Reported results and evaluation parameters for Po-210. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 20. Evaluation Results for Po-210 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
2	6.0	1.0	13.42	17.73	A	A	A	2.22
3	2.20	0.45	-58.41	21.33	N	N	N	9.66
4	3.92	0.59	-25.90	16.22	A	A	A	4.28
5	4.28	0.24	-19.09	8.25	A	A	A	3.16
9	4.79	0.51	-9.45	12.25	A	A	A	1.56
16	5.1	0.3	-3.59	8.44	A	A	A	0.59
18	4.75	0.15	-10.21	6.82	A	A	A	1.69
19	4.04	0.45	-23.63	12.68	A	A	A	3.91
22	3.8	0.2	-28.17	8.02	A	N	W	4.66
24	5.18	0.20	-2.08	7.18	A	A	A	0.34
28	16.8	2.8	217.58	17.73	N	N	N	35.97
33	5.7	0.4	7.75	9.26	A	A	A	1.28
37	5.36	0.33	1.32	8.63	A	A	A	0.22
41	8.54	0.50	61.44	8.42	N	N	N	10.16
42	1.33	0.15	-74.86	12.80	N	N	N	12.38
43	8.989	0.326	69.92	7.05	N	N	N	11.56
46	4.80	0.10	-9.26	6.40	A	A	A	1.53
47	8.15	1.04	54.06	14.12	N	N	N	8.94
49	4.2	0.85	-20.60	21.12	A	A	A	3.41
52	4.8	0.3	-9.26	8.70	A	A	A	1.53
53	5.03	0.17	-4.91	6.93	A	A	A	0.81
54	11.8	0.5	123.06	7.39	N	N	N	20.34
55	0.855	0.051	-83.84	8.50	N	N	N	13.86
58	5.30	0.16	0.19	6.76	A	A	A	0.03
60	3.74	0.22	-29.30	8.44	A	N	W	4.84
65	4.17	0.42	-21.17	11.75	A	A	A	3.50
67	12.34	0.61	133.27	7.81	N	N	N	22.03
68	5.34	0.75	0.95	15.29	A	A	A	0.16
69	2.806	0.12	-46.96	7.41	N	N	N	7.76
73	13.8	2	160.87	15.70	N	N	N	26.59
77	2.9	0.4	-45.18	15.06	N	N	N	7.47
78	4.7	0.5	-11.15	12.24	A	A	A	1.84
79	5.20	0.28	-1.70	8.10	A	A	A	0.28
84	5.28	0.68	-0.19	14.23	A	A	A	0.03
86	5.21	0.52	-1.51	11.67	A	A	A	0.25
90	4.50	0.61	-14.93	14.84	A	A	A	2.47
98	5.9	0.5	11.53	10.41	A	A	A	1.91

## Reported Results for Pb-210 Determination in Sample 2

TABLE 21. Target values

Parameter	Value
Target Value, Bq/kg	5.2
UNC, Bq/kg	0.31
MARB, %	30

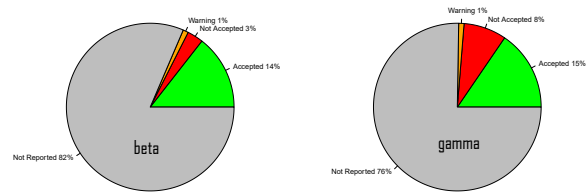


FIGURE 21. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

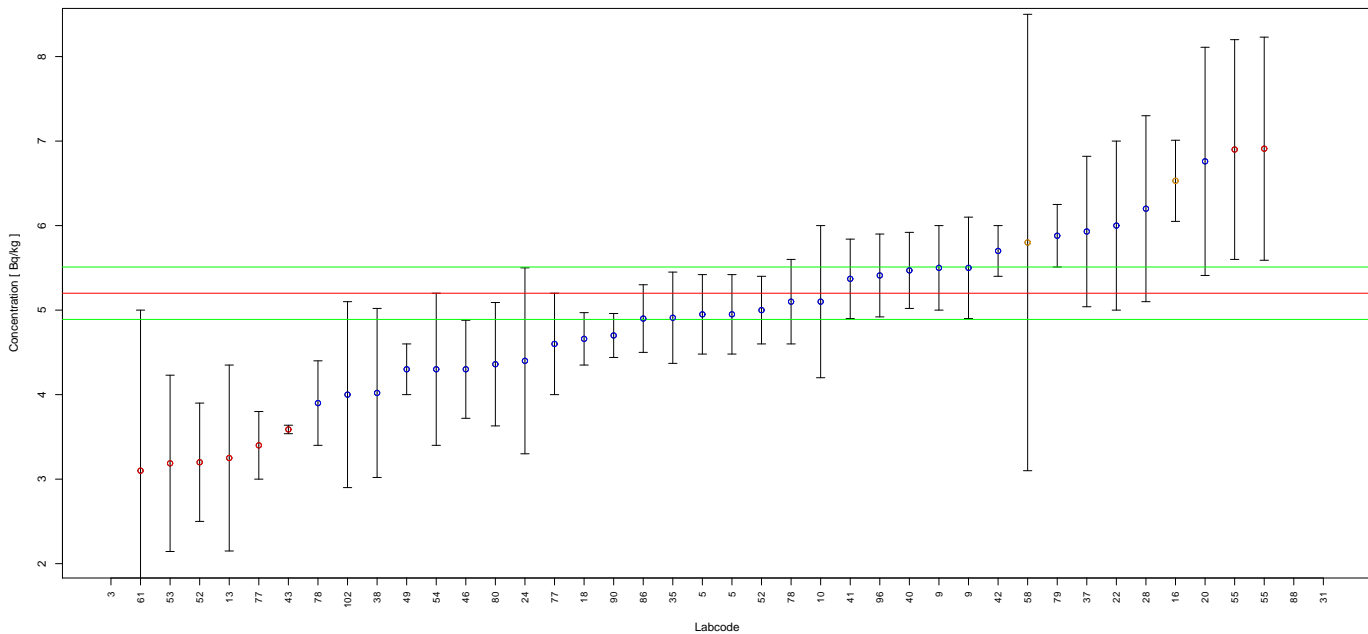


FIGURE 22. Reported results and evaluation parameters for Pb-210. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 22. Evaluation Results for Pb-210 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
3	0.99	0.10	-80.96	11.73	N	N	N	13.58
5	4.95	0.47	-4.81	11.21	A	A	A	0.81
5	4.95	0.47	-4.81	11.21	A	A	A	0.81
9	5.50	0.50	5.77	10.87	A	A	A	0.97
9	5.50	0.60	5.77	12.43	A	A	A	0.97
10	5.1	0.9	-1.92	18.63	A	A	A	0.32
13	3.25	1.10	-37.50	34.37	N	N	N	6.29
16	6.53	0.48	25.58	9.46	A	N	W	4.29



TABLE 22. Evaluation Results for Pb-210 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
18	4.66	0.31	-10.38	8.93	A	A	A	1.74
20	6.76	1.35	30.00	20.84	A	A	A	5.03
22	6	1	15.38	17.70	A	A	A	2.58
24	4.4	1.1	-15.38	25.70	A	A	A	2.58
28	6.2	1.1	19.23	18.72	A	A	A	3.23
31	60.35	11.17	1060.58	19.45	N	N	N	177.90
35	4.91	0.54	-5.58	12.51	A	A	A	0.94
37	5.93	0.89	14.04	16.15	A	A	A	2.35
38	4.02	1.00	-22.69	25.58	A	A	A	3.81
40	5.47	0.45	5.19	10.16	A	A	A	0.87
41	5.37	0.47	3.27	10.59	A	A	A	0.55
42	5.7	0.3	9.62	7.95	A	A	A	1.61
43	3.588	0.0501	-31.00	6.12	N	N	N	5.20
46	4.30	0.58	-17.31	14.75	A	A	A	2.90
49	4.3	0.3	-17.31	9.18	A	A	A	2.90
52	5.0	0.4	-3.85	9.98	A	A	A	0.65
52	3.2	0.7	-38.46	22.67	N	A	N	6.45
53	3.187	1.043	-38.71	33.27	N	N	N	6.49
54	4.3	0.9	-17.31	21.76	A	A	A	2.90
55	6.9	1.3	32.69	19.76	N	A	N	5.48
55	6.91	1.32	32.88	20.01	N	A	N	5.52
58	5.8	2.7	11.54	46.93	A	N	W	1.94
61	3.1	1.9	-40.38	61.58	N	N	N	6.77
77	4.6	0.6	-11.54	14.34	A	A	A	1.94
77	3.4	0.4	-34.62	13.19	N	N	N	5.81
78	5.1	0.5	-1.92	11.47	A	A	A	0.32
78	3.9	0.5	-25.00	14.14	A	A	A	4.19
79	5.88	0.37	13.08	8.67	A	A	A	2.19
80	4.36	0.73	-16.15	17.77	A	A	A	2.71
86	4.9	0.4	-5.77	10.11	A	A	A	0.97
88	48.59	14.52	834.42	30.47	N	N	N	139.97
90	4.70	0.26	-9.62	8.13	A	A	A	1.61
96	5.41	0.49	4.04	10.84	A	A	A	0.68
102	4.0	1.1	-23.08	28.14	A	A	A	3.87

## Reported Results for Am-241 Determination in Sample 2

TABLE 23. Target values

Parameter	Value
Target Value, Bq/kg	10.1
UNC, Bq/kg	0.6
MARB, %	30

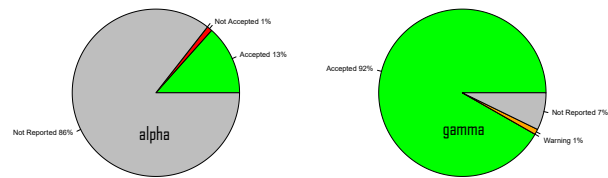


FIGURE 23. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

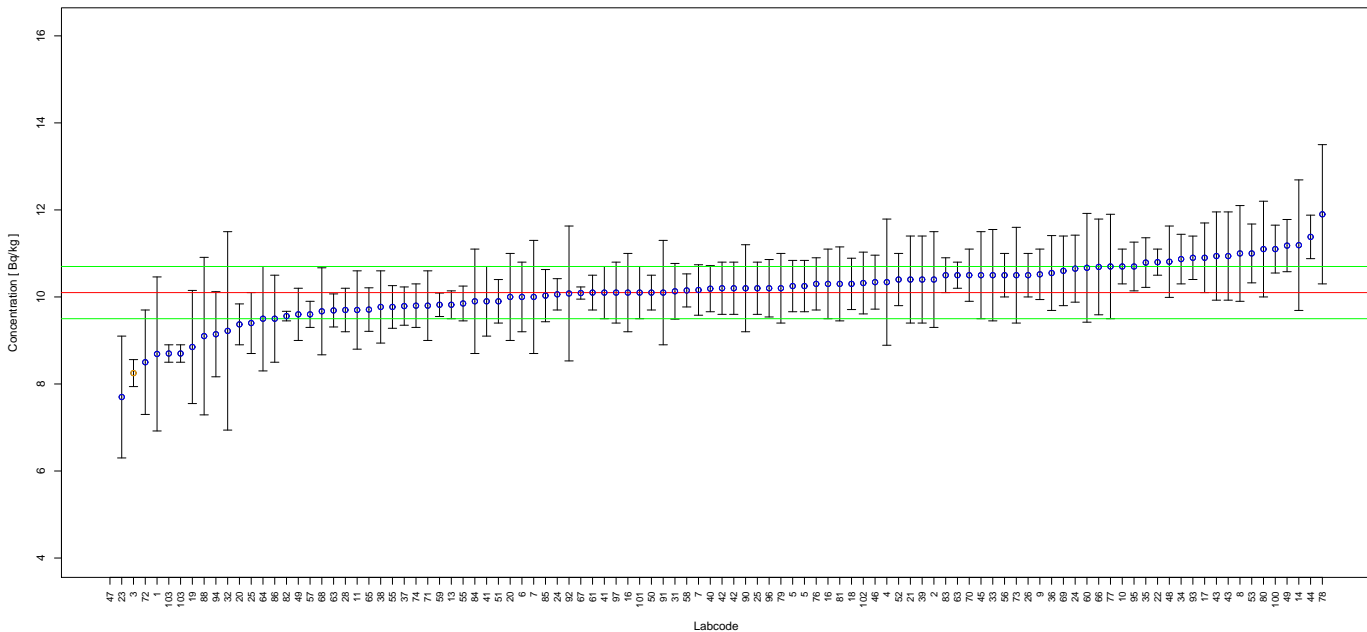


FIGURE 24. Reported results and evaluation parameters for Am-241. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 24. Evaluation Results for Am-241 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	8.69	1.77	-13.96	21.22	A	A	A	2.35
2	10.4	1.1	2.97	12.13	A	A	A	0.50
3	8.25	0.31	-18.32	7.03	A	N	W	3.08
4	10.34	1.45	2.38	15.23	A	A	A	0.40
5	10.25	0.59	1.49	8.27	A	A	A	0.25
5	10.25	0.59	1.49	8.27	A	A	A	0.25
6	10.0	0.8	-0.99	9.96	A	A	A	0.17
7	10.0	1.3	-0.99	14.29	A	A	A	0.17

TABLE 24. Evaluation Results for Am-241 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
7	10.16	0.58	0.59	8.24	A	A	A	0.10
8	11.0	1.1	8.91	11.63	A	A	A	1.50
9	10.52	0.58	4.16	8.10	A	A	A	0.70
10	10.7	0.4	5.94	7.02	A	A	A	1.00
11	9.7	0.9	-3.96	11.02	A	A	A	0.67
13	9.82	0.32	-2.77	6.78	A	A	A	0.47
14	11.19	1.50	10.79	14.66	A	A	A	1.82
16	10.3	0.8	1.98	9.78	A	A	A	0.33
16	10.1	0.9	0.00	10.71	A	A	A	0.00
17	10.9	0.8	7.92	9.44	A	A	A	1.33
18	10.30	0.59	1.98	8.25	A	A	A	0.33
19	8.85	1.30	-12.38	15.85	A	A	A	2.08
20	10	1	-0.99	11.63	A	A	A	0.17
20	9.37	0.47	-7.23	7.78	A	A	A	1.22
21	10.4	1.0	2.97	11.30	A	A	A	0.50
22	10.8	0.3	6.93	6.56	A	A	A	1.17
23	7.7	1.4	-23.76	19.13	A	A	A	4.00
24	10.06	0.36	-0.40	6.94	A	A	A	0.07
24	10.65	0.77	5.45	9.36	A	A	A	0.92
25	10.2	0.6	0.99	8.36	A	A	A	0.17
25	9.4	0.7	-6.93	9.53	A	A	A	1.17
26	10.5	0.5	3.96	7.61	A	A	A	0.67
28	9.7	0.5	-3.96	7.87	A	A	A	0.67
31	10.13	0.64	0.30	8.67	A	A	A	0.05
32	9.22	2.28	-8.71	25.43	A	A	A	1.47
33	10.5	1.05	3.96	11.63	A	A	A	0.67
34	10.87	0.57	7.62	7.92	A	A	A	1.28
35	10.79	0.57	6.83	7.95	A	A	A	1.15
36	10.55	0.86	4.46	10.09	A	A	A	0.75
37	9.79	0.44	-3.07	7.45	A	A	A	0.52
38	9.77	0.83	-3.27	10.37	A	A	A	0.55
39	10.4	1.0	2.97	11.30	A	A	A	0.50
40	10.19	0.53	0.89	7.90	A	A	A	0.15
41	10.1	0.6	0.00	8.40	A	A	A	0.00
41	9.9	0.8	-1.98	10.03	A	A	A	0.33
42	10.2	0.6	0.99	8.36	A	A	A	0.17
42	10.2	0.6	0.99	8.36	A	A	A	0.17
43	10.94	1.014	8.32	11.01	A	A	A	1.40
43	10.94	1.014	8.32	11.01	A	A	A	1.40
44	11.38	0.5	12.67	7.39	A	A	A	2.13
45	10.5	1.0	3.96	11.22	A	A	A	0.67
46	10.34	0.62	2.38	8.44	A	A	A	0.40
47	0.033	0.012	-99.67	36.85	N	N	N	16.78
48	10.81	0.82	7.03	9.63	A	A	A	1.18
49	9.6	0.6	-4.95	8.62	A	A	A	0.83
49	11.18	0.6	10.69	8.01	A	A	A	1.80
50	10.1	0.4	0.00	7.14	A	A	A	0.00
51	9.9	0.5	-1.98	7.80	A	A	A	0.33
52	10.4	0.6	2.97	8.28	A	A	A	0.50
53	11.000	0.676	8.91	8.55	A	A	A	1.50
55	9.85	0.40	-2.48	7.20	A	A	A	0.42
55	9.77	0.49	-3.27	7.77	A	A	A	0.55
56	10.5	0.5	3.96	7.61	A	A	A	0.67
57	9.6	0.3	-4.95	6.71	A	A	A	0.83

TABLE 24. Evaluation Results for Am-241 in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
58	10.15	0.38	0.50	7.02	A	A	A	0.08
59	9.82	0.27	-2.77	6.55	A	A	A	0.47
60	10.67	1.25	5.64	13.14	A	A	A	0.95
61	10.1	0.4	0.00	7.14	A	A	A	0.00
63	9.69	0.38	-4.06	7.12	A	A	A	0.68
63	10.5	0.3	3.96	6.59	A	A	A	0.67
64	9.5	1.2	-5.94	13.96	A	A	A	1.00
65	9.71	0.50	-3.86	7.86	A	A	A	0.65
66	10.69	1.10	5.84	11.88	A	A	A	0.98
67	10.09	0.14	-0.10	6.10	A	A	A	0.02
68	9.67	1.00	-4.26	11.93	A	A	A	0.72
69	10.6	0.8	4.95	9.60	A	A	A	0.83
70	10.5	0.6	3.96	8.24	A	A	A	0.67
71	9.8	0.8	-2.97	10.10	A	A	A	0.50
72	8.5	1.2	-15.84	15.32	A	A	A	2.67
73	10.5	1.1	3.96	12.04	A	A	A	0.67
74	9.8	0.5	-2.97	7.83	A	A	A	0.50
76	10.3	0.6	1.98	8.32	A	A	A	0.33
77	10.7	1.2	5.94	12.69	A	A	A	1.00
78	11.9	1.6	17.82	14.70	A	A	A	3.00
79	10.2	0.8	0.99	9.84	A	A	A	0.17
80	11.1	1.1	9.90	11.55	A	A	A	1.67
81	10.3	0.85	1.98	10.17	A	A	A	0.33
82	9.56	0.11	-5.35	6.05	A	A	A	0.90
83	10.5	0.4	3.96	7.06	A	A	A	0.67
84	9.9	1.2	-1.98	13.50	A	A	A	0.33
85	10.03	0.60	-0.69	8.43	A	A	A	0.12
86	9.5	1.0	-5.94	12.09	A	A	A	1.00
88	9.10	1.81	-9.90	20.76	A	A	A	1.67
90	10.2	1.0	0.99	11.46	A	A	A	0.17
91	10.1	1.2	0.00	13.28	A	A	A	0.00
92	10.08	1.55	-0.20	16.48	A	A	A	0.03
93	10.9	0.499	7.92	7.50	A	A	A	1.33
94	9.143	0.978	-9.48	12.24	A	A	A	1.59
95	10.7	0.56	5.94	7.92	A	A	A	1.00
96	10.20	0.66	0.99	8.78	A	A	A	0.17
97	10.1	0.7	0.00	9.13	A	A	A	0.00
100	11.10	0.55	9.90	7.74	A	A	A	1.67
101	10.1	0.6	0.00	8.40	A	A	A	0.00
102	10.32	0.71	2.18	9.09	A	A	A	0.37
103	8.7	0.2	-13.86	6.37	A	A	A	2.33

# Reported Results for Cs-134 Determination in Sample 3

TABLE 25. Target values

Parameter	Value
Target Value, Bq/kg	12.1
UNC, Bq/kg	0.7
MARB, %	20

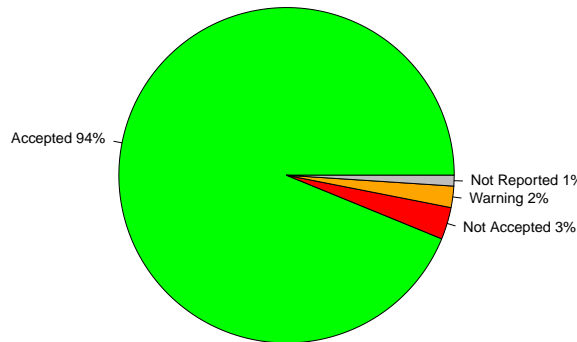


FIGURE 25. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

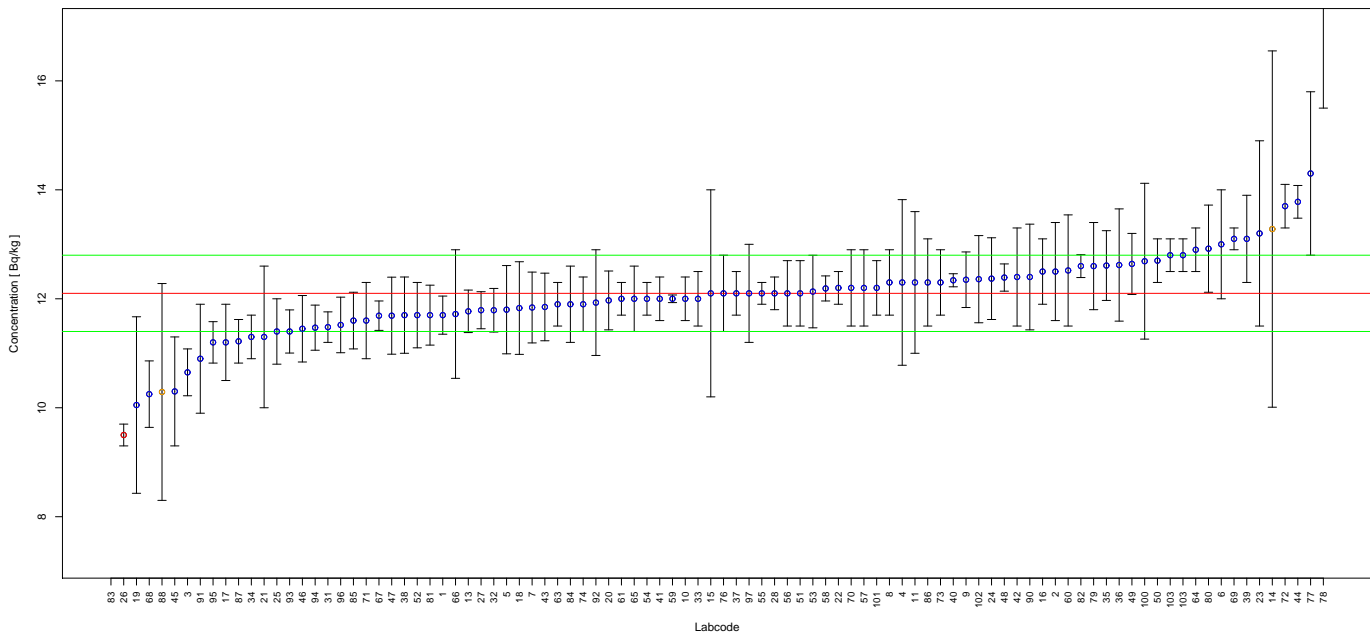


FIGURE 26. Reported results and evaluation parameters for Cs-134. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 26. Evaluation Results for Cs-134 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	11.7	0.35	-3.31	6.51	A	A	A	0.57
2	12.5	0.9	3.31	9.24	A	A	A	0.57
3	10.65	0.43	-11.98	7.05	A	A	A	2.07
4	12.3	1.52	1.65	13.64	A	A	A	0.29
5	11.8	0.81	-2.48	8.98	A	A	A	0.43
6	13.0	1.0	7.44	9.62	A	A	A	1.29
7	11.84	0.65	-2.15	7.98	A	A	A	0.37
8	12.3	0.6	1.65	7.57	A	A	A	0.29
9	12.35	0.51	2.07	7.11	A	A	A	0.36
10	12.0	0.4	-0.83	6.68	A	A	A	0.14
11	12.3	1.3	1.65	12.05	A	A	A	0.29
13	11.77	0.39	-2.73	6.67	A	A	A	0.47
14	13.28	3.27	9.75	25.29	A	N	W	1.69
15	12.1	1.9	0.00	16.73	A	A	A	0.00
16	12.5	0.6	3.31	7.52	A	A	A	0.57
17	11.2	0.7	-7.44	8.52	A	A	A	1.29
18	11.83	0.85	-2.23	9.22	A	A	A	0.39
19	10.05	1.62	-16.94	17.13	A	A	A	2.93
20	11.97	0.54	-1.07	7.34	A	A	A	0.19
21	11.3	1.3	-6.61	12.88	A	A	A	1.14
22	12.2	0.3	0.83	6.29	A	A	A	0.14
23	13.2	1.7	9.09	14.12	A	A	A	1.57
24	12.37	0.75	2.23	8.38	A	A	A	0.39
25	11.4	0.6	-5.79	7.82	A	A	A	1.00
26	9.5	0.2	-21.49	6.16	N	N	N	3.71
27	11.79	0.34	-2.56	6.46	A	A	A	0.44
28	12.1	0.3	0.00	6.29	A	A	A	0.00
31	11.48	0.28	-5.12	6.28	A	A	A	0.89
32	11.79	0.40	-2.56	6.71	A	A	A	0.44
33	12	0.5	-0.83	7.13	A	A	A	0.14
34	11.30	0.40	-6.61	6.78	A	A	A	1.14
35	12.61	0.64	4.21	7.70	A	A	A	0.73
36	12.62	1.03	4.30	10.00	A	A	A	0.74
37	12.1	0.4	0.00	6.66	A	A	A	0.00
38	11.7	0.7	-3.31	8.32	A	A	A	0.57
39	13.1	0.8	8.26	8.41	A	A	A	1.43
40	12.34	0.12	1.98	5.87	A	A	A	0.34
41	12.0	0.4	-0.83	6.68	A	A	A	0.14
42	12.4	0.9	2.48	9.28	A	A	A	0.43
43	11.85	0.6205	-2.07	7.80	A	A	A	0.36
44	13.78	0.3	13.88	6.18	A	A	A	2.40
45	10.3	1.0	-14.88	11.30	A	A	A	2.57
46	11.45	0.61	-5.37	7.86	A	A	A	0.93
47	11.69	0.707	-3.39	8.37	A	A	A	0.59
48	12.39	0.25	2.40	6.13	A	A	A	0.41
49	12.64	0.56	4.46	7.29	A	A	A	0.77
50	12.7	0.4	4.96	6.59	A	A	A	0.86
51	12.1	0.6	0.00	7.62	A	A	A	0.00
52	11.7	0.6	-3.31	7.73	A	A	A	0.57
53	12.133	0.666	0.27	7.97	A	A	A	0.05
54	12.0	0.3	-0.83	6.30	A	A	A	0.14
55	12.1	0.2	0.00	6.02	A	A	A	0.00
56	12.1	0.6	0.00	7.62	A	A	A	0.00

TABLE 26. Evaluation Results for Cs-134 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
57	12.2	0.7	0.83	8.15	A	A	A	0.14
58	12.19	0.23	0.74	6.09	A	A	A	0.13
59	12	0.07	-0.83	5.81	A	A	A	0.14
60	12.52	1.02	3.47	9.99	A	A	A	0.60
61	12.0	0.3	-0.83	6.30	A	A	A	0.14
63	11.9	0.4	-1.65	6.69	A	A	A	0.29
64	12.9	0.4	6.61	6.56	A	A	A	1.14
65	12.0	0.6	-0.83	7.65	A	A	A	0.14
66	11.72	1.18	-3.14	11.61	A	A	A	0.54
67	11.69	0.27	-3.39	6.23	A	A	A	0.59
68	10.25	0.61	-15.29	8.30	A	A	A	2.64
69	13.1	0.2	8.26	5.98	A	A	A	1.43
70	12.2	0.7	0.83	8.15	A	A	A	0.14
71	11.6	0.7	-4.13	8.36	A	A	A	0.71
72	13.7	0.4	13.22	6.48	A	A	A	2.29
73	12.3	0.6	1.65	7.57	A	A	A	0.29
74	11.9	0.5	-1.65	7.15	A	A	A	0.29
76	12.1	0.7	0.00	8.18	A	A	A	0.00
77	14.3	1.5	18.18	11.98	A	A	A	3.14
78	17.9	2.4	47.93	14.60	N	N	N	8.29
79	12.6	0.8	4.13	8.59	A	A	A	0.71
80	12.92	0.80	6.78	8.47	A	A	A	1.17
81	11.7	0.55	-3.31	7.45	A	A	A	0.57
82	12.6	0.21	4.13	6.02	A	A	A	0.71
83	5.2	0.3	-57.02	8.17	N	N	N	9.86
84	11.9	0.7	-1.65	8.25	A	A	A	0.29
85	11.60	0.52	-4.13	7.32	A	A	A	0.71
86	12.3	0.8	1.65	8.70	A	A	A	0.29
87	11.22	0.40	-7.27	6.80	A	A	A	1.26
88	10.29	1.99	-14.96	20.19	A	N	W	2.59
90	12.4	0.97	2.48	9.73	A	A	A	0.43
91	10.9	1.0	-9.92	10.85	A	A	A	1.71
92	11.93	0.97	-1.40	9.98	A	A	A	0.24
93	11.4	0.396	-5.79	6.75	A	A	A	1.00
94	11.47	0.414	-5.21	6.82	A	A	A	0.90
95	11.2	0.38	-7.44	6.71	A	A	A	1.29
96	11.52	0.51	-4.79	7.28	A	A	A	0.83
97	12.1	0.9	0.00	9.42	A	A	A	0.00
100	12.69	1.43	4.88	12.67	A	A	A	0.84
101	12.2	0.5	0.83	7.09	A	A	A	0.14
102	12.36	0.80	2.15	8.68	A	A	A	0.37
103	12.8	0.3	5.79	6.24	A	A	A	1.00

# Reported Results for Cs-137 Determination in Sample 3

TABLE 27. Target values

Parameter	Value
Target Value, Bq/kg	22.6
UNC, Bq/kg	1.4
MARB, %	20

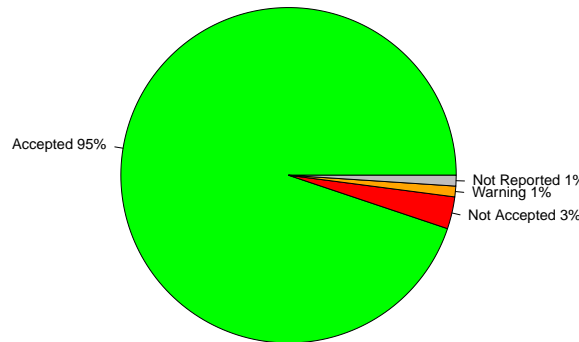


FIGURE 27. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

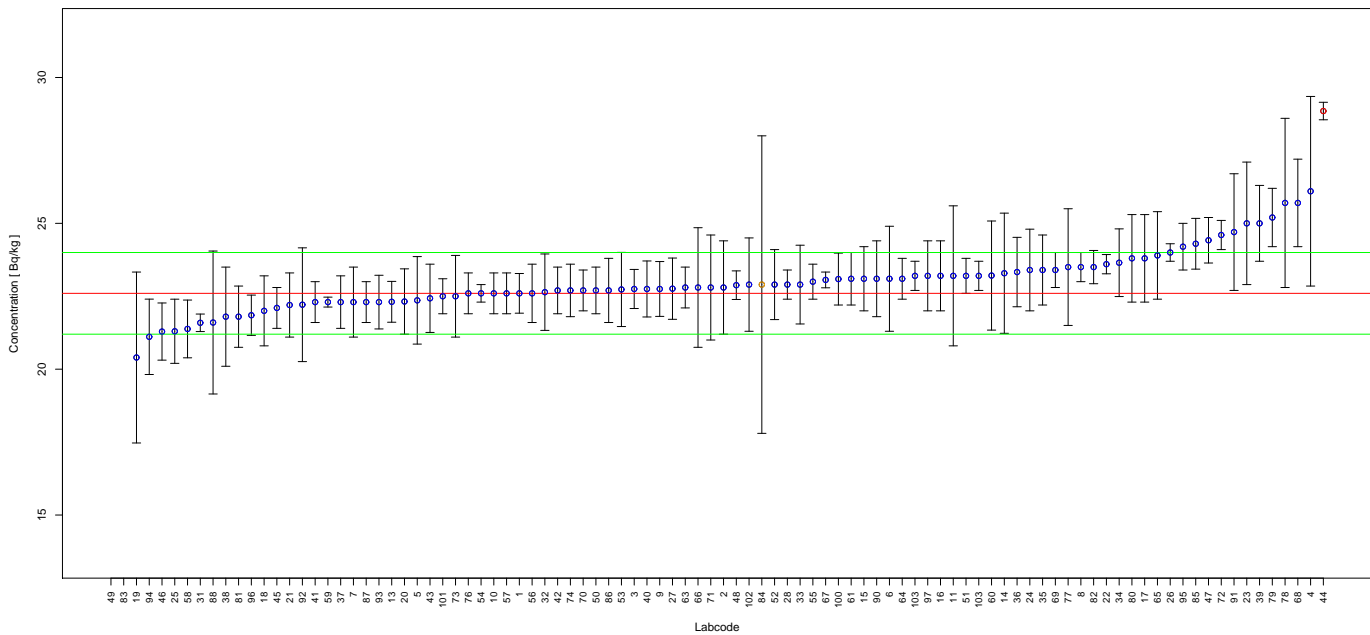


FIGURE 28. Reported results and evaluation parameters for Cs-137. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.



TABLE 28. Evaluation Results for Cs-137 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	22.6	0.68	0.00	6.89	A	A	A	0.00
2	22.8	1.6	0.88	9.36	A	A	A	0.14
3	22.75	0.67	0.66	6.86	A	A	A	0.11
4	26.1	3.25	15.49	13.91	A	A	A	2.50
5	22.36	1.50	-1.06	9.13	A	A	A	0.17
6	23.1	1.8	2.21	9.95	A	A	A	0.36
7	22.3	1.2	-1.33	8.21	A	A	A	0.21
8	23.5	0.5	3.98	6.55	A	A	A	0.64
9	22.75	0.94	0.66	7.45	A	A	A	0.11
10	22.6	0.7	0.00	6.93	A	A	A	0.00
11	23.2	2.4	2.65	12.06	A	A	A	0.43
13	22.31	0.70	-1.28	6.94	A	A	A	0.21
14	23.29	2.06	3.05	10.80	A	A	A	0.49
15	23.1	1.1	2.21	7.81	A	A	A	0.36
16	23.2	1.2	2.65	8.07	A	A	A	0.43
17	23.8	1.5	5.31	8.84	A	A	A	0.86
18	22.0	1.2	-2.65	8.25	A	A	A	0.43
19	20.40	2.93	-9.73	15.64	A	A	A	1.57
20	22.32	1.12	-1.24	7.97	A	A	A	0.20
21	22.2	1.1	-1.77	7.93	A	A	A	0.29
22	23.6	0.33	4.42	6.35	A	A	A	0.71
23	25	2.1	10.62	10.44	A	A	A	1.71
24	23.4	1.4	3.54	8.61	A	A	A	0.57
25	21.3	1.1	-5.75	8.07	A	A	A	0.93
26	24.0	0.3	6.19	6.32	A	A	A	1.00
27	22.76	1.05	0.71	7.72	A	A	A	0.11
28	22.9	0.5	1.33	6.57	A	A	A	0.21
31	21.59	0.30	-4.47	6.35	A	A	A	0.72
32	22.64	1.31	0.18	8.48	A	A	A	0.03
33	22.9	1.35	1.33	8.55	A	A	A	0.21
34	23.65	1.16	4.65	7.90	A	A	A	0.75
35	23.4	1.2	3.54	8.04	A	A	A	0.57
36	23.33	1.19	3.23	8.02	A	A	A	0.52
37	22.3	0.9	-1.33	7.39	A	A	A	0.21
38	21.8	1.7	-3.54	9.96	A	A	A	0.57
39	25.0	1.3	10.62	8.09	A	A	A	1.71
40	22.75	0.96	0.66	7.50	A	A	A	0.11
41	22.3	0.7	-1.33	6.94	A	A	A	0.21
42	22.7	0.8	0.44	7.13	A	A	A	0.07
43	22.43	1.17	-0.75	8.10	A	A	A	0.12
44	28.85	0.3	27.65	6.28	N	N	N	4.46
45	22.1	0.7	-2.21	6.96	A	A	A	0.36
46	21.29	0.98	-5.80	7.72	A	A	A	0.94
47	24.420	0.780	8.05	6.97	A	A	A	1.30
48	22.88	0.49	1.24	6.55	A	A	A	0.20
49	2.21	0.08	-90.22	7.17	N	N	N	14.56
50	22.7	0.8	0.44	7.13	A	A	A	0.07
51	23.2	0.6	2.65	6.71	A	A	A	0.43
52	22.9	1.2	1.33	8.11	A	A	A	0.21
53	22.733	1.271	0.59	8.34	A	A	A	0.09
54	22.6	0.3	0.00	6.34	A	A	A	0.00
55	23.0	0.6	1.77	6.72	A	A	A	0.29
56	22.6	1.0	0.00	7.61	A	A	A	0.00

TABLE 28. Evaluation Results for Cs-137 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
57	22.6	0.7	0.00	6.93	A	A	A	0.00
58	21.38	0.99	-5.40	7.73	A	A	A	0.87
59	22.3	0.17	-1.33	6.24	A	A	A	0.21
60	23.21	1.87	2.70	10.16	A	A	A	0.44
61	23.1	0.9	2.21	7.32	A	A	A	0.36
63	22.8	0.7	0.88	6.91	A	A	A	0.14
64	23.1	0.7	2.21	6.90	A	A	A	0.36
65	23.9	1.5	5.75	8.82	A	A	A	0.93
66	22.80	2.05	0.88	10.92	A	A	A	0.14
67	23.06	0.27	2.04	6.30	A	A	A	0.33
68	25.7	1.5	13.72	8.51	A	A	A	2.21
69	23.4	0.6	3.54	6.70	A	A	A	0.57
70	22.7	0.7	0.44	6.92	A	A	A	0.07
71	22.8	1.8	0.88	10.03	A	A	A	0.14
72	24.6	0.5	8.85	6.52	A	A	A	1.43
73	22.5	1.4	-0.44	8.78	A	A	A	0.07
74	22.7	0.9	0.44	7.35	A	A	A	0.07
76	22.6	0.7	0.00	6.93	A	A	A	0.00
77	23.5	2	3.98	10.53	A	A	A	0.64
78	25.7	2.9	13.72	12.87	A	A	A	2.21
79	25.2	1.0	11.50	7.36	A	A	A	1.86
80	23.8	1.5	5.31	8.84	A	A	A	0.86
81	21.8	1.05	-3.54	7.85	A	A	A	0.57
82	23.5	0.57	3.98	6.65	A	A	A	0.64
83	10.1	0.5	-55.31	7.93	N	N	N	8.93
84	22.9	5.1	1.33	23.12	A	N	W	0.21
85	24.30	0.87	7.52	7.15	A	A	A	1.21
86	22.7	1.1	0.44	7.86	A	A	A	0.07
87	22.3	0.70	-1.33	6.94	A	A	A	0.21
88	21.6	2.45	-4.42	12.92	A	A	A	0.71
90	23.1	1.3	2.21	8.37	A	A	A	0.36
91	24.7	2.0	9.29	10.20	A	A	A	1.50
92	22.21	1.95	-1.73	10.75	A	A	A	0.28
93	22.3	0.92	-1.33	7.44	A	A	A	0.21
94	21.11	1.292	-6.59	8.71	A	A	A	1.06
95	24.2	0.80	7.08	7.02	A	A	A	1.14
96	21.85	0.69	-3.32	6.95	A	A	A	0.54
97	23.2	1.2	2.65	8.07	A	A	A	0.43
100	23.09	0.89	2.17	7.30	A	A	A	0.35
101	22.5	0.6	-0.44	6.74	A	A	A	0.07
102	22.9	1.6	1.33	9.34	A	A	A	0.21
103	23.2	0.5	2.65	6.56	A	A	A	0.43

# Reported Results for Pu-239 Determination in Sample 3

TABLE 29. Target values

Parameter	Value
Target Value, Bq/kg	5.16
UNC, Bq/kg	0.31
MARB, %	30

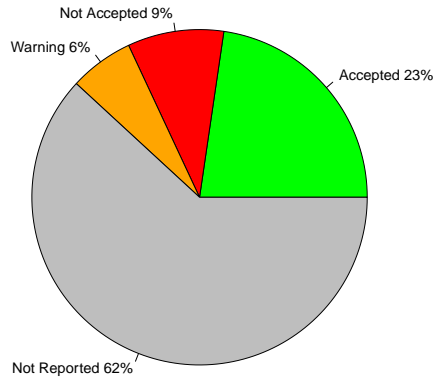


FIGURE 29. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

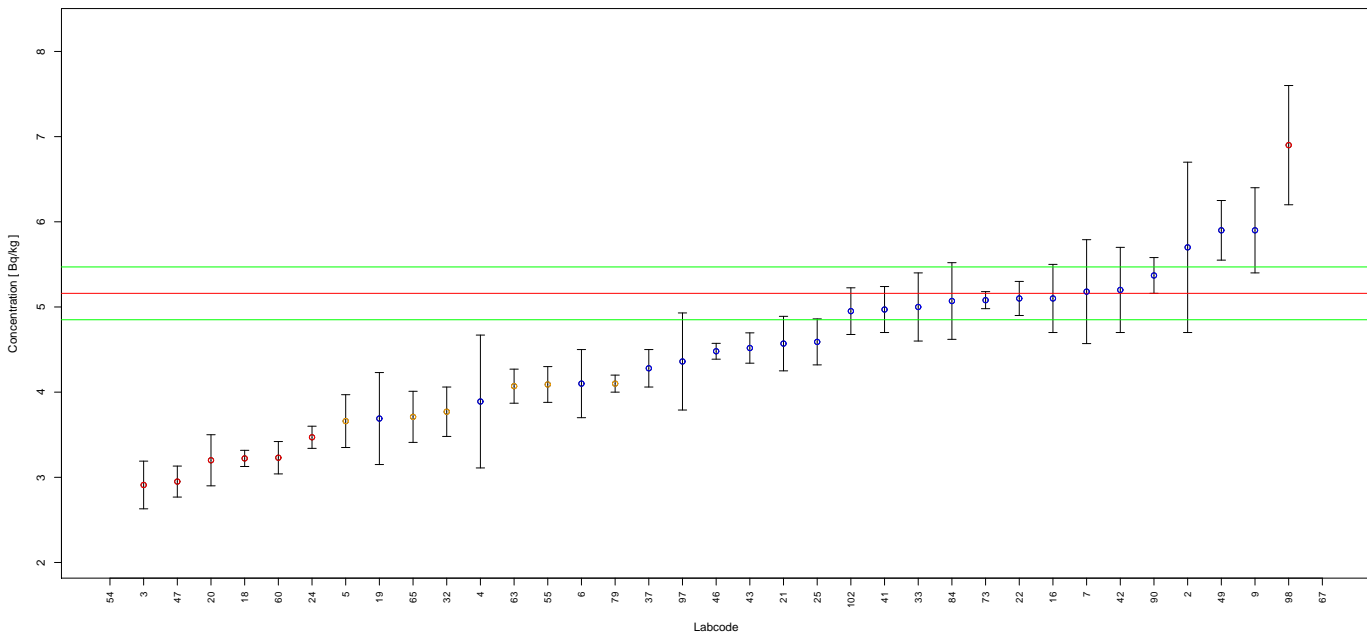


FIGURE 30. Reported results and evaluation parameters for Pu-239. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 30. Evaluation Results for Pu-239 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
2	5.7	1.0	10.47	18.54	A	A	A	1.74
3	2.91	0.28	-43.60	11.34	N	N	N	7.26
4	3.89	0.78	-24.61	20.93	A	A	A	4.10
5	3.66	0.31	-29.07	10.38	A	N	W	4.84
6	4.1	0.4	-20.54	11.46	A	A	A	3.42
7	5.18	0.61	0.39	13.22	A	A	A	0.06
9	5.90	0.50	14.34	10.39	A	A	A	2.39
16	5.1	0.4	-1.16	9.88	A	A	A	0.19
18	3.222	0.095	-37.56	6.69	N	N	N	6.25
19	3.69	0.54	-28.49	15.82	A	A	A	4.74
20	3.2	0.3	-37.98	11.13	N	N	N	6.32
21	4.57	0.32	-11.43	9.23	A	A	A	1.90
22	5.1	0.2	-1.16	7.17	A	A	A	0.19
24	3.47	0.13	-32.75	7.08	N	N	N	5.45
25	4.59	0.27	-11.05	8.41	A	A	A	1.84
32	3.77	0.29	-26.94	9.76	A	N	W	4.48
33	5.0	0.4	-3.10	10.00	A	A	A	0.52
37	4.28	0.22	-17.05	7.91	A	A	A	2.84
41	4.97	0.27	-3.68	8.10	A	A	A	0.61
42	5.2	0.5	0.78	11.34	A	A	A	0.13
43	4.518	0.178	-12.44	7.18	A	A	A	2.07
46	4.480	0.093	-13.18	6.36	A	A	A	2.19
47	2.95	0.182	-42.83	8.61	N	N	N	7.13
49	5.9	0.35	14.34	8.44	A	A	A	2.39
54	1.1	0.1	-78.68	10.90	N	N	N	13.10
55	4.09	0.21	-20.74	7.90	A	N	W	3.45
60	3.23	0.19	-37.40	8.41	N	N	N	6.23
63	4.07	0.20	-21.12	7.76	A	N	W	3.52
65	3.71	0.30	-28.10	10.07	A	N	W	4.68
67	10.58	0.71	105.04	9.01	N	N	N	17.48
73	5.08	0.1	-1.55	6.32	A	A	A	0.26
79	4.10	0.10	-20.54	6.48	A	N	W	3.42
84	5.07	0.45	-1.74	10.72	A	A	A	0.29
90	5.37	0.21	4.07	7.17	A	A	A	0.68
97	4.36	0.57	-15.50	14.39	A	A	A	2.58
98	6.9	0.7	33.72	11.79	N	N	N	5.61
102	4.951	0.274	-4.05	8.17	A	A	A	0.67

# Reported Results for Am-241 Determination in Sample 3

TABLE 31. Target values

Parameter	Value
Target Value, Bq/kg	0.902
UNC, Bq/kg	0.054
MARB, %	30

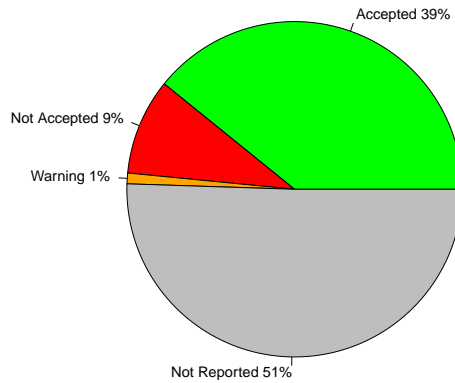


FIGURE 31. Percentage of Accepted vs. Warnings vs. Not Accepted vs. Not Reported results

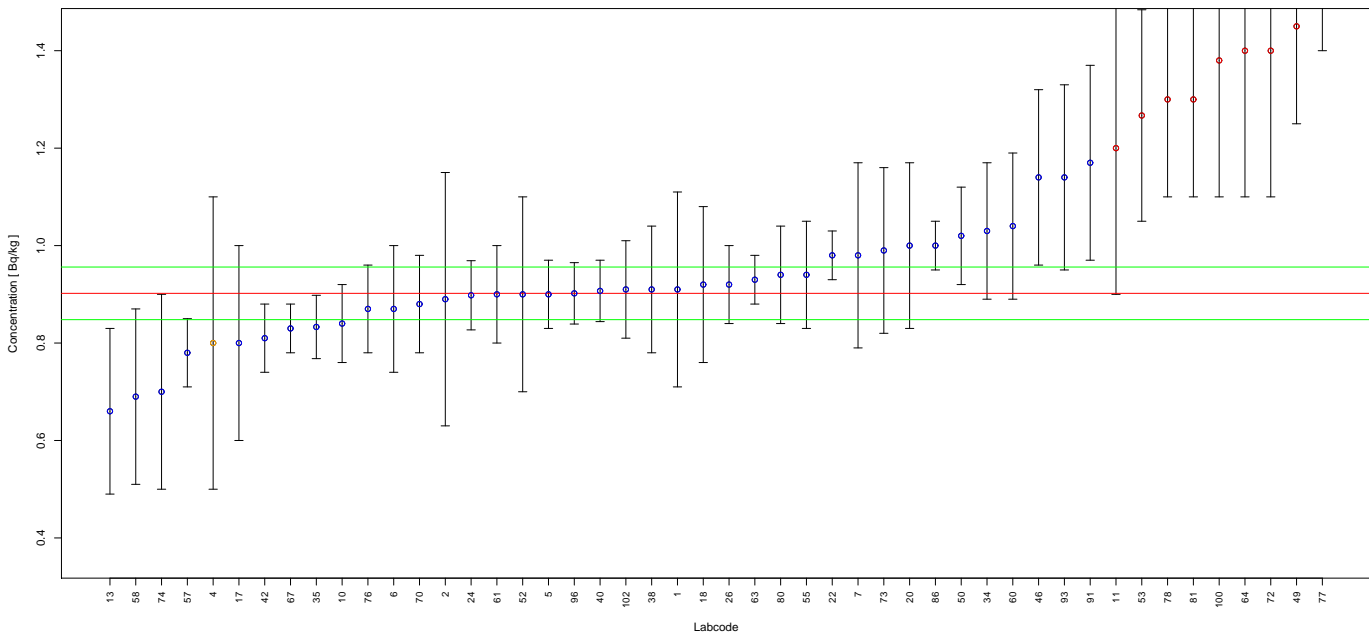


FIGURE 32. Reported results and evaluation parameters for Am-241. Blue points represent accepted scores, whereas yellow and red represent warning and not accepted scores respectively.

TABLE 32. Evaluation Results for Am-241 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Rel. Bias	P Test	Accuracy	Precision	Final Score	Z-Score
1	0.91	0.20	0.89	22.78	A	A	A	0.15
2	0.89	0.26	-1.33	29.82	A	A	A	0.22
4	0.8	0.3	-11.31	37.97	A	N	W	1.89
5	0.90	0.07	-0.22	9.82	A	A	A	0.04
6	0.87	0.13	-3.55	16.10	A	A	A	0.59
7	0.98	0.19	8.65	20.29	A	A	A	1.44
10	0.84	0.08	-6.87	11.25	A	A	A	1.15
11	1.2	0.3	33.04	25.71	N	A	N	5.52
13	0.66	0.17	-26.83	26.44	A	A	A	4.48
17	0.8	0.2	-11.31	25.71	A	A	A	1.89
18	0.92	0.16	2.00	18.39	A	A	A	0.33
20	1.00	0.17	10.86	18.02	A	A	A	1.81
22	0.98	0.05	8.65	7.87	A	A	A	1.44
24	0.898	0.071	-0.44	9.92	A	A	A	0.07
26	0.92	0.08	2.00	10.56	A	A	A	0.33
34	1.03	0.14	14.19	14.85	A	A	A	2.37
35	0.833	0.065	-7.65	9.84	A	A	A	1.28
38	0.91	0.13	0.89	15.49	A	A	A	0.15
40	0.907	0.063	0.55	9.17	A	A	A	0.09
42	0.81	0.07	-10.20	10.51	A	A	A	1.70
46	1.14	0.18	26.39	16.89	A	A	A	4.41
49	1.45	0.2	60.75	15.04	N	N	N	10.15
50	1.02	0.1	13.08	11.49	A	A	A	2.19
52	0.9	0.2	-0.22	23.01	A	A	A	0.04
53	1.267	0.217	40.47	18.14	N	A	N	6.76
55	0.94	0.11	4.21	13.14	A	A	A	0.70
57	0.78	0.07	-13.53	10.79	A	A	A	2.26
58	0.69	0.18	-23.50	26.77	A	A	A	3.93
60	1.04	0.15	15.30	15.62	A	A	A	2.56
61	0.9	0.1	-0.22	12.62	A	A	A	0.04
63	0.93	0.05	3.10	8.05	A	A	A	0.52
64	1.4	0.3	55.21	22.25	N	A	N	9.22
67	0.83	0.05	-7.98	8.49	A	A	A	1.33
70	0.88	0.10	-2.44	12.84	A	A	A	0.41
72	1.4	0.3	55.21	22.25	N	A	N	9.22
73	0.99	0.17	9.76	18.19	A	A	A	1.63
74	0.7	0.2	-22.39	29.19	A	A	A	3.74
76	0.87	0.09	-3.55	11.95	A	A	A	0.59
77	1.6	0.2	77.38	13.86	N	N	N	12.93
78	1.3	0.2	44.12	16.51	N	N	N	7.37
80	0.94	0.10	4.21	12.21	A	A	A	0.70
81	1.30	0.2	44.12	16.51	N	N	N	7.37
86	1.0	0.05	10.86	7.80	A	A	A	1.81
91	1.17	0.20	29.71	18.11	A	A	A	4.96
93	1.14	0.19	26.39	17.71	A	A	A	4.41
96	0.902	0.063	0.00	9.20	A	A	A	0.00
100	1.38	0.28	52.99	21.15	N	A	N	8.85
102	0.91	0.10	0.89	12.51	A	A	A	0.15

## 4 Intercomparison Parameters

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

TABLE 33. Target values

Parameter	Value
Robust Mean, Bq/kg	23.98
Robust SD, Bq/kg	7.78
N	211

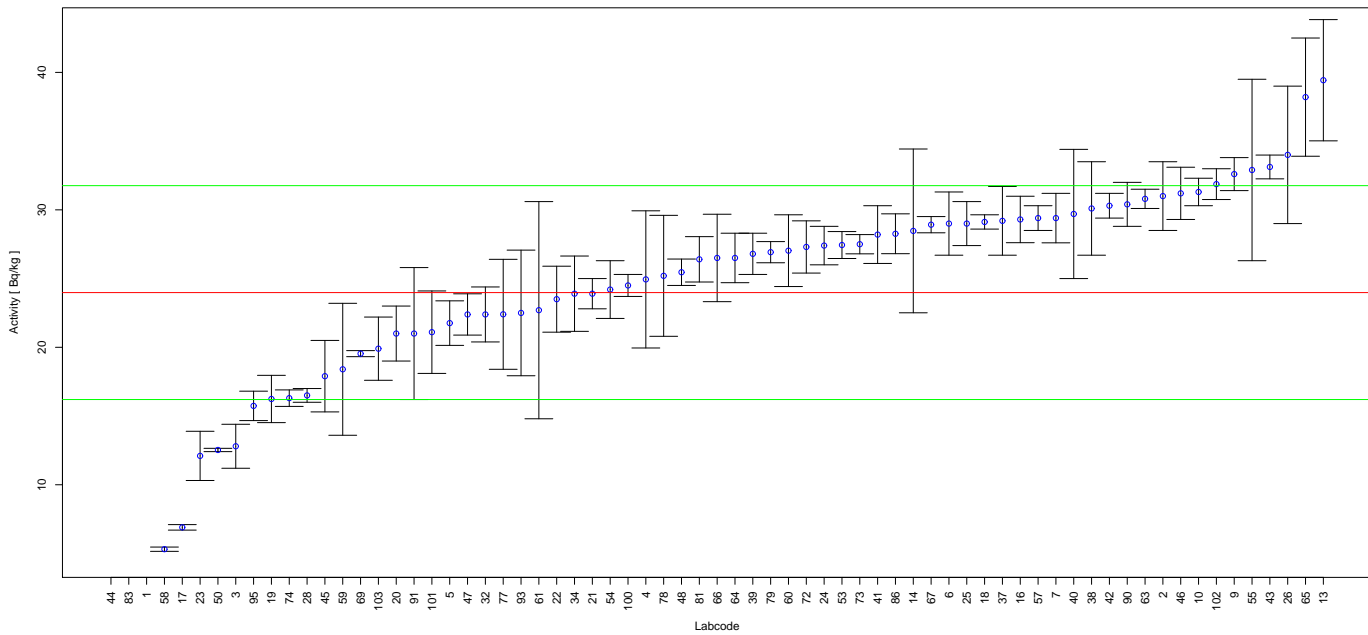


FIGURE 33. Reported results and evaluation parameters for Gross alpha in Sample 1.

TABLE 34. IC Evaluation Results for Gross alpha in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	2.83	0.14	2.72	W
2	31.0	2.5	0.90	A
3	12.8	1.6	1.44	A
4	24.94	4.99	0.12	A
5	21.76	1.62	0.29	A
6	29.0	2.3	0.65	A
7	29.4	1.8	0.70	A
9	32.6	1.2	1.11	A
10	31.3	1.0	0.94	A
13	39.43	4.41	1.99	A
14	28.468	5.958	0.58	A
16	29.30	1.69	0.68	A
17	6.9	0.2	2.20	W
18	29.12	0.52	0.66	A
19	16.24	1.72	0.99	A
20	21	2	0.38	A
21	23.9	1.10	0.01	A
22	23.5	2.4	0.06	A
23	12.10	1.79	1.53	A
24	27.4	1.4	0.44	A

TABLE 34. IC Evaluation Results for Gross alpha in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
25	29	1.6	0.65	A
26	34	5	1.29	A
28	16.5	0.5	0.96	A
32	22.39	2.0	0.20	A
34	23.9	2.74	0.01	A
37	29.2	2.5	0.67	A
38	30.1	3.4	0.79	A
39	26.8	1.5	0.36	A
40	29.7	4.7	0.74	A
41	28.2	2.1	0.54	A
42	30.3	0.9	0.81	A
43	33.12	0.865	1.17	A
44	0.3956	0.001	3.03	N
45	17.9	2.6	0.78	A
46	31.2	1.9	0.93	A
47	22.39	1.502	0.20	A
48	25.46	0.96	0.19	A
50	12.53	0.12	1.47	A
53	27.44	0.98	0.44	A
54	24.2	2.1	0.03	A
55	32.9	6.6	1.15	A
57	29.4	0.9	0.70	A
58	5.311	0.156	2.40	W
59	18.4	4.8	0.72	A
60	27.03	2.61	0.39	A
61	22.7	7.9	0.16	A
63	30.8	0.7	0.88	A
64	26.5	1.8	0.32	A
65	38.2	4.3	1.83	A
66	26.50	3.18	0.32	A
67	28.92	0.59	0.63	A
69	19.539	0.22	0.57	A
72	27.3	1.9	0.43	A
73	27.5	0.7	0.45	A
74	16.3	0.6	0.99	A
77	22.4	4.0	0.20	A
78	25.2	4.4	0.16	A
79	26.92	0.77	0.38	A
81	26.40	1.65	0.31	A
83	1.39	0.07	2.90	W
86	28.26	1.45	0.55	A
90	30.4	1.6	0.83	A
91	21.0	4.8	0.38	A
93	22.5	4.57	0.19	A
95	15.738	1.070	1.06	A
100	24.5	0.8	0.07	A
101	21.1	3.0	0.37	A
102	31.87	1.12	1.01	A
103	19.9	2.3	0.52	A



## Reported Results for Gross beta Determination in Sample 1

TABLE 35. Target values

Parameter	Value
Robust Mean, Bq/kg	124.75
Robust SD, Bq/kg	29.46
N	213

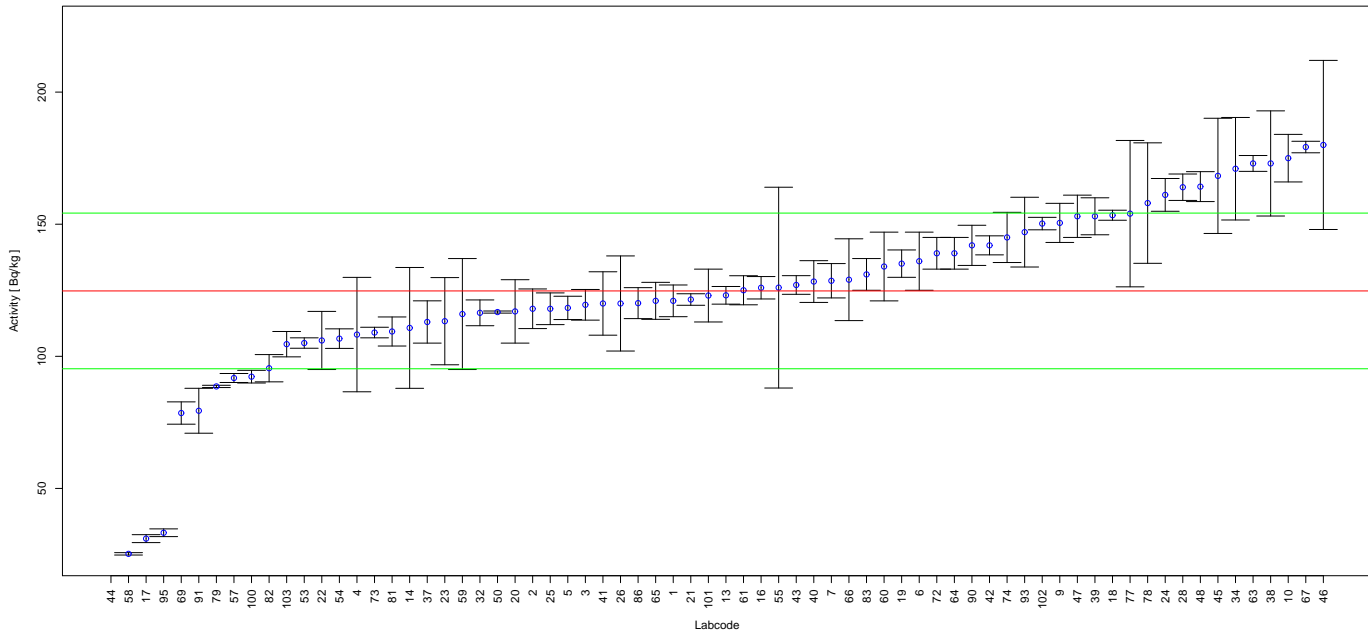


FIGURE 34. Reported results and evaluation parameters for Gross beta in Sample 1.

TABLE 36. IC Evaluation Results for Gross beta in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	121.0	6.0	0.13	A
2	118.0	7.5	0.23	A
3	119.50	5.80	0.18	A
4	108.23	21.65	0.56	A
5	118.33	4.41	0.22	A
6	136	11	0.38	A
7	128.6	6.5	0.13	A
9	150.5	7.4	0.87	A
10	175	9	1.71	A
13	123.09	3.34	0.06	A
14	110.757	22.867	0.47	A
16	125.95	4.24	0.04	A
17	31.0	1.5	3.18	N
18	153.4	1.9	0.97	A
19	135.08	5.18	0.35	A
20	117	12	0.26	A
21	121.5	2.18	0.11	A
22	106	11	0.64	A
23	113.3	16.5	0.39	A
24	161.1	6.2	1.23	A
25	118	6	0.23	A

TABLE 36. IC Evaluation Results for Gross beta in Sample 1, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
26	120	18	0.16	A
28	164	5	1.33	A
32	116.46	4.88	0.28	A
34	171	19.4	1.57	A
37	113	8	0.40	A
38	173	19.9	1.64	A
39	153.0	7.0	0.96	A
40	128.3	7.9	0.12	A
41	120	12	0.16	A
42	142	3.6	0.59	A
43	127	3.53	0.08	A
44	1.9356	0.001	4.17	N
45	168.3	21.8	1.48	A
46	180	32	1.88	A
47	153	8	0.96	A
48	164.23	5.66	1.34	A
50	116.75	0.4	0.27	A
53	105.03	1.97	0.67	A
54	106.7	3.7	0.61	A
55	126	38	0.04	A
57	91.8	1.7	1.12	A
58	25.245	0.449	3.38	N
59	116	21	0.30	A
60	133.99	13.01	0.31	A
61	125.0	5.5	0.01	A
63	173	3	1.64	A
64	139	6	0.48	A
65	121	7	0.13	A
66	129.00	15.48	0.14	A
67	179.21	2.18	1.85	A
69	78.537	4.223	1.57	A
72	139	6	0.48	A
73	109	2	0.53	A
74	145	9.5	0.69	A
77	154.0	27.7	0.99	A
78	158.0	22.8	1.13	A
79	88.61	0.43	1.23	A
81	109.40	5.50	0.52	A
82	95.5	5.16	0.99	A
83	131	6	0.21	A
86	120.13	5.86	0.16	A
90	142	7.6	0.59	A
91	79.4	8.5	1.54	A
93	147	13.2	0.76	A
95	33.229	1.462	3.11	N
100	92.3	2.4	1.10	A
101	123.0	10.0	0.06	A
102	150.24	2.36	0.87	A
103	104.6	4.8	0.68	A

## Reported Results for Gross alpha Determination in Sample 2

TABLE 37. Target values

Parameter	Value
Robust Mean, Bq/kg	12.72
Robust SD, Bq/kg	3.73
N	207

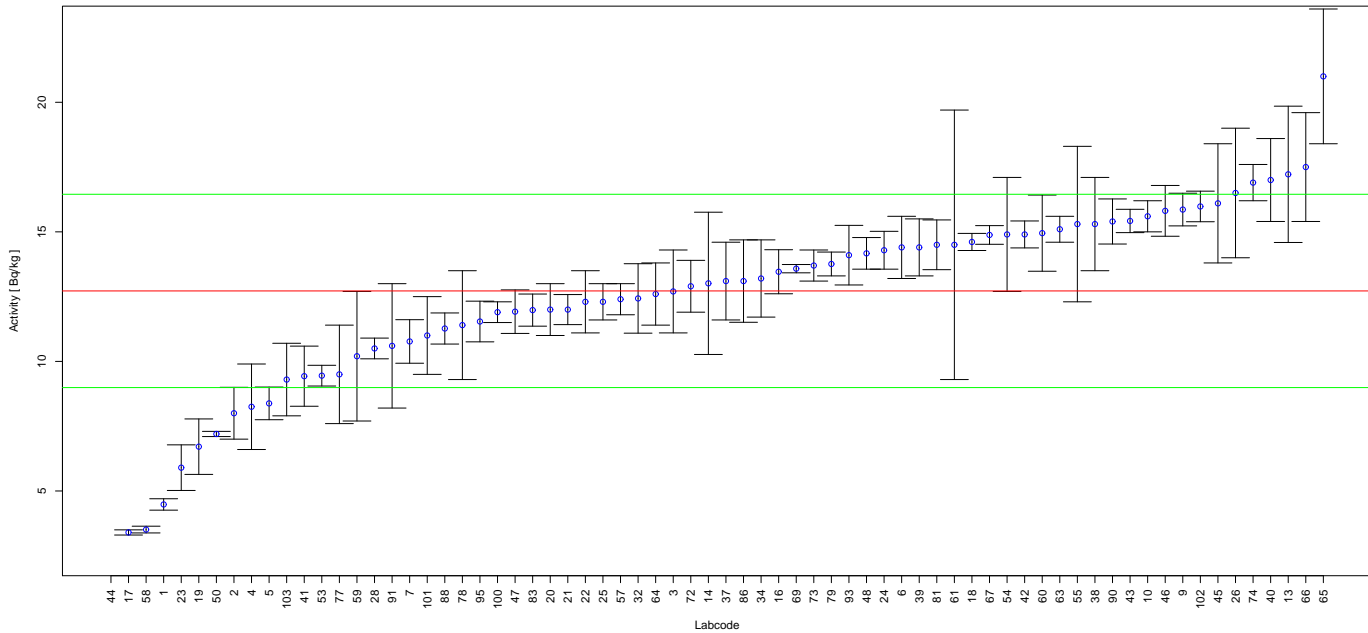


FIGURE 35. Reported results and evaluation parameters for Gross alpha in Sample 2.

TABLE 38. IC Evaluation Results for Gross alpha in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	4.48	0.22	2.21	W
2	8.0	1.0	1.27	A
3	12.7	1.6	0.01	A
4	8.25	1.65	1.20	A
5	8.38	0.63	1.16	A
6	14.4	1.2	0.45	A
7	10.77	0.84	0.52	A
9	15.86	0.63	0.84	A
10	15.6	0.6	0.77	A
13	17.22	2.63	1.21	A
14	13.013	2.745	0.08	A
16	13.46	0.85	0.20	A
17	3.4	0.1	2.50	W
18	14.61	0.33	0.51	A
19	6.71	1.07	1.61	A
20	12	1	0.19	A
21	12.0	0.58	0.19	A
22	12.3	1.2	0.11	A
23	5.90	0.88	1.83	A
24	14.29	0.73	0.42	A
25	12.3	0.7	0.11	A

TABLE 38. IC Evaluation Results for Gross alpha in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
26	16.5	2.5	1.01	A
28	10.5	0.4	0.60	A
32	12.43	1.34	0.08	A
34	13.2	1.49	0.13	A
37	13.1	1.5	0.10	A
38	15.3	1.8	0.69	A
39	14.4	1.1	0.45	A
40	17.0	1.6	1.15	A
41	9.43	1.16	0.88	A
42	14.9	0.52	0.58	A
43	15.42	0.450	0.72	A
44	0.098	0.001	3.38	N
45	16.1	2.3	0.91	A
46	15.81	0.98	0.83	A
47	11.92	0.84	0.21	A
48	14.17	0.61	0.39	A
50	7.2	0.1	1.48	A
53	9.45	0.40	0.88	A
54	14.9	2.2	0.58	A
55	15.3	3.0	0.69	A
57	12.4	0.6	0.09	A
58	3.511	0.130	2.47	W
59	10.2	2.5	0.68	A
60	14.95	1.47	0.60	A
61	14.5	5.2	0.48	A
63	15.1	0.5	0.64	A
64	12.6	1.2	0.03	A
65	21.0	2.6	2.22	W
66	17.50	2.10	1.28	A
67	14.88	0.36	0.58	A
69	13.579	0.16	0.23	A
72	12.9	1.0	0.05	A
73	13.7	0.6	0.26	A
74	16.9	0.7	1.12	A
77	9.5	1.9	0.86	A
78	11.4	2.1	0.35	A
79	13.76	0.46	0.28	A
81	14.50	0.96	0.48	A
83	11.98	0.62	0.20	A
86	13.10	1.59	0.10	A
88	11.27	0.60	0.39	A
90	15.4	0.87	0.72	A
91	10.6	2.4	0.57	A
93	14.1	1.15	0.37	A
95	11.540	0.785	0.32	A
100	11.9	0.4	0.22	A
101	11.0	1.5	0.46	A
102	15.98	0.59	0.87	A
103	9.3	1.4	0.92	A

## Reported Results for Gross beta Determination in Sample 2

TABLE 39. Target values

Parameter	Value
Robust Mean, Bq/kg	28.94
Robust SD, Bq/kg	6.35
N	209

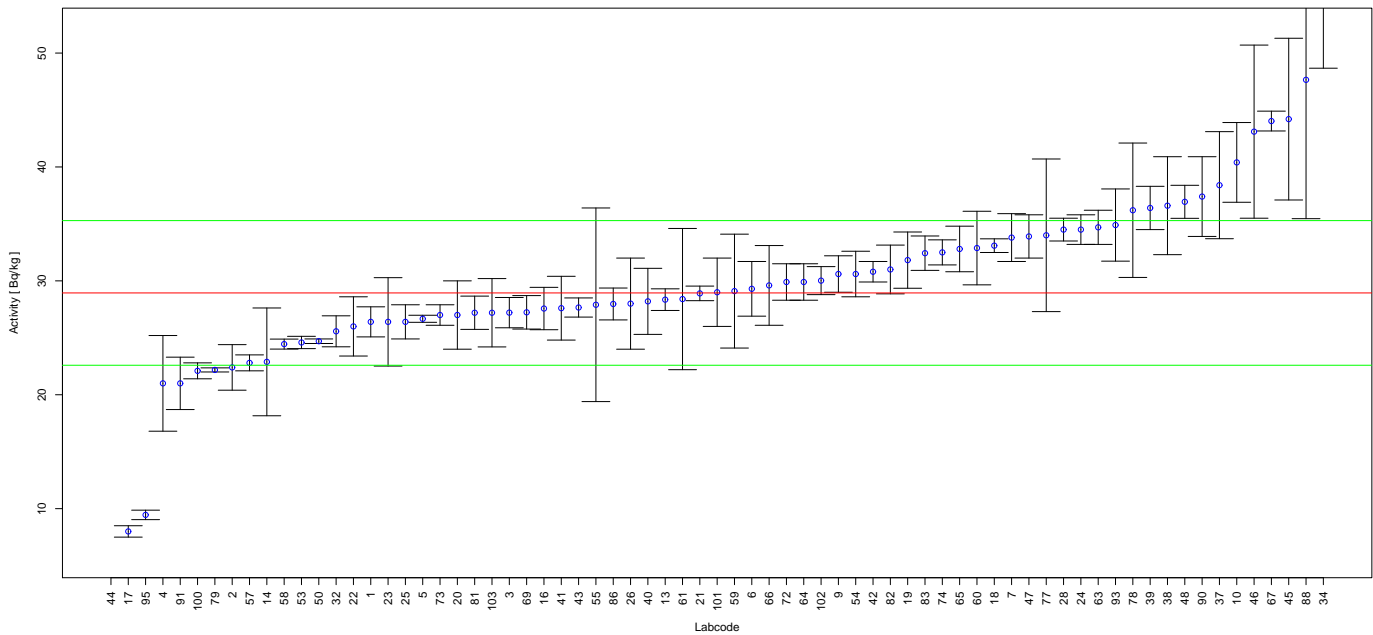


FIGURE 36. Reported results and evaluation parameters for Gross beta in Sample 2.

TABLE 40. IC Evaluation Results for Gross beta in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	26.4	1.32	0.40	A
2	22.4	2.0	1.03	A
3	27.21	1.33	0.27	A
4	21.00	4.20	1.25	A
5	26.67	0.31	0.36	A
6	29.3	2.4	0.06	A
7	33.8	2.1	0.77	A
9	30.6	1.6	0.26	A
10	40.4	3.5	1.80	A
13	28.35	0.95	0.09	A
14	22.887	4.732	0.95	A
16	27.57	1.86	0.22	A
17	8.0	0.5	3.30	N
18	33.09	0.60	0.65	A
19	31.82	2.47	0.45	A
20	27	3	0.31	A
21	28.9	0.64	0.01	A
22	26.0	2.6	0.46	A
23	26.40	3.88	0.40	A
24	34.5	1.3	0.88	A
25	26.4	1.5	0.40	A

TABLE 40. IC Evaluation Results for Gross beta in Sample 2, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
26	28	4	0.15	A
28	34.5	1.0	0.88	A
32	25.57	1.36	0.53	A
34	54.8	6.13	4.07	N
37	38.4	4.7	1.49	A
38	36.6	4.3	1.21	A
39	36.4	1.9	1.17	A
40	28.2	2.9	0.12	A
41	27.6	2.8	0.21	A
42	30.8	0.9	0.29	A
43	27.66	0.841	0.20	A
44	0.2142	0.001	4.52	N
45	44.2	7.1	2.40	W
46	43.1	7.6	2.23	W
47	33.9	1.90	0.78	A
48	36.94	1.45	1.26	A
50	24.7	0.2	0.67	A
53	24.59	0.54	0.69	A
54	30.6	2.0	0.26	A
55	27.9	8.5	0.16	A
57	22.8	0.7	0.97	A
58	24.448	0.439	0.71	A
59	29.1	5	0.03	A
60	32.88	3.23	0.62	A
61	28.4	6.2	0.09	A
63	34.7	1.5	0.91	A
64	29.9	1.6	0.15	A
65	32.8	2.0	0.61	A
66	29.60	3.50	0.10	A
67	44.03	0.87	2.38	W
69	27.237	1.469	0.27	A
72	29.9	1.6	0.15	A
73	27.0	0.9	0.31	A
74	32.5	1.1	0.56	A
77	34.0	6.7	0.80	A
78	36.2	5.9	1.14	A
79	22.18	0.18	1.06	A
81	27.20	1.46	0.27	A
82	31.0	2.14	0.32	A
83	32.43	1.51	0.55	A
86	27.97	1.40	0.15	A
88	47.65	12.19	2.95	W
90	37.4	3.5	1.33	A
91	21.0	2.3	1.25	A
93	34.9	3.17	0.94	A
95	9.451	0.416	3.07	N
100	22.1	0.7	1.08	A
101	29.0	3.0	0.01	A
102	30.02	1.23	0.17	A
103	27.2	3.0	0.27	A

## Reported Results for Gross alpha Determination in Sample 3

TABLE 41. Target values

Parameter	Value
Robust Mean, Bq/kg	8.93
Robust SD, Bq/kg	3.04
N	206

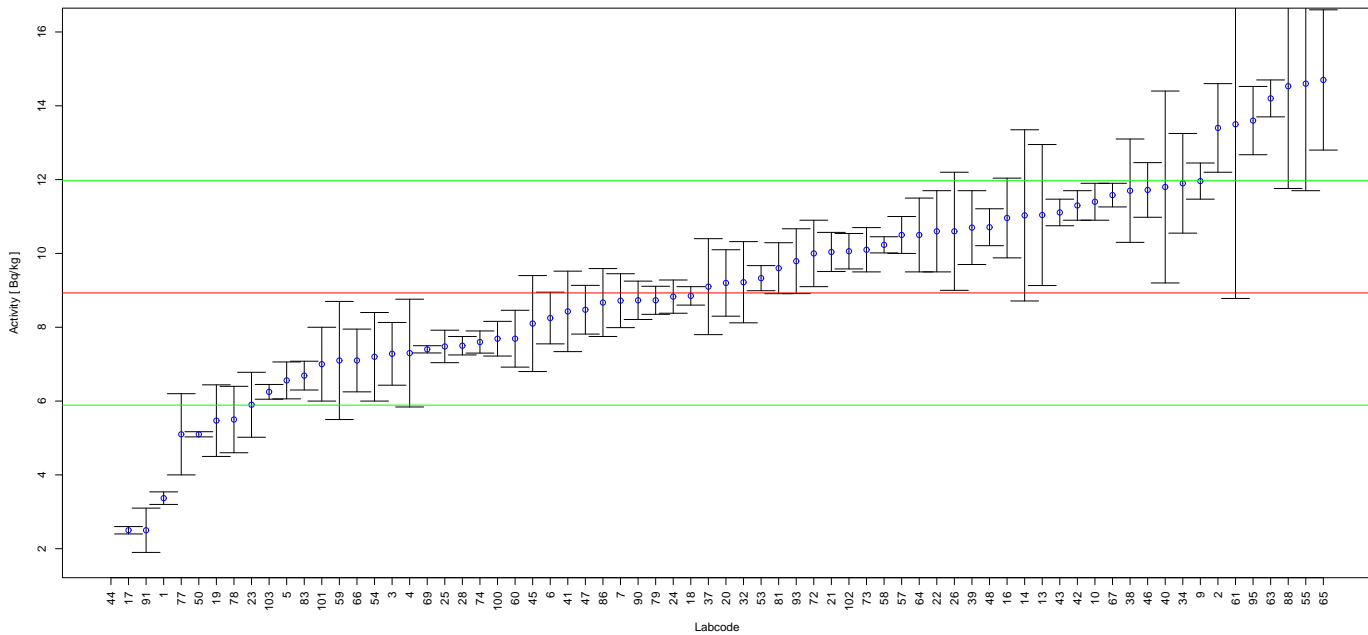


FIGURE 37. Reported results and evaluation parameters for Gross alpha in Sample 3.

TABLE 42. IC Evaluation Results for Gross alpha in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	3.37	0.17	1.83	A
2	13.4	1.2	1.47	A
3	7.28	0.85	0.54	A
4	7.30	1.46	0.54	A
5	6.56	0.50	0.78	A
6	8.25	0.70	0.22	A
7	8.72	0.73	0.07	A
9	11.96	0.49	1.00	A
10	11.4	0.5	0.81	A
13	11.04	1.91	0.69	A
14	11.031	2.319	0.69	A
16	10.96	1.08	0.67	A
17	2.5	0.1	2.12	W
18	8.85	0.25	0.03	A
19	5.47	0.97	1.14	A
20	9.2	0.9	0.09	A
21	10.04	0.53	0.37	A
22	10.6	1.1	0.55	A
23	5.90	0.88	1.00	A
24	8.83	0.45	0.03	A
25	7.48	0.44	0.48	A

TABLE 42. IC Evaluation Results for Gross alpha in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
26	10.6	1.6	0.55	A
28	7.5	0.25	0.47	A
32	9.22	1.10	0.10	A
34	11.9	1.35	0.98	A
37	9.1	1.3	0.06	A
38	11.7	1.4	0.91	A
39	10.7	1.0	0.58	A
40	11.8	2.6	0.94	A
41	8.43	1.09	0.16	A
42	11.3	0.4	0.78	A
43	11.11	0.36	0.72	A
44	0.037	0.001	2.93	W
45	8.1	1.3	0.27	A
46	11.72	0.74	0.92	A
47	8.475	0.660	0.15	A
48	10.71	0.50	0.59	A
50	5.1	0.07	1.26	A
53	9.33	0.34	0.13	A
54	7.2	1.2	0.57	A
55	14.6	2.9	1.87	A
57	10.5	0.5	0.52	A
58	10.233	0.219	0.43	A
59	7.1	1.6	0.60	A
60	7.69	0.77	0.41	A
61	13.5	4.72	1.50	A
63	14.2	0.5	1.73	A
64	10.5	1.0	0.52	A
65	14.7	1.9	1.90	A
66	7.10	0.85	0.60	A
67	11.58	0.32	0.87	A
69	7.402	0.098	0.50	A
72	10.0	0.9	0.35	A
73	10.1	0.6	0.38	A
74	7.6	0.3	0.44	A
77	5.1	1.1	1.26	A
78	5.5	0.9	1.13	A
79	8.73	0.38	0.07	A
81	9.60	0.69	0.22	A
83	6.69	0.39	0.74	A
86	8.67	0.92	0.09	A
88	14.53	2.77	1.84	A
90	8.73	0.52	0.07	A
91	2.5	0.6	2.12	W
93	9.79	0.878	0.28	A
95	13.599	0.925	1.54	A
100	7.69	0.47	0.41	A
101	7.0	1.0	0.63	A
102	10.06	0.48	0.37	A
103	6.25	0.20	0.88	A



## Reported Results for Gross beta Determination in Sample 3

TABLE 43. Target values

Parameter	Value
Robust Mean, Bq/kg	27.63
Robust SD, Bq/kg	6.78
N	210

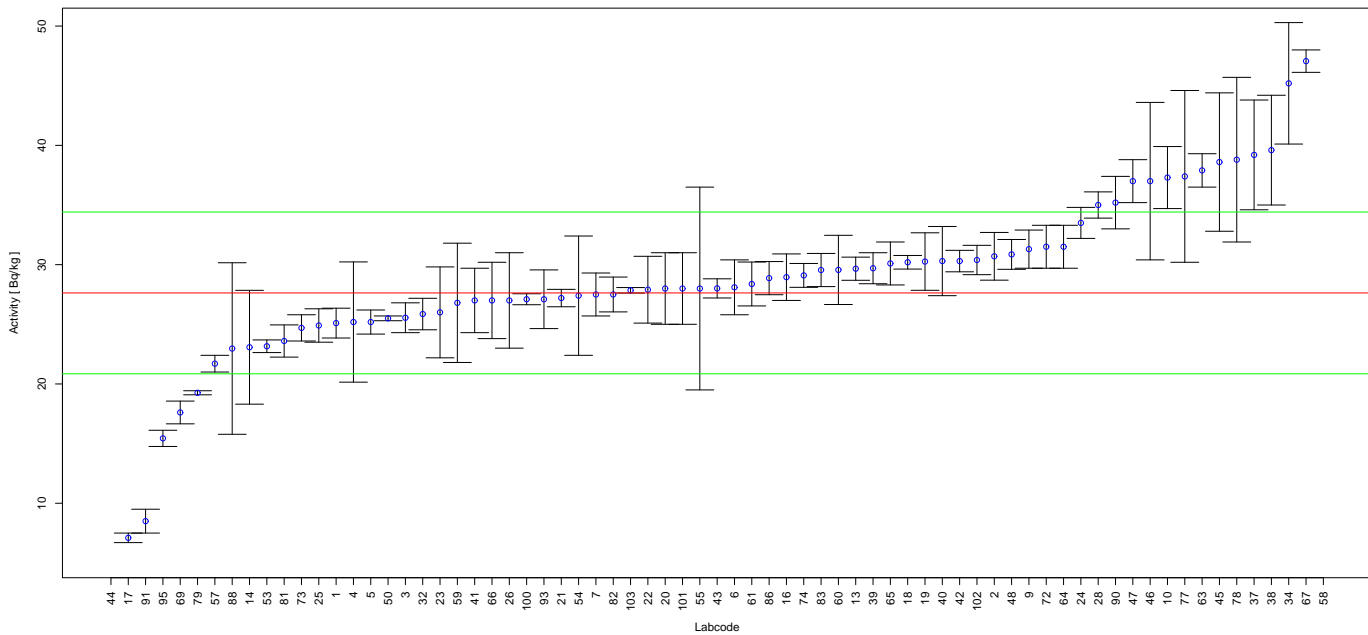


FIGURE 38. Reported results and evaluation parameters for Gross beta in Sample 3.

TABLE 44. IC Evaluation Results for Gross beta in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	25.1	1.25	0.37	A
2	30.7	2.0	0.45	A
3	25.55	1.25	0.31	A
4	25.19	5.04	0.36	A
5	25.19	1.01	0.36	A
6	28.1	2.3	0.07	A
7	27.5	1.8	0.02	A
9	31.3	1.6	0.54	A
10	37.3	2.6	1.43	A
13	29.66	0.97	0.30	A
14	23.077	4.771	0.67	A
16	28.95	1.95	0.19	A
17	7.1	0.4	3.03	N
18	30.20	0.57	0.38	A
19	30.26	2.41	0.39	A
20	28	3	0.05	A
21	27.2	0.73	0.06	A
22	27.9	2.8	0.04	A
23	26.00	3.81	0.24	A
24	33.5	1.3	0.87	A
25	24.9	1.4	0.40	A

TABLE 44. IC Evaluation Results for Gross beta in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
26	27	4	0.09	A
28	35.0	1.1	1.09	A
32	25.86	1.32	0.26	A
34	45.2	5.09	2.59	W
37	39.2	4.6	1.71	A
38	39.6	4.6	1.77	A
39	29.7	1.3	0.31	A
40	30.3	2.9	0.39	A
41	27.0	2.7	0.09	A
42	30.3	0.9	0.39	A
43	28.01	0.803	0.06	A
44	0.048	0.001	4.07	N
45	38.6	5.8	1.62	A
46	37.0	6.6	1.38	A
47	37.0	1.8	1.38	A
48	30.86	1.25	0.48	A
50	25.5	0.2	0.31	A
53	23.16	0.53	0.66	A
54	27.4	5.0	0.03	A
55	28.0	8.5	0.05	A
57	21.7	0.7	0.87	A
58	109.275	0.928	12.04	N
59	26.8	5	0.12	A
60	29.56	2.90	0.28	A
61	28.38	1.84	0.11	A
63	37.9	1.4	1.51	A
64	31.5	1.8	0.57	A
65	30.1	1.8	0.36	A
66	27.00	3.20	0.09	A
67	47.06	0.94	2.87	W
69	17.61	0.953	1.48	A
72	31.5	1.8	0.57	A
73	24.7	1.1	0.43	A
74	29.1	1.0	0.22	A
77	37.4	7.2	1.44	A
78	38.8	6.9	1.65	A
79	19.26	0.17	1.23	A
81	23.60	1.35	0.59	A
82	27.5	1.46	0.02	A
83	29.55	1.39	0.28	A
86	28.87	1.39	0.18	A
88	22.97	7.19	0.69	A
90	35.2	2.2	1.12	A
91	8.5	1.0	2.82	W
93	27.1	2.46	0.08	A
95	15.439	0.679	1.80	A
100	27.1	0.46	0.08	A
101	28.0	3.0	0.05	A
102	30.39	1.23	0.41	A
103	27.85	0.23	0.03	A

## Reported Results for Cm-244 Determination in Sample 3

TABLE 45. Target values

Parameter	Value
Robust Mean, Bq/kg	4.51
Robust SD, Bq/kg	0.66
N	38

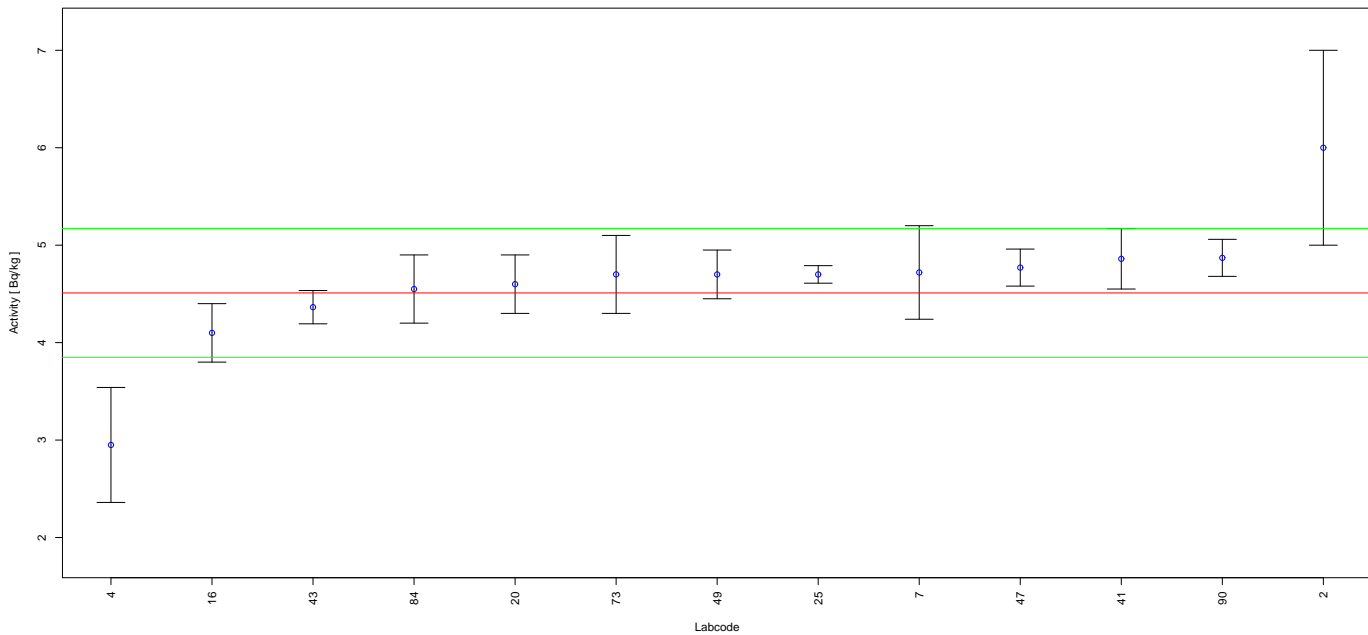


FIGURE 39. Reported results and evaluation parameters for Cm-244 in Sample 3.

TABLE 46. IC Evaluation Results for Cm-244 in Sample 3, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	6.0	1.0	2.26	W
4	2.95	0.59	2.36	W
7	4.72	0.48	0.32	A
16	4.1	0.3	0.62	A
20	4.6	0.3	0.14	A
25	4.70	0.09	0.29	A
41	4.86	0.31	0.53	A
43	4.364	0.171	0.22	A
47	4.77	0.19	0.39	A
49	4.7	0.25	0.29	A
73	4.7	0.4	0.29	A
84	4.55	0.35	0.06	A
90	4.87	0.19	0.55	A

## Reported Results for Gross alpha Determination in Sample 5

TABLE 47. Target values

Parameter	Value
Robust Mean, $counts/cm^2/second$	0.081
Robust SD, $counts/cm^2/second$	0.052
N	182

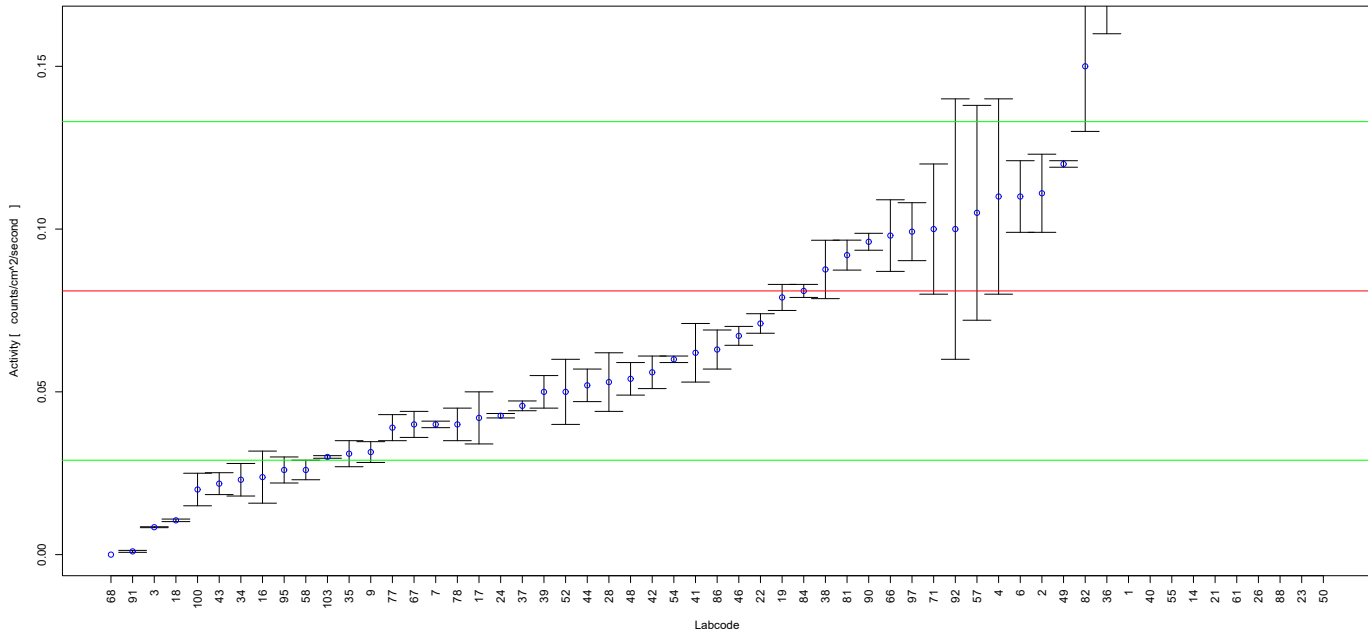


FIGURE 40. Reported results and evaluation parameters for Gross alpha in Sample 5.

TABLE 48. IC Evaluation Results for Gross alpha in Sample 5, Rep. Value and Rep. Unc. in  $counts/cm^2/second$

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	0.193	0.010	2.15	W
2	0.111	0.012	0.58	A
3	0.00842	0.00014	1.40	A
4	0.11	0.03	0.56	A
6	0.110	0.011	0.56	A
7	0.040	0.001	0.79	A
9	0.0315	0.0032	0.95	A
14	0.295	0.021	4.12	N
16	0.0238	0.0080	1.10	A
17	0.042	0.008	0.75	A
18	0.01053	0.00039	1.36	A
19	0.079	0.004	0.04	A
21	0.37	0.03	5.56	N
22	0.071	0.003	0.19	A
23	4.42	0.65	83.44	N
24	0.04267	0.00068	0.74	A
26	1.27	0.19	22.87	N
28	0.053	0.009	0.54	A
34	0.023	0.005	1.12	A
35	0.031	0.004	0.96	A
36	0.17	0.01	1.71	A

TABLE 48. IC Evaluation Results for Gross alpha in Sample 5, Rep. Value and Rep. Unc. in *counts/cm<sup>2</sup>/second*

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
37	0.0457	0.0015	0.68	A
38	0.0876	0.00897	0.13	A
39	0.050	0.005	0.60	A
40	0.253	0.015	3.31	N
41	0.062	0.009	0.37	A
42	0.056	0.005	0.48	A
43	0.0218	0.00336	1.14	A
44	0.052	0.005	0.56	A
46	0.0672	0.0029	0.27	A
48	0.054	0.005	0.52	A
49	0.12	0.001	0.75	A
50	6.81	1	129.40	N
52	0.05	0.01	0.60	A
54	0.06	0.001	0.40	A
55	0.276	0.028	3.75	N
57	0.105	0.033	0.46	A
58	0.026	0.003	1.06	A
61	0.41	0.13	6.33	N
66	0.098	0.011	0.33	A
67	0.040	0.004	0.79	A
68	0.0		1.56	A
71	0.10	0.02	0.37	A
77	0.039	0.004	0.81	A
78	0.04	0.005	0.79	A
81	0.092	0.0046	0.21	A
82	0.15	0.02	1.33	A
84	0.081	0.002	0.00	A
86	0.063	0.006	0.35	A
88	2.16	0.10	39.98	N
90	0.0961	0.0026	0.29	A
91	0.00100	0.00030	1.54	A
92	0.10	0.04	0.37	A
95	0.026	0.004	1.06	A
97	0.0992	0.0089	0.35	A
100	0.02	0.005	1.17	A
103	0.03	0.0004	0.98	A

## Reported Results for Gross beta Determination in Sample 5

TABLE 49. Target values

Parameter	Value
Robust Mean, $counts/cm^2/second$	0.158
Robust SD, $counts/cm^2/second$	0.084
N	189

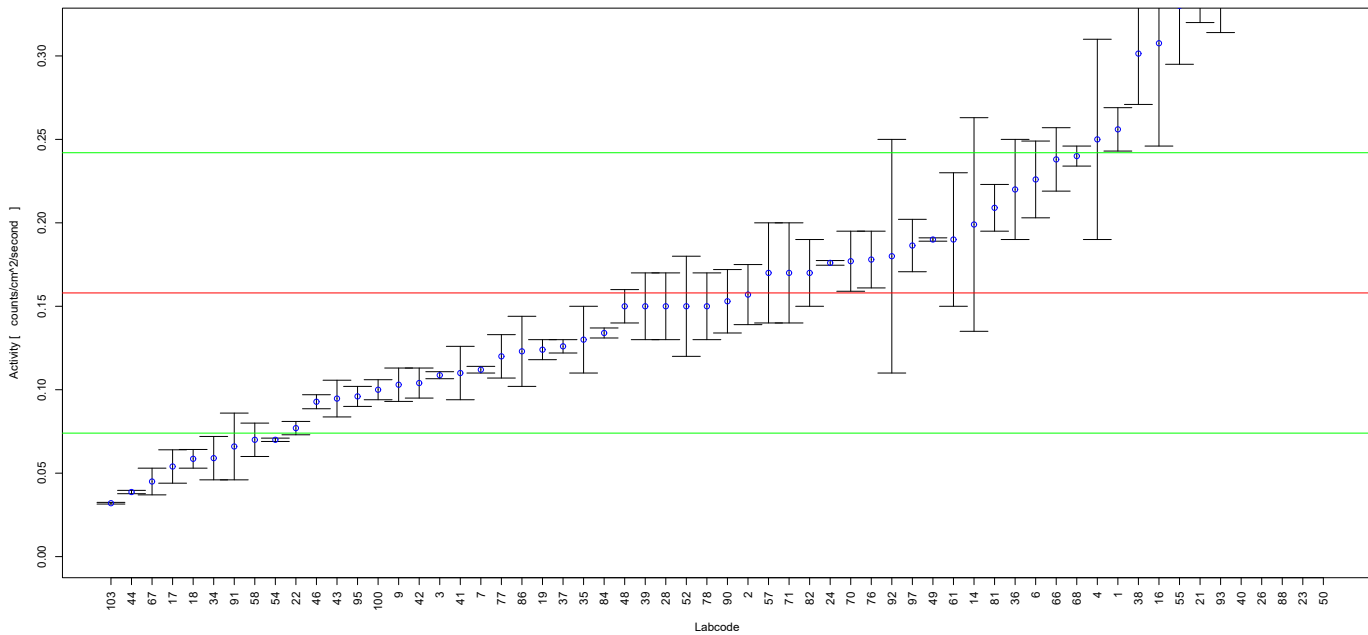


FIGURE 41. Reported results and evaluation parameters for Gross beta in Sample 5.

TABLE 50. IC Evaluation Results for Gross beta in Sample 5, Rep. Value and Rep. Unc. in  $counts/cm^2/second$

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	0.256	0.013	1.17	A
2	0.157	0.018	0.01	A
3	0.1087	0.0021	0.59	A
4	0.25	0.06	1.10	A
6	0.226	0.023	0.81	A
7	0.112	0.002	0.55	A
9	0.103	0.010	0.65	A
14	0.199	0.064	0.49	A
16	0.3076	0.0616	1.78	A
17	0.054	0.010	1.24	A
18	0.0586	0.0056	1.18	A
19	0.124	0.006	0.40	A
21	0.34	0.02	2.17	W
22	0.077	0.004	0.96	A
23	4.83	0.71	55.62	N
24	0.1760	0.0014	0.21	A
26	1.30	0.20	13.60	N
28	0.15	0.02	0.10	A
34	0.059	0.013	1.18	A
35	0.13	0.02	0.33	A
36	0.22	0.03	0.74	A

TABLE 50. IC Evaluation Results for Gross beta in Sample 5, Rep. Value and Rep. Unc. in *counts/cm<sup>2</sup>/second*

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
37	0.126	0.004	0.38	A
38	0.3014	0.03046	1.71	A
39	0.15	0.02	0.10	A
40	0.400	0.016	2.88	W
41	0.110	0.016	0.57	A
42	0.104	0.009	0.64	A
43	0.0947	0.0110	0.75	A
44	0.0387	0.001	1.42	A
46	0.0928	0.0042	0.78	A
48	0.15	0.01	0.10	A
49	0.19	0.001	0.38	A
50	8.78	1	102.64	N
52	0.15	0.03	0.10	A
54	0.07	0.001	1.05	A
55	0.330	0.035	2.05	W
57	0.17	0.03	0.14	A
58	0.07	0.01	1.05	A
61	0.19	0.04	0.38	A
66	0.238	0.019	0.95	A
67	0.045	0.008	1.35	A
68	0.24	0.006	0.98	A
70	0.177	0.018	0.23	A
71	0.17	0.03	0.14	A
76	0.178	0.017	0.24	A
77	0.12	0.013	0.45	A
78	0.15	0.02	0.10	A
81	0.209	0.014	0.61	A
82	0.17	0.02	0.14	A
84	0.134	0.003	0.29	A
86	0.123	0.021	0.42	A
88	2.12	0.09	23.36	N
90	0.153	0.019	0.06	A
91	0.066	0.020	1.10	A
92	0.18	0.07	0.26	A
93	0.387	0.073	2.73	W
95	0.096	0.006	0.74	A
97	0.1864	0.0157	0.34	A
100	0.1	0.006	0.69	A
103	0.032	0.0005	1.50	A

## Reported Results for Cs-137 Determination in Sample 5

TABLE 51. Target values

Parameter	Value
Robust Mean, $Bq/cm^2$	0.332
Robust SD, $Bq/cm^2$	0.048
N	196

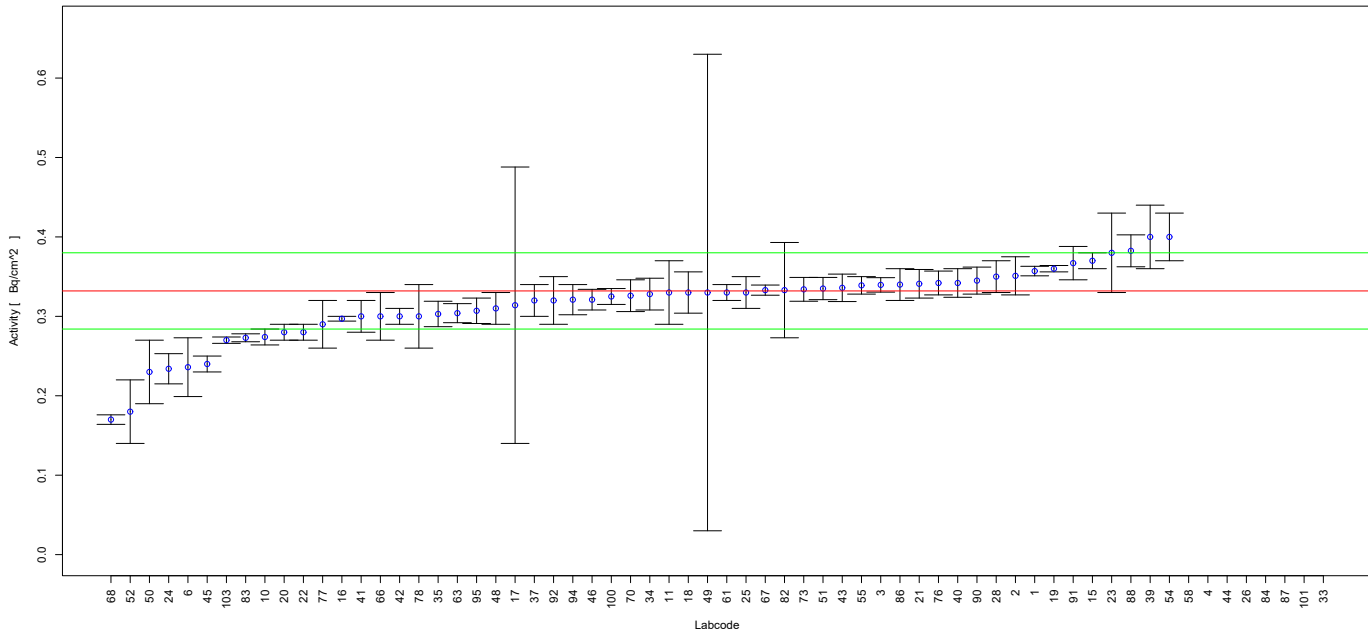


FIGURE 42. Reported results and evaluation parameters for Cs-137 in Sample 5.

TABLE 52. IC Evaluation Results for Cs-137 in Sample 5, Rep. Value and Rep. Unc. in  $Bq/cm^2$

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	0.357	0.006	0.52	A
2	0.351	0.024	0.40	A
3	0.3396	0.0091	0.16	A
4	1.1	0.1	16.00	N
6	0.236	0.037	2.00	A
10	0.274	0.010	1.21	A
11	0.33	0.04	0.04	A
15	0.37	0.01	0.79	A
16	0.297	0.003	0.73	A
17	0.314	0.174	0.38	A
18	0.33	0.026	0.04	A
19	0.36	0.004	0.58	A
20	0.28	0.01	1.08	A
21	0.341	0.018	0.19	A
22	0.28	0.01	1.08	A
23	0.38	0.05	1.00	A
24	0.234	0.019	2.04	W
25	0.33	0.02	0.04	A
26	1.56	0.03	25.58	N
28	0.35	0.02	0.37	A
33	840	45	17493.08	N



TABLE 52. IC Evaluation Results for Cs-137 in Sample 5, Rep. Value and Rep. Unc. in  $Bq/cm^2$ 

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
34	0.328	0.020	0.08	A
35	0.303	0.016	0.60	A
37	0.32	0.02	0.25	A
39	0.40	0.04	1.42	A
40	0.342	0.018	0.21	A
41	0.30	0.02	0.67	A
42	0.30	0.01	0.67	A
43	0.3359	0.01728	0.08	A
44	1.29	0.01	19.96	N
45	0.24	0.01	1.92	A
46	0.321	0.013	0.23	A
48	0.31	0.02	0.46	A
49	0.33	0.3	0.04	A
50	0.23	0.04	2.12	W
51	0.335	0.014	0.06	A
52	0.18	0.04	3.17	N
54	0.4	0.03	1.42	A
55	0.339	0.011	0.15	A
58	0.96	0.10	13.08	N
61	0.33	0.01	0.04	A
63	0.304	0.012	0.58	A
66	0.30	0.03	0.67	A
67	0.333	0.0064	0.02	A
68	0.17	0.006	3.38	N
70	0.326	0.020	0.13	A
73	0.334	0.015	0.04	A
76	0.342	0.015	0.21	A
77	0.29	0.03	0.88	A
78	0.3	0.04	0.67	A
82	0.333	0.06	0.02	A
83	0.273	0.005	1.23	A
84	3.57	0.18	67.46	N
86	0.34	0.02	0.17	A
87	5.3	0.20	103.50	N
88	0.3825	0.0201	1.05	A
90	0.345	0.017	0.27	A
91	0.367	0.021	0.73	A
92	0.32	0.03	0.25	A
94	0.321	0.019	0.23	A
95	0.307	0.016	0.52	A
100	0.325	0.010	0.15	A
101	47.7	3.5	986.83	N
103	0.270	0.004	1.29	A

## Reported Results for Pu-239 Determination in Sample 5

TABLE 53. Target values

Parameter	Value
Robust Mean, $Bq/cm^2$	0.236
Robust SD, $Bq/cm^2$	0.073
N	79

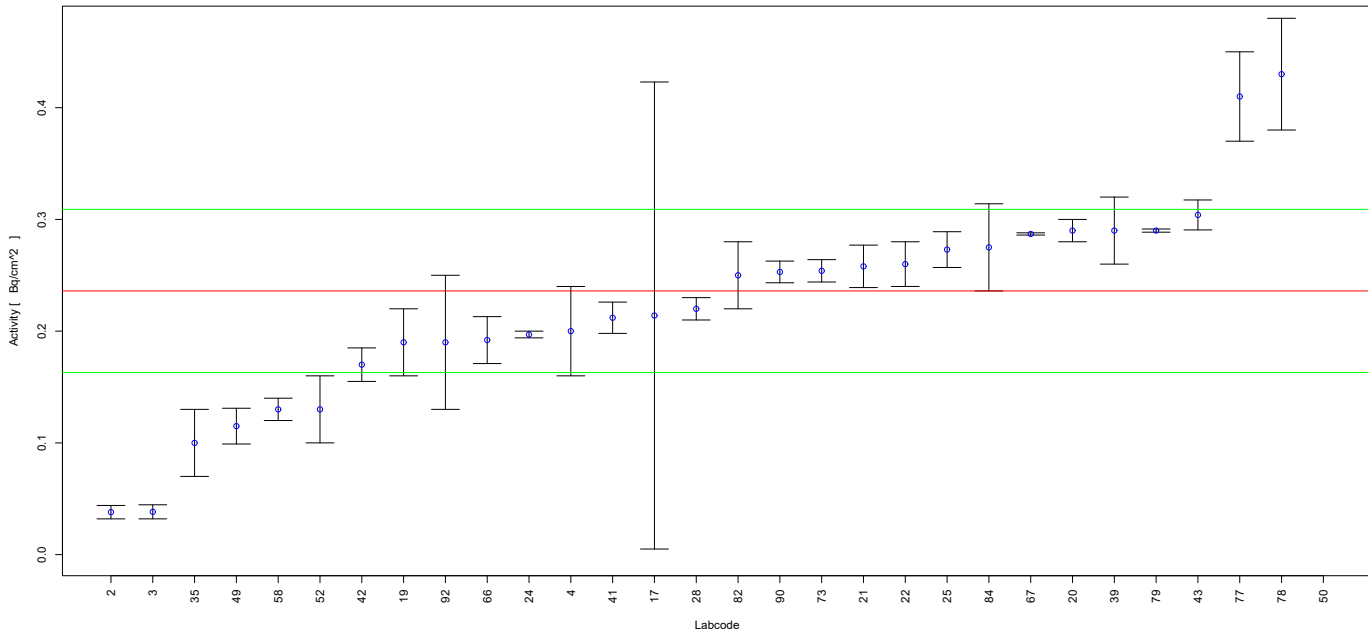


FIGURE 43. Reported results and evaluation parameters for Pu-239 in Sample 5.

TABLE 54. IC Evaluation Results for Pu-239 in Sample 5, Rep. Value and Rep. Unc. in  $Bq/cm^2$

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	0.038	0.006	2.71	W
3	0.0383	0.0063	2.71	W
4	0.20	0.04	0.49	A
17	0.214	0.209	0.30	A
19	0.19	0.03	0.63	A
20	0.29	0.01	0.74	A
21	0.258	0.019	0.30	A
22	0.26	0.02	0.33	A
24	0.197	0.003	0.53	A
25	0.273	0.016	0.51	A
28	0.22	0.01	0.22	A
35	0.1	0.03	1.86	A
39	0.29	0.03	0.74	A
41	0.212	0.014	0.33	A
42	0.17	0.015	0.90	A
43	0.304	0.0134	0.93	A
49	0.115	0.016	1.66	A
50	0.98	0.03	10.19	N
52	0.13	0.03	1.45	A
58	0.13	0.01	1.45	A
66	0.192	0.021	0.60	A

TABLE 54. IC Evaluation Results for Pu-239 in Sample 5, Rep. Value and Rep. Unc. in  $Bq/cm^2$

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
67	0.287	0.001	0.70	A
73	0.254	0.01	0.25	A
77	0.41	0.04	2.38	W
78	0.43	0.05	2.66	W
79	0.29	0.00142	0.74	A
82	0.25	0.03	0.19	A
84	0.275	0.039	0.53	A
90	0.253	0.0097	0.23	A
92	0.19	0.06	0.63	A

## 5 Gamma spectrum analysis exercise results (Sample 7)

For Sample 07 (gamma-ray spectrum analysis exercise), the Z-Score evaluation is only calculated for those analytes which were reported by > 30 participants.

Seven analytes have an overall single reporting occurrence; for the ALMERA network, Ce-144, , Np-239 and Te-132 were reported in the spectrum by the same laboratory and Eu-155, I-131 and Ru-106 were each reported by 3 different laboratories.

### Reported Results for K-40 Determination in Sample 7

TABLE 55. Target values

Parameter	Value
Robust Mean, Bq/kg	449.74
Robust SD, Bq/kg	31.25
N	193

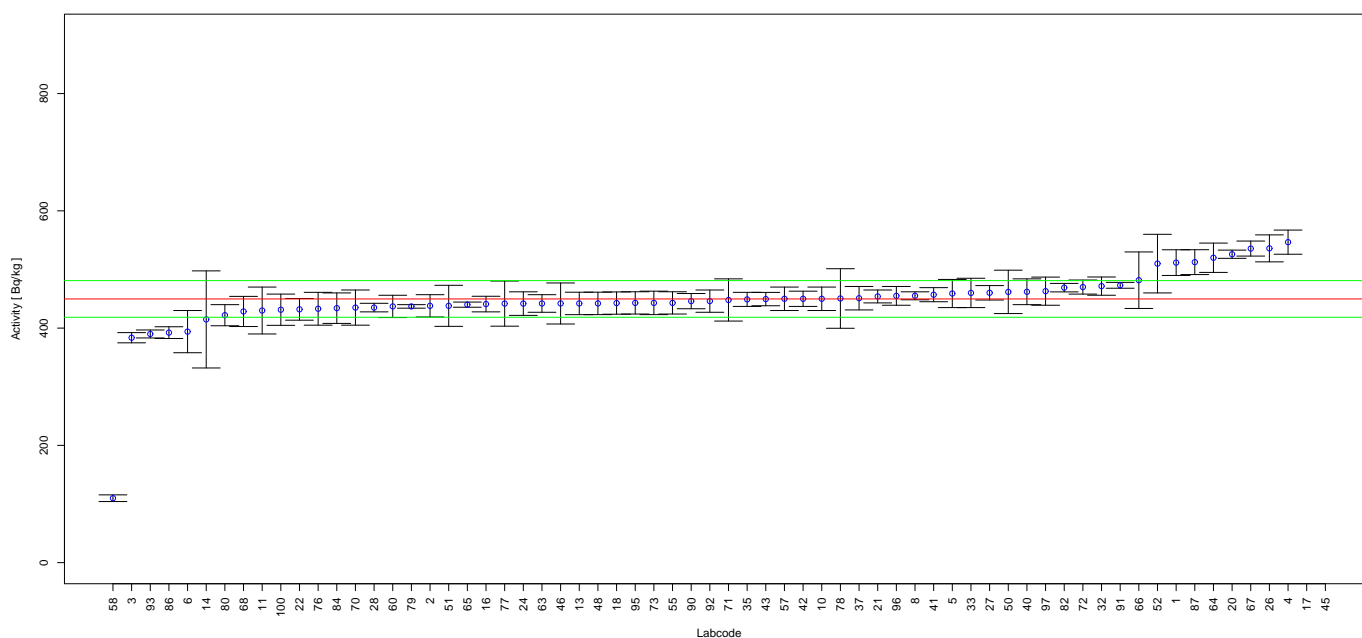


FIGURE 44. Reported results and evaluation parameters for K-40 in Sample 7.

TABLE 56. IC Evaluation Results for K-40 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	511.7	21.9	1.98	A
2	438.0	19.0	0.38	A
3	383.6	8.7	2.12	W
4	546.6	20.6	3.10	N
5	459	24	0.30	A
6	394	36	1.78	A
8	455.1	6.8	0.17	A
10	450	20	0.01	A
11	430	40	0.63	A
13	442.07	19.14	0.25	A
14	414.81	82.79	1.12	A
16	441	13.3	0.28	A
17	5700	400	168.01	N

TABLE 56. IC Evaluation Results for K-40 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
18	442.7	19.0	0.23	A
20	526	7	2.44	W
21	454	11	0.14	A
22	432	18.5	0.57	A
24	441.8	20.1	0.25	A
26	536	23	2.76	W
27	460.2	12.3	0.33	A
28	435	7.3	0.47	A
32	471.61	15.56	0.70	A
33	460	25	0.33	A
35	449	12	0.02	A
37	451	20	0.04	A
40	462	22	0.39	A
41	457	12	0.23	A
42	450	13	0.01	A
43	449.5	11.38	0.01	A
45	42896.5	525	1358.30	N
46	442	35	0.25	A
48	442.13	19.13	0.24	A
50	461.8	37	0.39	A
51	438	35	0.38	A
52	510	50	1.93	A
55	443	19	0.22	A
57	450	20	0.01	A
58	109.9	5.7	10.87	N
60	437	19	0.41	A
63	442	15	0.25	A
64	520	25	2.25	W
65	440	4.4	0.31	A
66	481.70	48.20	1.02	A
67	535.66	12.80	2.75	W
68	428.4	25.7	0.68	A
70	435	30	0.47	A
71	448	36	0.06	A
72	470	12	0.65	A
73	443	20	0.22	A
76	433	28	0.54	A
77	441.8	38.5	0.25	A
78	450.5	50.8	0.02	A
79	437	3	0.41	A
80	422	18	0.89	A
82	469	7.23	0.62	A
84	434	26	0.50	A
86	392.3	10.0	1.84	A
87	512.5	21.2	2.01	W
90	446	13	0.12	A
91	473	5	0.74	A
92	446	19	0.12	A
93	390	6.79	1.91	A
95	443	19	0.22	A
96	455	16	0.17	A
97	463	24	0.42	A
100	431.37	26.64	0.59	A

## Reported Results for Mn-54 Determination in Sample 7

TABLE 57. Target values

Parameter	Value
Robust Mean, Bq/kg	0.59
Robust SD, Bq/kg	0.08
N	17

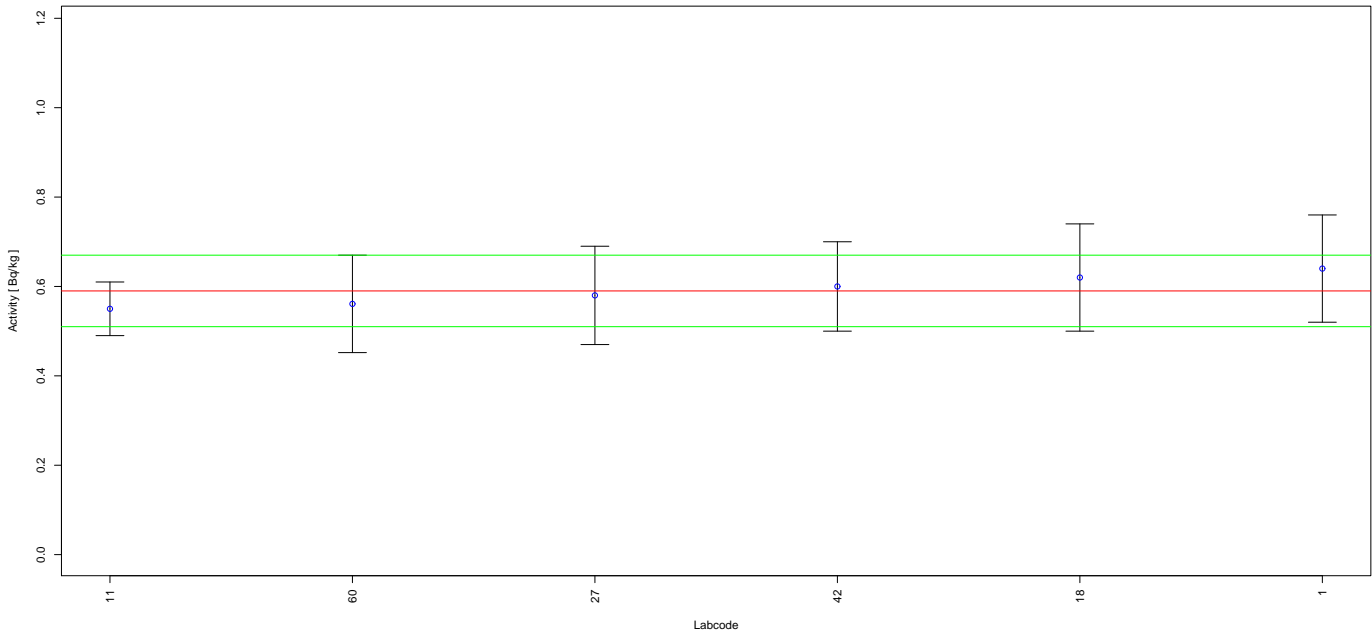


FIGURE 45. Reported results and evaluation parameters for Mn-54 in Sample 7.

TABLE 58. IC Evaluation Results for Mn-54 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
1	0.64	0.12	0.63
11	0.55	0.06	0.50
18	0.62	0.12	0.38
27	0.58	0.11	0.13
42	0.6	0.1	0.13
60	0.561	0.109	0.36

## Reported Results for Co-60 Determination in Sample 7

TABLE 59. Target values

Parameter	Value
Robust Mean, Bq/kg	123.96
Robust SD, Bq/kg	8.12
N	175

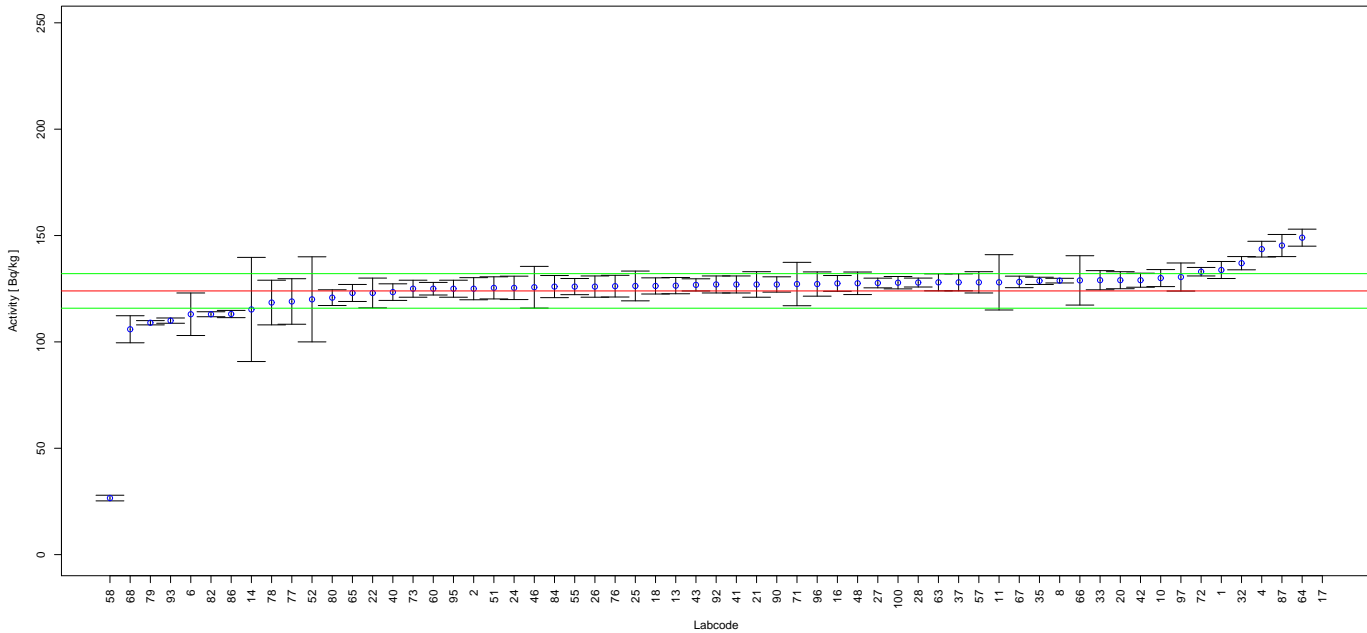


FIGURE 46. Reported results and evaluation parameters for Co-60 in Sample 7.

TABLE 60. IC Evaluation Results for Co-60 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	133.8	4.0	1.21	A
2	125.0	5.2	0.13	A
4	143.6	3.7	2.42	W
6	113	10	1.35	A
8	128.8	1.1	0.60	A
10	130	4	0.74	A
11	128	13	0.50	A
13	126.45	3.82	0.31	A
14	115.25	24.48	1.07	A
16	127.5	3.7	0.44	A
17	1340	80	149.76	N
18	126.31	3.80	0.29	A
20	129	4	0.62	A
21	127	6	0.37	A
22	123	7	0.12	A
24	125.4	5.5	0.18	A
25	126.3	7.0	0.29	A
26	126	5	0.25	A
27	127.69	2.28	0.46	A
28	127.9	2.1	0.49	A
32	137	3.11	1.61	A

TABLE 60. IC Evaluation Results for Co-60 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
33	129	4.5	0.62	A
35	128.7	1.7	0.58	A
37	128	4	0.50	A
40	123.4	3.9	0.07	A
41	127	4	0.37	A
42	129	3.3	0.62	A
43	126.8	2.859	0.35	A
46	125.7	9.8	0.21	A
48	127.55	5.30	0.44	A
51	125.4	5.2	0.18	A
52	120	20	0.49	A
55	126	3.8	0.25	A
57	128	5	0.50	A
58	26.59	1.33	11.99	N
60	125	2.96	0.13	A
63	128	4	0.50	A
64	149	4	3.08	N
65	123	4	0.12	A
66	128.91	11.60	0.61	A
67	128.2	2.71	0.52	A
68	105.94	6.36	2.22	W
71	127.2	10.2	0.40	A
72	133	2	1.11	A
73	125	4	0.13	A
76	126.2	5.1	0.28	A
77	119	10.7	0.61	A
78	118.5	10.5	0.67	A
79	109	1	1.84	A
80	120.8	3.7	0.39	A
82	113	1.17	1.35	A
84	126	5.2	0.25	A
86	113.1	1.7	1.34	A
87	145.3	5.2	2.63	W
90	127	3.6	0.37	A
92	127	4	0.37	A
93	110	1.24	1.72	A
95	125	4	0.13	A
96	127.2	5.7	0.40	A
97	130.5	6.6	0.81	A
100	127.83	2.91	0.48	A



## Reported Results for Cd-109 Determination in Sample 7

TABLE 61. Target values

Parameter	Value
Robust Mean, Bq/kg	55.5
Robust SD, Bq/kg	39.4
N	8



FIGURE 47. Reported results and evaluation parameters for Cd-109 in Sample 7.

TABLE 62. IC Evaluation Results for Cd-109 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
1	109.7	8.4	1.38
28	65.1	2.1	0.24

## Reported Results for Sn-113 Determination in Sample 7

TABLE 63. Target values

Parameter	Value
Robust Mean, Bq/kg	1.84
Robust SD, Bq/kg	0.26
N	27

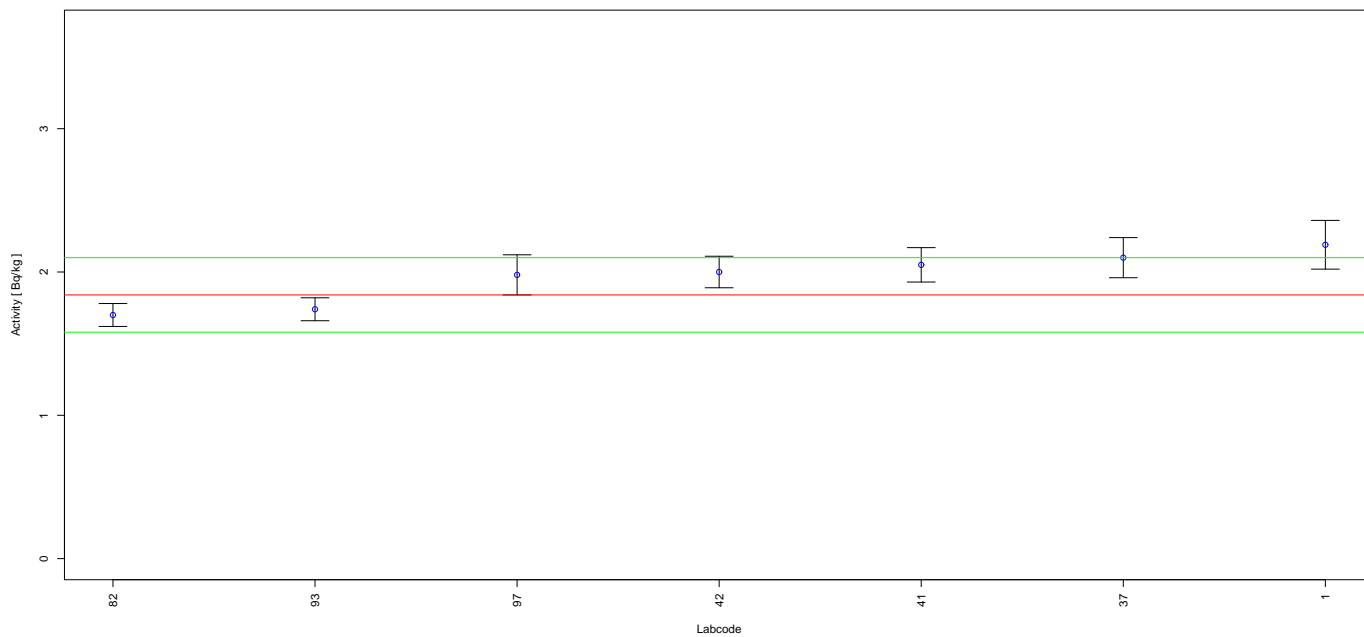


FIGURE 48. Reported results and evaluation parameters for Sn-113 in Sample 7.

TABLE 64. IC Evaluation Results for Sn-113 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
1	2.19	0.17	1.35
37	2.10	0.14	1.00
41	2.05	0.12	0.81
42	2.00	0.11	0.62
82	1.70	0.08	0.54
93	1.74	0.08	0.38
97	1.98	0.14	0.54

## Reported Results for Ba-133 Determination in Sample 7

TABLE 65. Target values

Parameter	Value
Robust Mean, Bq/kg	62.13
Robust SD, Bq/kg	8.76
N	165

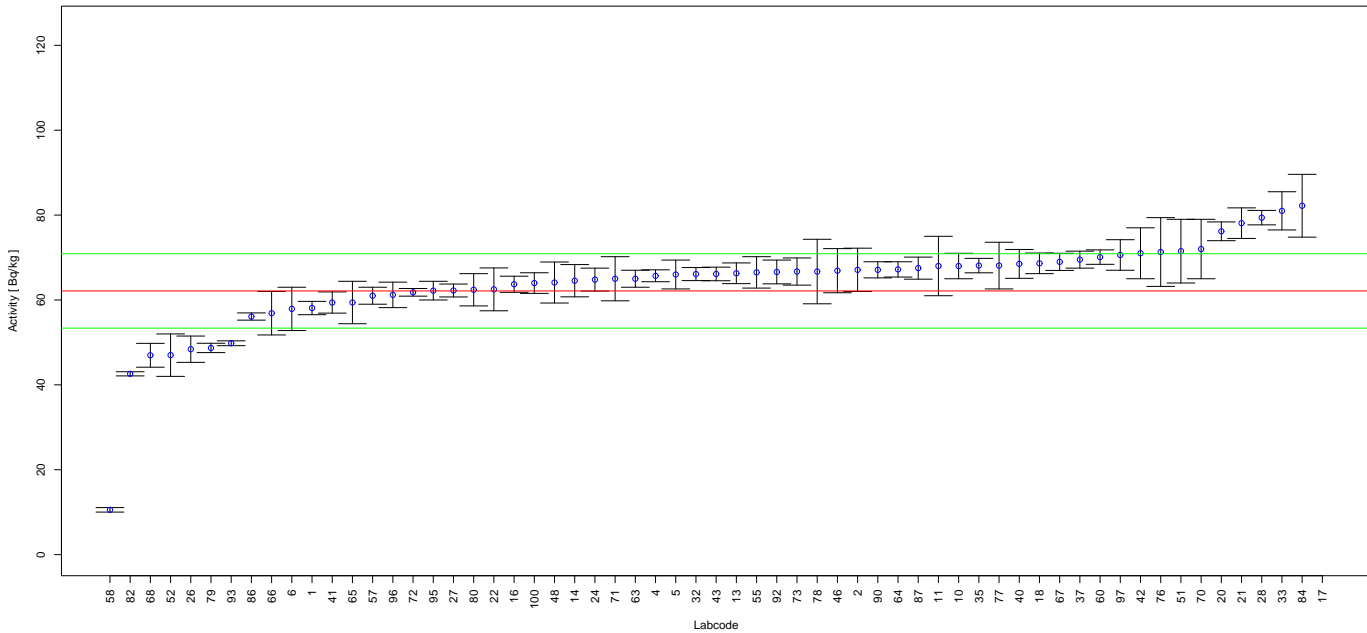


FIGURE 49. Reported results and evaluation parameters for Ba-133 in Sample 7.

TABLE 66. IC Evaluation Results for Ba-133 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	58.1	1.57	0.46	A
2	67.1	5.1	0.57	A
4	65.7	1.4	0.41	A
5	66.0	3.4	0.44	A
6	57.9	5.1	0.48	A
10	68	3	0.67	A
11	68	7	0.67	A
13	66.29	2.44	0.47	A
14	64.54	3.80	0.28	A
16	63.7	1.9	0.18	A
17	550	30	55.69	N
18	68.63	2.43	0.74	A
20	76.18	2.21	1.60	A
21	78.1	3.6	1.82	A
22	62.5	5.05	0.04	A
24	64.8	2.7	0.30	A
26	48.4	3.1	1.57	A
27	62.23	1.52	0.01	A
28	79.4	1.7	1.97	A
32	66.10	1.54	0.45	A
33	81	4.5	2.15	W

TABLE 66. IC Evaluation Results for Ba-133 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
35	68.1	1.7	0.68	A
37	69.5	2.0	0.84	A
40	68.5	3.4	0.73	A
41	59.4	2.5	0.31	A
42	71.0	6.0	1.01	A
43	66.13	1.6015	0.46	A
46	66.9	5.2	0.54	A
48	64.11	4.83	0.23	A
51	71.5	7.5	1.07	A
52	47	5	1.73	A
55	66.5	3.7	0.50	A
57	61	2	0.13	A
58	10.55	0.53	5.89	N
60	70.1	1.70	0.91	A
63	65	2	0.33	A
64	67.2	1.8	0.58	A
65	59.4	5	0.31	A
66	56.88	5.12	0.60	A
67	68.98	2.02	0.78	A
68	46.97	2.81	1.73	A
70	72	7	1.13	A
71	65.0	5.2	0.33	A
72	61.8	0.9	0.04	A
73	66.7	3.2	0.52	A
76	71.3	8.1	1.05	A
77	68.1	5.5	0.68	A
78	66.7	7.6	0.52	A
79	48.7	1.1	1.53	A
80	62.4	3.8	0.03	A
82	42.6	0.49	2.23	W
84	82.2	7.4	2.29	W
86	56.1	0.85	0.69	A
87	67.5	2.6	0.61	A
90	67.1	1.9	0.57	A
92	66.6	2.8	0.51	A
93	49.8	0.57	1.41	A
95	62.2	2.2	0.01	A
96	61.2	3.0	0.11	A
97	70.6	3.6	0.97	A
100	63.98	2.43	0.21	A

## Reported Results for Cs-134 Determination in Sample 7

TABLE 67. Target values

Parameter	Value
Robust Mean, Bq/kg	39.8
Robust SD, Bq/kg	3.85
N	175

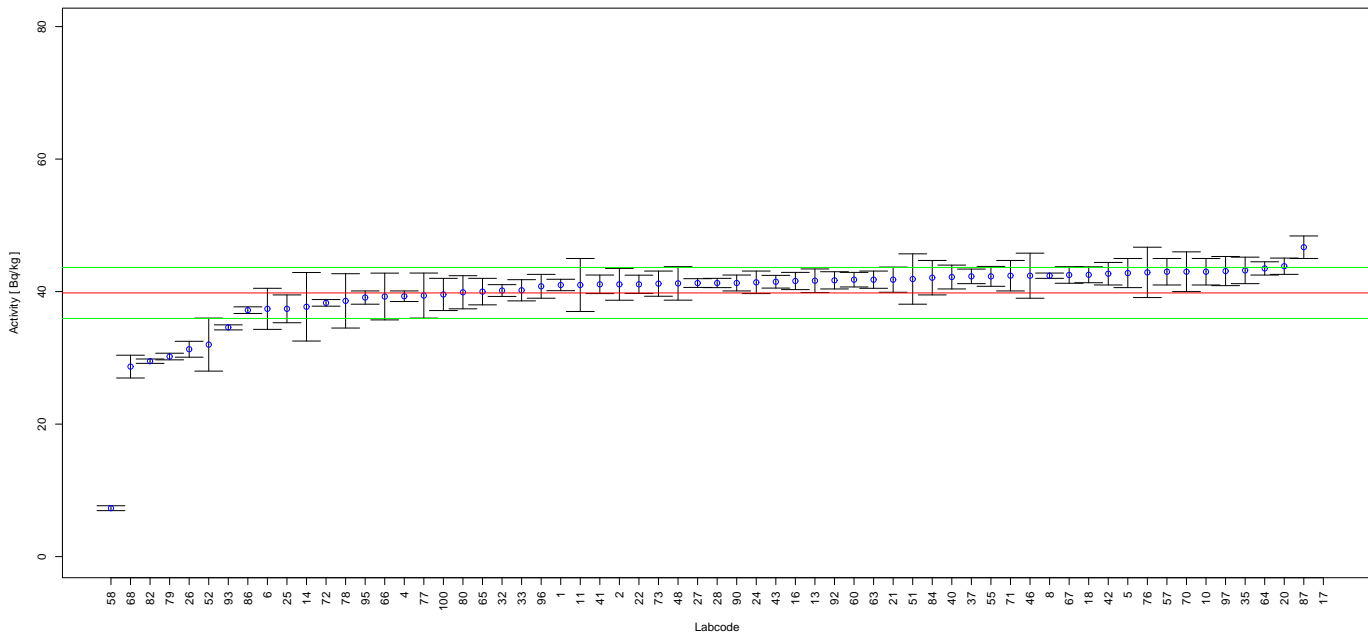


FIGURE 50. Reported results and evaluation parameters for Cs-134 in Sample 7.

TABLE 68. IC Evaluation Results for Cs-134 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	41.0	0.86	0.31	A
2	41.1	2.4	0.34	A
4	39.3	0.8	0.13	A
5	42.8	2.2	0.78	A
6	37.4	3.1	0.62	A
8	42.4	0.4	0.68	A
10	43	2	0.83	A
11	41	4	0.31	A
13	41.64	1.78	0.48	A
14	37.71	5.17	0.54	A
16	41.6	1.3	0.47	A
17	360	20	83.17	N
18	42.54	1.20	0.71	A
20	43.83	1.23	1.05	A
21	41.8	1.9	0.52	A
22	41.1	1.38	0.34	A
24	41.4	1.7	0.42	A
25	37.4	2.1	0.62	A
26	31.3	1.2	2.21	W
27	41.29	0.66	0.39	A
28	41.3	0.7	0.39	A

TABLE 68. IC Evaluation Results for Cs-134 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
32	40.16	0.89	0.09	A
33	40.2	1.6	0.10	A
35	43.2	2.0	0.88	A
37	42.3	1.1	0.65	A
40	42.2	1.8	0.62	A
41	41.1	1.4	0.34	A
42	42.7	1.7	0.75	A
43	41.49	0.96	0.44	A
46	42.4	3.4	0.68	A
48	41.24	2.53	0.37	A
51	41.9	3.8	0.55	A
52	32	4	2.03	W
55	42.3	1.5	0.65	A
57	43	2	0.83	A
58	7.31	0.37	8.44	N
60	41.8	1.10	0.52	A
63	41.8	1.3	0.52	A
64	43.5	1.0	0.96	A
65	40	2	0.05	A
66	39.26	3.53	0.14	A
67	42.51	1.25	0.70	A
68	28.68	1.72	2.89	W
70	43	3	0.83	A
71	42.4	2.3	0.68	A
72	38.3	0.5	0.39	A
73	41.2	1.9	0.36	A
76	42.9	3.8	0.81	A
77	39.4	3.4	0.10	A
78	38.6	4.1	0.31	A
79	30.2	0.5	2.49	W
80	39.9	2.5	0.03	A
82	29.5	0.33	2.68	W
84	42.1	2.6	0.60	A
86	37.2	0.5	0.68	A
87	46.7	1.7	1.79	A
90	41.3	1.2	0.39	A
92	41.7	1.3	0.49	A
93	34.6	0.38	1.35	A
95	39.1	1.0	0.18	A
96	40.8	1.8	0.26	A
97	43.1	2.2	0.86	A
100	39.57	2.43	0.06	A

## Reported Results for Cs-137 Determination in Sample 7

TABLE 69. Target values

Parameter	Value
Robust Mean, Bq/kg	83.2
Robust SD, Bq/kg	4.79
N	175

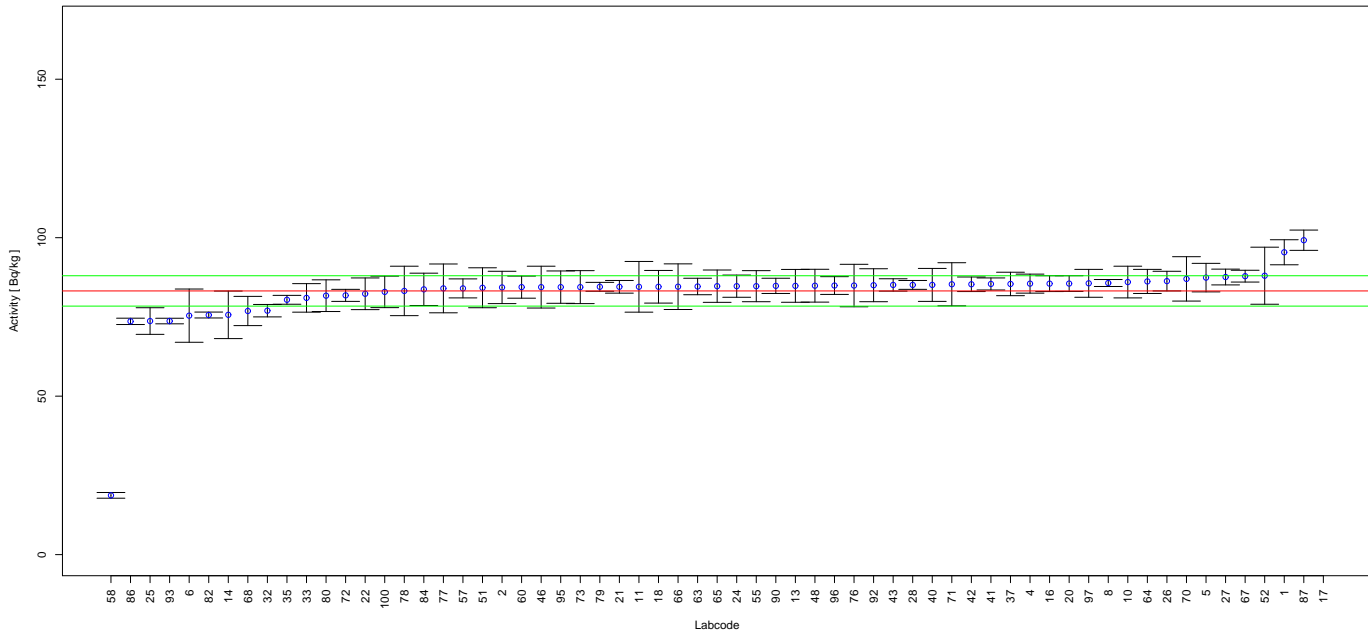


FIGURE 51. Reported results and evaluation parameters for Cs-137 in Sample 7.

TABLE 70. IC Evaluation Results for Cs-137 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	95.4	3.95	2.55	W
2	84.3	5.1	0.23	A
4	85.5	3.0	0.48	A
5	87.4	4.5	0.88	A
6	75.4	8.4	1.63	A
8	85.7	1.1	0.52	A
10	86	5	0.58	A
11	84.5	8	0.27	A
13	84.80	5.18	0.33	A
14	75.66	7.50	1.57	A
16	85.5	2.5	0.48	A
17	930	60	176.78	N
18	84.51	5.15	0.27	A
20	85.52	2.48	0.48	A
21	84.5	2.0	0.27	A
22	82.3	5	0.19	A
24	84.7	3.5	0.31	A
25	73.7	4.2	1.98	A
26	86.3	3.1	0.65	A
27	87.59	2.49	0.92	A
28	85.1	1.4	0.40	A

TABLE 70. IC Evaluation Results for Cs-137 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
32	76.97	1.96	1.30	A
33	81	4.5	0.46	A
35	80.4	1.4	0.58	A
37	85.4	3.7	0.46	A
40	85.1	5.2	0.40	A
41	85.4	1.9	0.46	A
42	85.3	2.3	0.44	A
43	85.09	1.949	0.39	A
46	84.4	6.6	0.25	A
48	84.85	5.18	0.34	A
51	84.2	6.3	0.21	A
52	88	9	1.00	A
55	84.7	4.9	0.31	A
57	84	3	0.17	A
58	18.7	0.9	13.47	N
60	84.4	3.49	0.25	A
63	84.6	2.6	0.29	A
64	86.2	3.8	0.63	A
65	84.7	5.1	0.31	A
66	84.54	7.20	0.28	A
67	87.86	1.86	0.97	A
68	76.87	4.61	1.32	A
70	87	7	0.79	A
71	85.3	6.8	0.44	A
72	81.8	1.9	0.29	A
73	84.4	5.2	0.25	A
76	84.9	6.7	0.35	A
77	84.0	7.7	0.17	A
78	83.2	7.8	0.00	A
79	84.5	1.4	0.27	A
80	81.7	5.0	0.31	A
82	75.6	0.93	1.59	A
84	83.7	5.1	0.10	A
86	73.6	1.0	2.00	A
87	99.2	3.2	3.34	N
90	84.8	2.4	0.33	A
92	85.0	5.2	0.38	A
93	73.7	0.88	1.98	A
95	84.4	5.1	0.25	A
96	84.9	2.8	0.35	A
97	85.6	4.4	0.50	A
100	82.90	4.97	0.06	A



## Reported Results for Tl-208 Determination in Sample 7

TABLE 71. Target values

Parameter	Value
Robust Mean, Bq/kg	13.25
Robust SD, Bq/kg	1.92
N	90

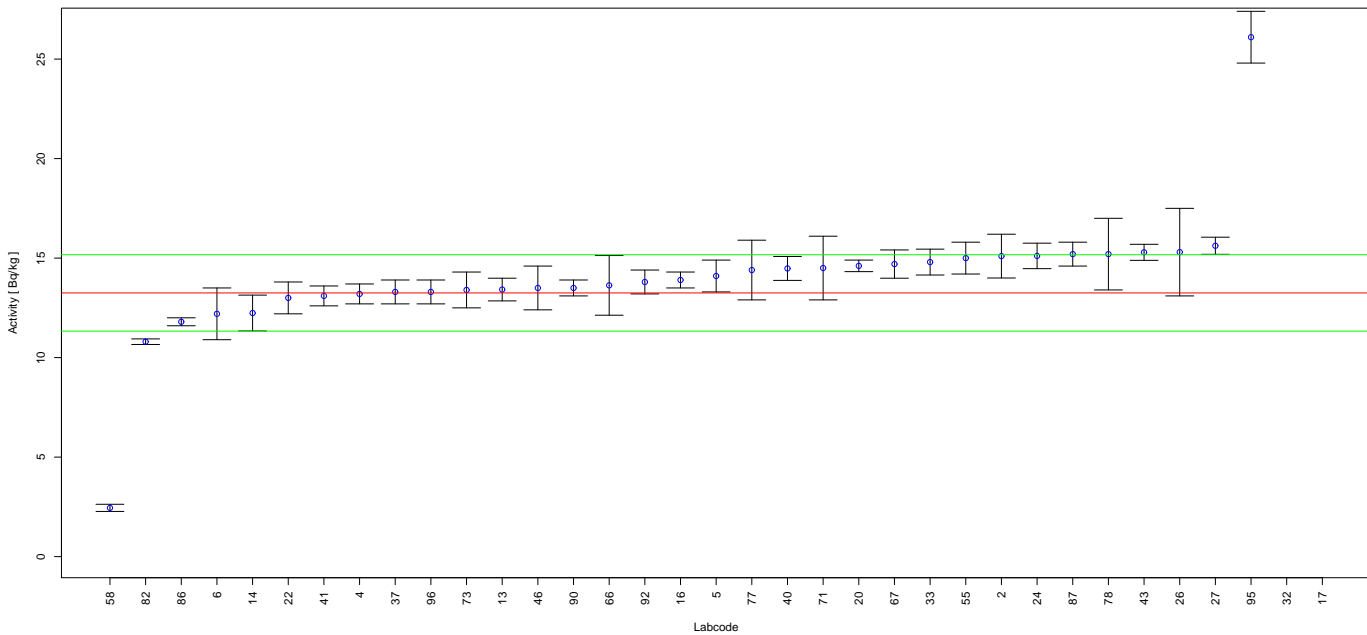


FIGURE 52. Reported results and evaluation parameters for Tl-208 in Sample 7.

TABLE 72. IC Evaluation Results for Tl-208 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	15.1	1.1	0.96	A
4	13.2	0.5	0.03	A
5	14.1	0.8	0.44	A
6	12.2	1.3	0.55	A
13	13.42	0.57	0.09	A
14	12.24	0.90	0.53	A
16	13.9	0.4	0.34	A
17	130	10	60.81	N
20	14.61	0.29	0.71	A
22	13	0.8	0.13	A
24	15.11	0.64	0.97	A
26	15.3	2.2	1.07	A
27	15.62	0.43	1.23	A
32	40.97	1.40	14.44	N
33	14.8	0.65	0.81	A
37	13.3	0.6	0.03	A
40	14.48	0.60	0.64	A
41	13.1	0.5	0.08	A
43	15.29	0.403	1.06	A
46	13.5	1.1	0.13	A
55	15	0.8	0.91	A

TABLE 72. IC Evaluation Results for Tl-208 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
58	2.45	0.18	5.63	N
66	13.63	1.50	0.20	A
67	14.70	0.71	0.76	A
71	14.5	1.6	0.65	A
73	13.4	0.9	0.08	A
77	14.4	1.5	0.60	A
78	15.2	1.8	1.02	A
82	10.8	0.14	1.28	A
86	11.8	0.2	0.76	A
87	15.2	0.6	1.02	A
90	13.5	0.40	0.13	A
92	13.8	0.6	0.29	A
95	26.1	1.3	6.69	N
96	13.3	0.6	0.03	A

## Reported Results for Pb-210 Determination in Sample 7

TABLE 73. Target values

Parameter	Value
Robust Mean, Bq/kg	621.79
Robust SD, Bq/kg	80.1
N	126

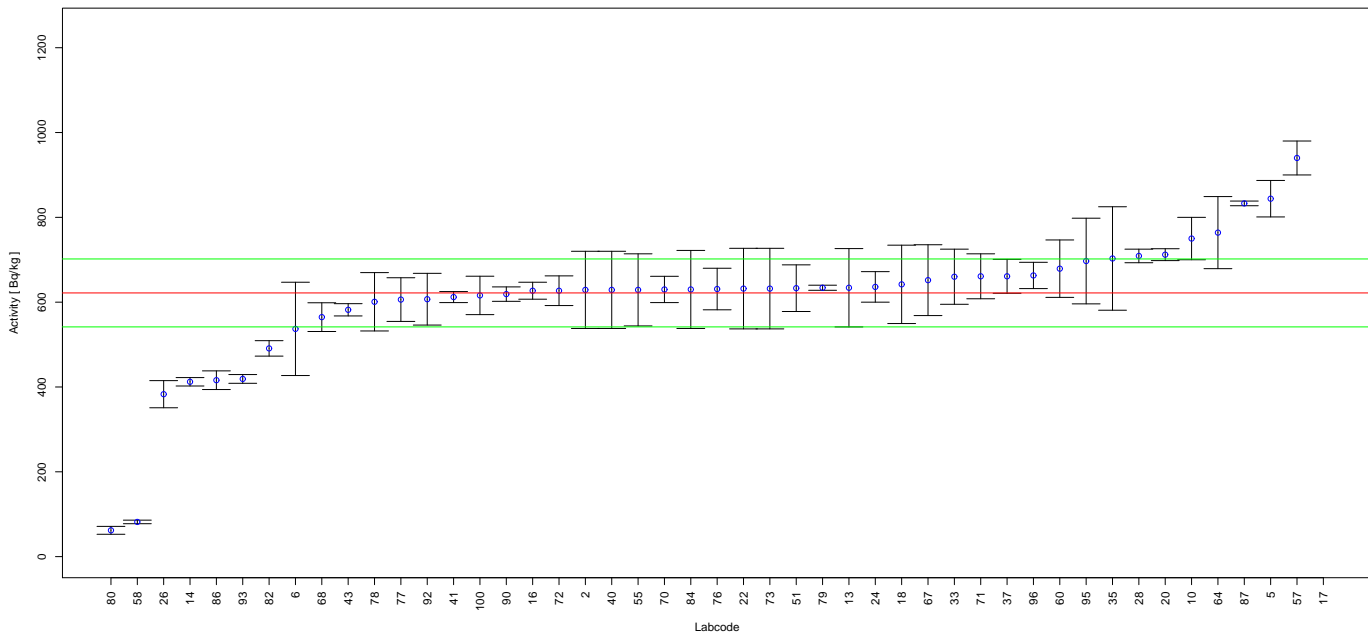


FIGURE 53. Reported results and evaluation parameters for Pb-210 in Sample 7.

TABLE 74. IC Evaluation Results for Pb-210 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	629.0	91.0	0.09	A
5	844	43	2.77	W
6	537	110	1.06	A
10	750	50	1.60	A
13	634.00	92.35	0.15	A
14	412.26	9.92	2.62	W
16	627	20	0.07	A
17	5100	400	55.91	N
18	642.0	92.4	0.25	A
20	712	14	1.13	A
22	632	95	0.13	A
24	636	36	0.18	A
26	383	32	2.98	W
28	709	16	1.09	A
33	660	65	0.48	A
35	703	122	1.01	A
37	661	40	0.49	A
40	629	91	0.09	A
41	612	13	0.12	A
43	582	14.45	0.50	A
51	633	55	0.14	A

TABLE 74. IC Evaluation Results for Pb-210 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
55	629	85	0.09	A
57	940	40	3.97	N
58	81.8	4.2	6.74	N
60	679	67.7	0.71	A
64	764	85	1.78	A
67	651.89	83.51	0.38	A
68	564.7	33.88	0.71	A
70	630	31	0.10	A
71	661	53	0.49	A
72	627	35	0.07	A
73	632	95	0.13	A
76	631	49	0.11	A
77	606.1	51.5	0.20	A
78	600.9	68.8	0.26	A
79	634	6	0.15	A
80	62.0	9.3	6.99	N
82	491	18.2	1.63	A
84	630	92	0.10	A
86	416.0	22.0	2.57	W
87	832.9	5.5	2.64	W
90	619	17	0.03	A
92	607	61	0.18	A
93	419	10.3	2.53	W
95	697	101	0.94	A
96	663	31	0.51	A
100	615.91	45.29	0.07	A

## Reported Results for Pb-212 Determination in Sample 7

TABLE 75. Target values

Parameter	Value
Robust Mean, Bq/kg	38.24
Robust SD, Bq/kg	3.99
N	96

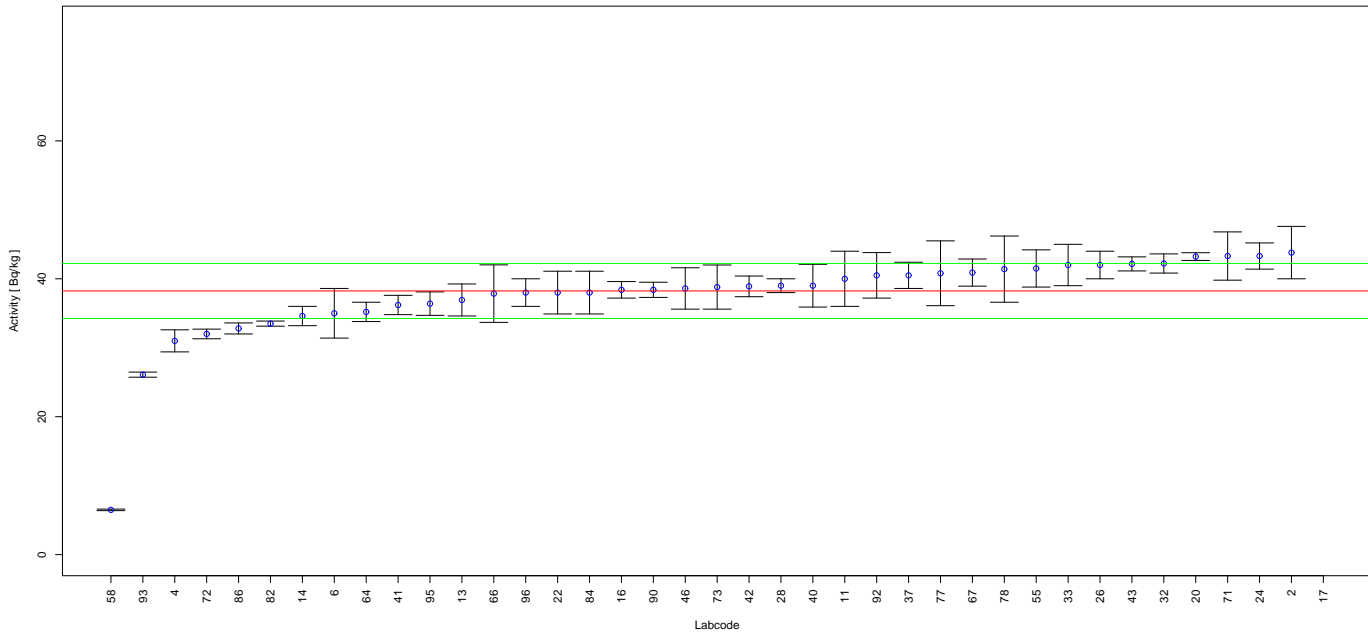


FIGURE 54. Reported results and evaluation parameters for Pb-212 in Sample 7.

TABLE 76. IC Evaluation Results for Pb-212 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	43.8	3.8	1.39	A
4	31.0	1.6	1.81	A
6	35.0	3.6	0.81	A
11	40	4	0.44	A
13	36.93	2.32	0.33	A
14	34.60	1.40	0.91	A
16	38.4	1.2	0.04	A
17	440	30	100.69	N
20	43.22	0.56	1.25	A
22	38	3.1	0.06	A
24	43.3	1.9	1.27	A
26	42	2	0.94	A
28	39.0	1.0	0.19	A
32	42.22	1.39	1.00	A
33	42	3	0.94	A
37	40.5	1.9	0.57	A
40	39.0	3.1	0.19	A
41	36.2	1.4	0.51	A
42	38.9	1.5	0.17	A
43	42.16	1.02	0.98	A
46	38.6	3.0	0.09	A

TABLE 76. IC Evaluation Results for Pb-212 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
55	41.5	2.7	0.82	A
58	6.49	0.11	7.96	N
64	35.2	1.4	0.76	A
66	37.85	4.17	0.10	A
67	40.90	1.97	0.67	A
71	43.3	3.5	1.27	A
72	32.0	0.7	1.56	A
73	38.8	3.2	0.14	A
77	40.8	4.7	0.64	A
78	41.4	4.8	0.79	A
82	33.5	0.37	1.19	A
84	38.0	3.1	0.06	A
86	32.8	0.8	1.36	A
90	38.4	1.1	0.04	A
92	40.5	3.3	0.57	A
93	26.1	0.37	3.04	N
95	36.4	1.7	0.46	A
96	38	2	0.06	A

## Reported Results for Bi-212 Determination in Sample 7

TABLE 77. Target values

Parameter	Value
Robust Mean, Bq/kg	39.39
Robust SD, Bq/kg	5.02
N	81

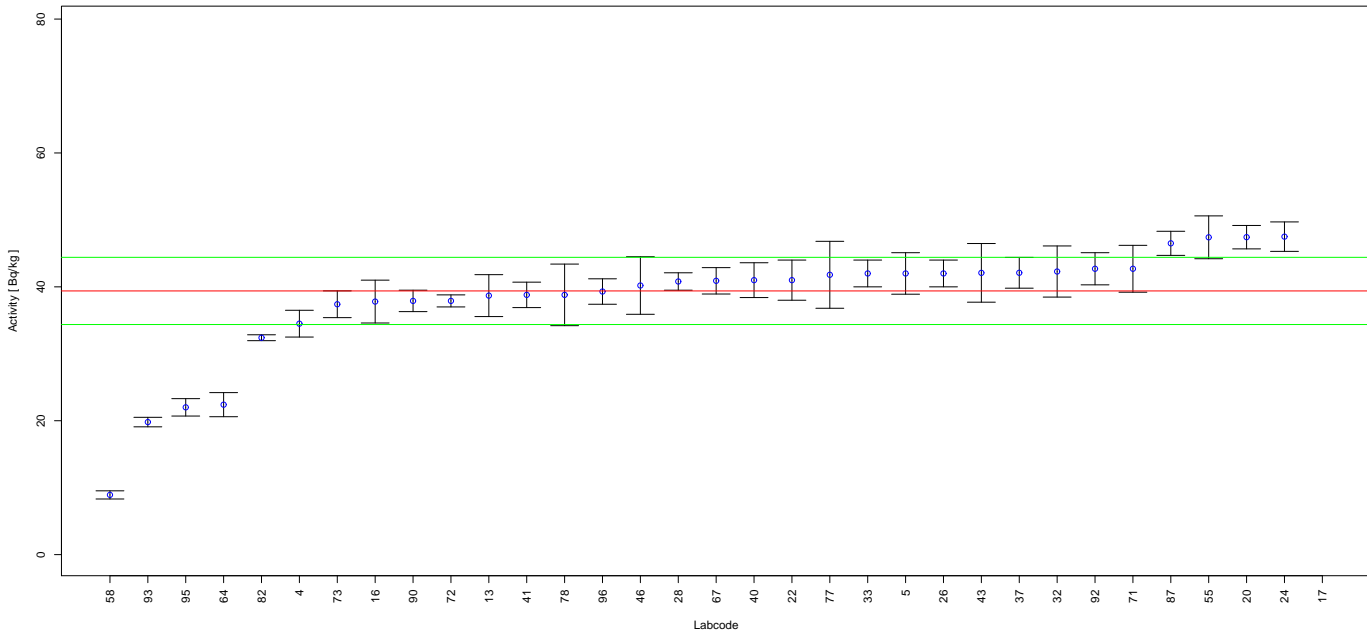


FIGURE 55. Reported results and evaluation parameters for Bi-212 in Sample 7.

TABLE 78. IC Evaluation Results for Bi-212 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
4	34.5	2	0.97	A
5	42.0	3.1	0.52	A
13	38.69	3.13	0.14	A
16	37.8	3.2	0.32	A
17	480	30	87.77	N
20	47.42	1.75	1.60	A
22	41	3	0.32	A
24	47.5	2.2	1.62	A
26	42	2	0.52	A
28	40.8	1.3	0.28	A
32	42.29	3.82	0.58	A
33	42	2	0.52	A
37	42.1	2.3	0.54	A
40	41.0	2.6	0.32	A
41	38.8	1.9	0.12	A
43	42.09	4.381	0.54	A
46	40.2	4.3	0.16	A
55	47.4	3.2	1.60	A
58	8.92	0.61	6.07	N
64	22.4	1.8	3.38	N
67	40.90	1.97	0.30	A

TABLE 78. IC Evaluation Results for Bi-212 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
71	42.7	3.5	0.66	A
72	37.9	0.9	0.30	A
73	37.4	2.0	0.40	A
77	41.8	5.0	0.48	A
78	38.8	4.6	0.12	A
82	32.4	0.44	1.39	A
87	46.5	1.8	1.42	A
90	37.9	1.6	0.30	A
92	42.7	2.4	0.66	A
93	19.8	0.71	3.90	N
95	22.0	1.3	3.46	N
96	39.3	1.9	0.02	A



## Reported Results for Bi-214 Determination in Sample 7

TABLE 79. Target values

Parameter	Value
Robust Mean, Bq/kg	31.49
Robust SD, Bq/kg	3.39
N	100

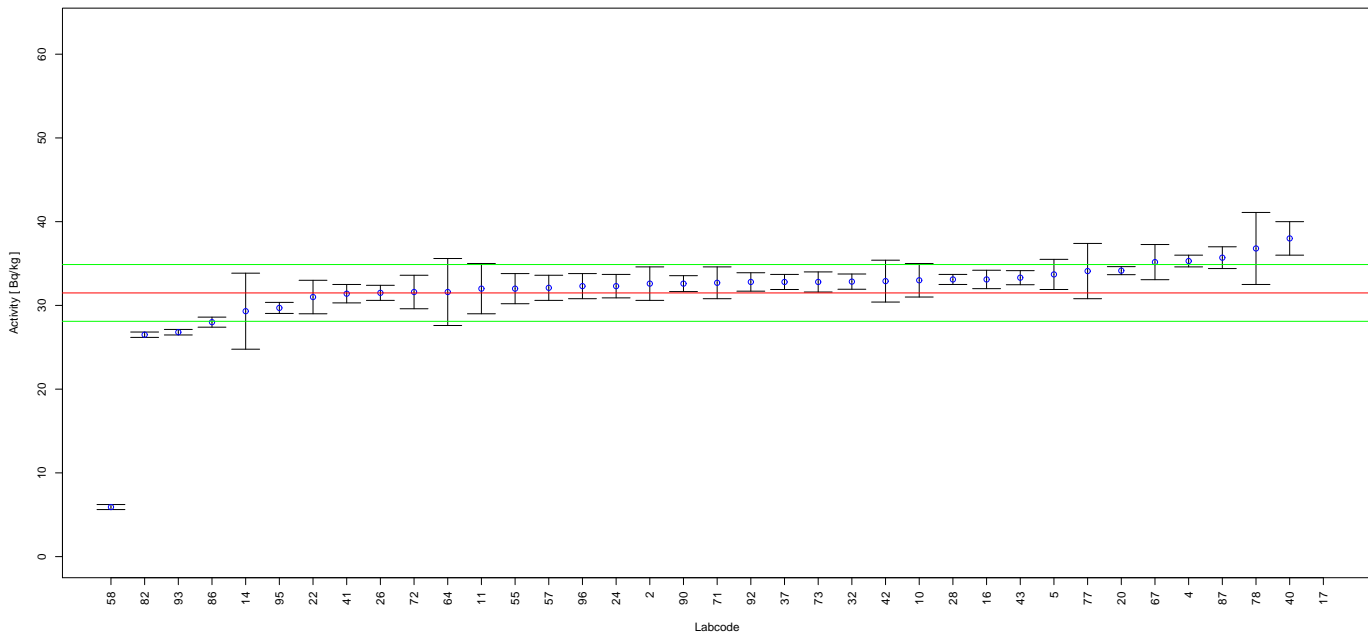


FIGURE 56. Reported results and evaluation parameters for Bi-214 in Sample 7.

TABLE 80. IC Evaluation Results for Bi-214 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	32.6	2.0	0.33	A
4	35.3	0.7	1.12	A
5	33.7	1.8	0.65	A
10	33	2	0.45	A
11	32	3	0.15	A
14	29.31	4.54	0.64	A
16	33.1	1.1	0.47	A
17	310	20	82.16	N
20	34.15	0.48	0.78	A
22	31	2	0.14	A
24	32.3	1.4	0.24	A
26	31.5	0.9	0.00	A
28	33.1	0.6	0.47	A
32	32.84	0.91	0.40	A
37	32.8	0.9	0.39	A
40	38.0	2.0	1.92	A
41	31.4	1.1	0.03	A
42	32.9	2.5	0.42	A
43	33.31	0.84	0.54	A
55	32	1.8	0.15	A
57	32.1	1.5	0.18	A

TABLE 80. IC Evaluation Results for Bi-214 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
58	5.92	0.30	7.54	N
64	31.6	4.0	0.03	A
67	35.17	2.10	1.09	A
71	32.7	1.9	0.36	A
72	31.6	2.0	0.03	A
73	32.8	1.2	0.39	A
77	34.1	3.3	0.77	A
78	36.8	4.3	1.57	A
82	26.5	0.32	1.47	A
86	28.0	0.6	1.03	A
87	35.7	1.3	1.24	A
90	32.6	0.95	0.33	A
92	32.8	1.1	0.39	A
93	26.8	0.33	1.38	A
95	29.7	0.66	0.53	A
96	32.3	1.5	0.24	A

## Reported Results for Pb-214 Determination in Sample 7

TABLE 81. Target values

Parameter	Value
Robust Mean, Bq/kg	32.86
Robust SD, Bq/kg	2.5
N	94

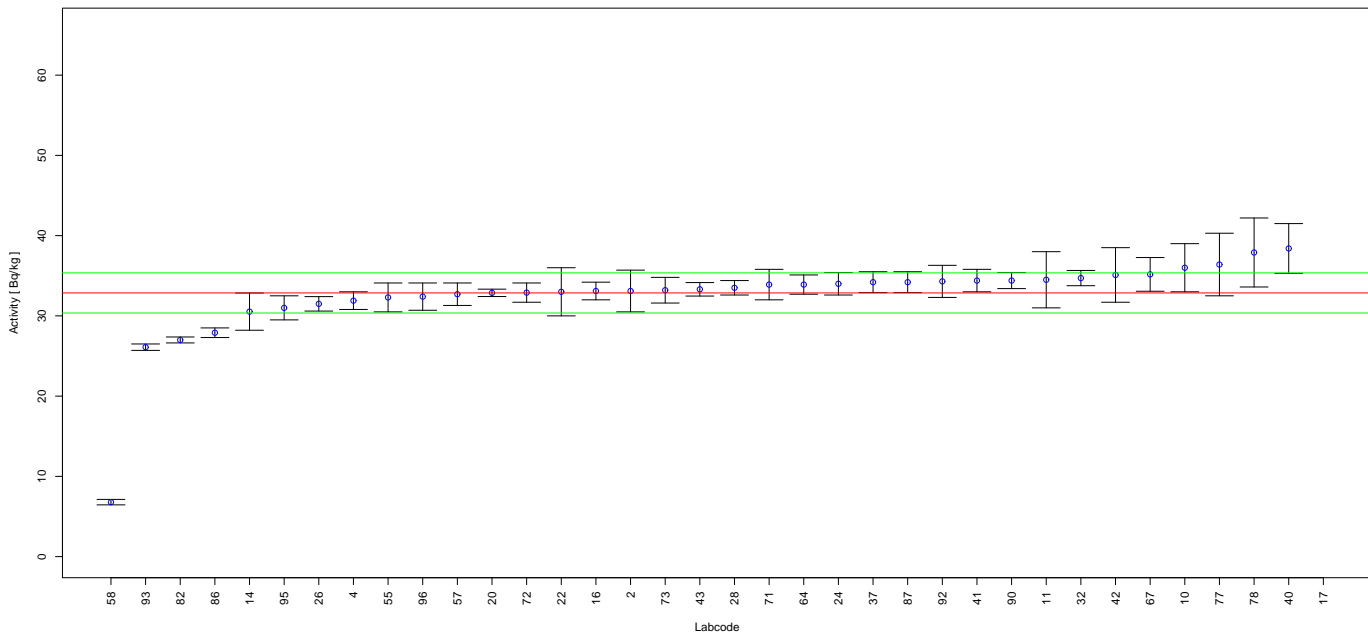


FIGURE 57. Reported results and evaluation parameters for Pb-214 in Sample 7.

TABLE 82. IC Evaluation Results for Pb-214 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	33.1	2.6	0.10	A
4	31.9	1.1	0.38	A
10	36	3	1.26	A
11	34.5	3.5	0.66	A
14	30.53	2.32	0.93	A
16	33.1	1.1	0.10	A
17	370	20	134.86	N
20	32.87	0.46	0.00	A
22	33	3	0.06	A
24	34.0	1.4	0.46	A
26	31.5	0.9	0.54	A
28	33.5	0.9	0.26	A
32	34.71	0.95	0.74	A
37	34.2	1.3	0.54	A
40	38.4	3.1	2.22	W
41	34.4	1.4	0.62	A
42	35.1	3.4	0.90	A
43	33.31	0.84	0.18	A
55	32.3	1.8	0.22	A
57	32.7	1.4	0.06	A
58	6.79	0.34	10.43	N

TABLE 82. IC Evaluation Results for Pb-214 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
64	33.9	1.2	0.42	A
67	35.17	2.10	0.92	A
71	33.9	1.9	0.42	A
72	32.9	1.2	0.02	A
73	33.2	1.6	0.14	A
77	36.4	3.9	1.42	A
78	37.9	4.3	2.02	W
82	27.0	0.37	2.34	W
86	27.9	0.6	1.98	A
87	34.2	1.3	0.54	A
90	34.4	1.0	0.62	A
92	34.3	2.0	0.58	A
93	26.1	0.40	2.70	W
95	31.0	1.5	0.74	A
96	32.4	1.7	0.18	A

## Reported Results for Ra-224 Determination in Sample 7

TABLE 83. Target values

Parameter	Value
Robust Mean, Bq/kg	39.91
Robust SD, Bq/kg	5.74
N	27

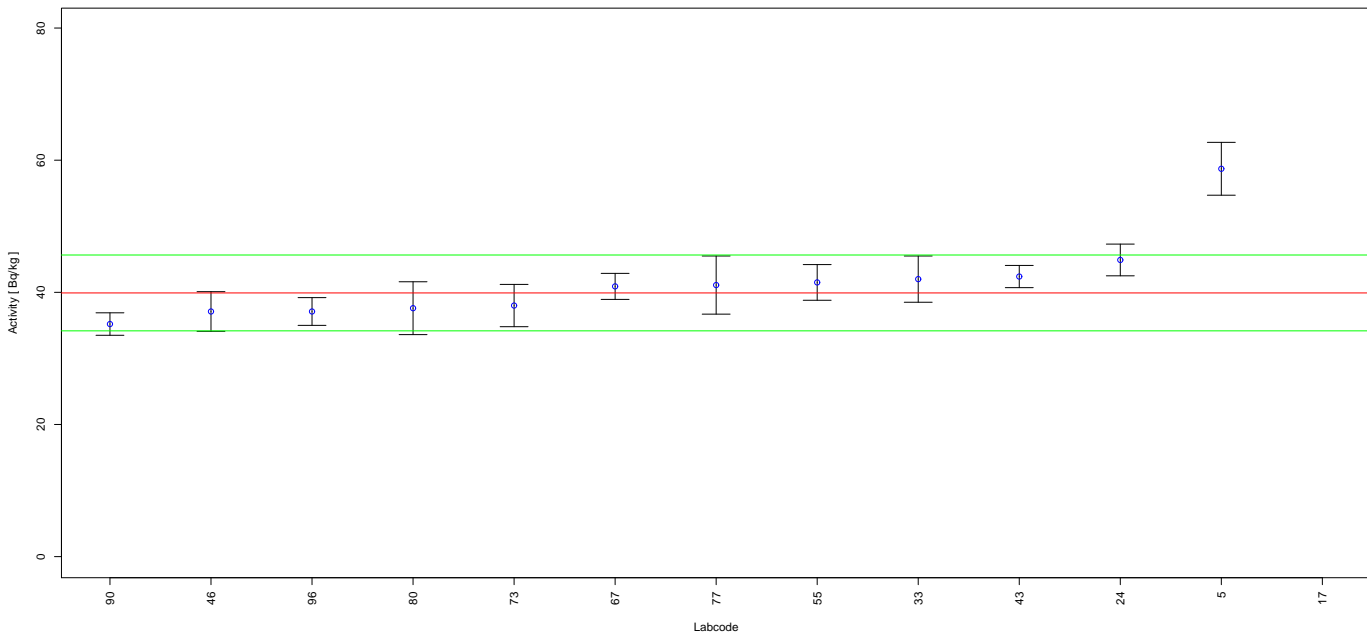


FIGURE 58. Reported results and evaluation parameters for Ra-224 in Sample 7.

TABLE 84. IC Evaluation Results for Ra-224 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
5	58.7	4.0	3.27
17	240	40	34.86
24	44.9	2.4	0.87
33	42	3.5	0.36
43	42.39	1.681	0.43
46	37.1	3.0	0.49
55	41.5	2.7	0.28
67	40.90	1.97	0.17
73	38.0	3.2	0.33
77	41.1	4.4	0.21
80	37.6	4.0	0.40
90	35.2	1.7	0.82
96	37.1	2.1	0.49

## Reported Results for Ra-226 Determination in Sample 7

TABLE 85. Target values

Parameter	Value
Robust Mean, Bq/kg	38
Robust SD, Bq/kg	10.91
N	146

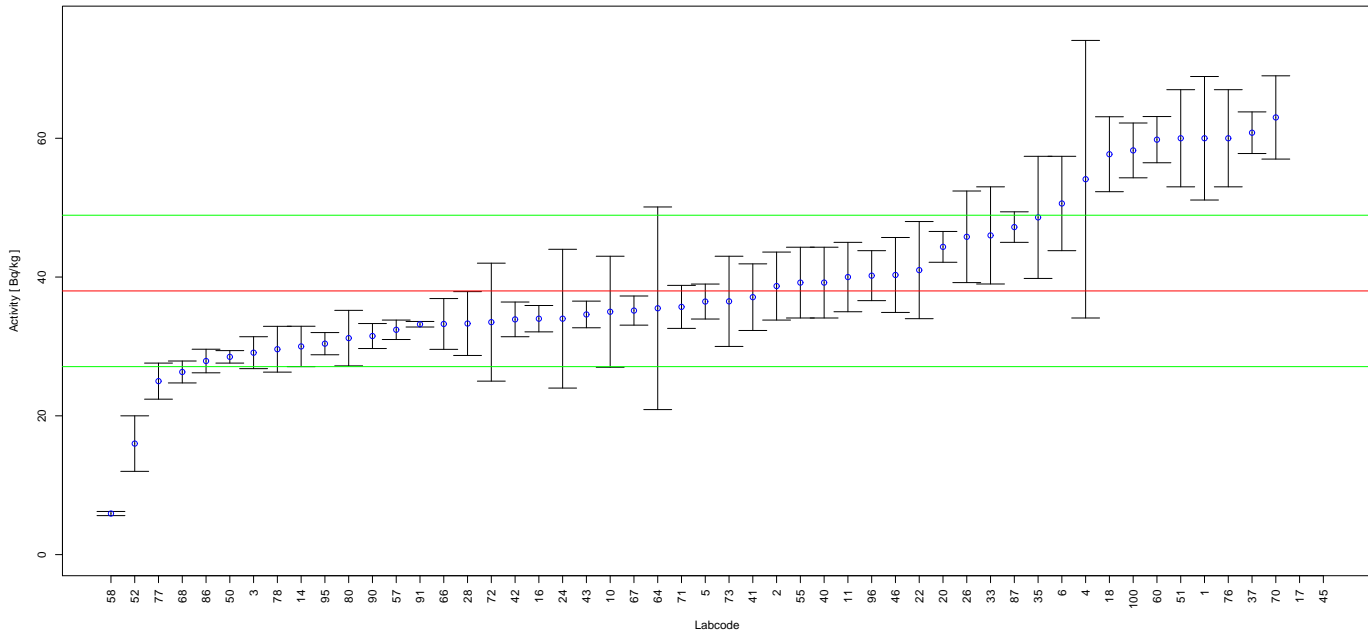


FIGURE 59. Reported results and evaluation parameters for Ra-226 in Sample 7.

TABLE 86. IC Evaluation Results for Ra-226 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	60.0	8.9	2.02	W
2	38.7	4.9	0.06	A
3	29.1	2.3	0.82	A
4	54.1	20.0	1.48	A
5	36.47	2.52	0.14	A
6	50.6	6.8	1.15	A
10	35	8	0.27	A
11	40	5	0.18	A
14	30.00	2.91	0.73	A
16	34.0	1.9	0.37	A
17	550	40	46.93	N
18	57.7	5.4	1.81	A
20	44.35	2.22	0.58	A
22	41	7	0.27	A
24	34	10	0.37	A
26	45.8	6.6	0.71	A
28	33.3	4.6	0.43	A
33	46	7	0.73	A
35	48.6	8.8	0.97	A
37	60.8	3.0	2.09	W
40	39.2	5.1	0.11	A

TABLE 86. IC Evaluation Results for Ra-226 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
41	37.1	4.8	0.08	A
42	33.9	2.5	0.38	A
43	34.61	1.92	0.31	A
45	3045	150	275.62	N
46	40.3	5.4	0.21	A
50	28.5	0.9	0.87	A
51	60	7	2.02	W
52	16	4	2.02	W
55	39.2	5.1	0.11	A
57	32.4	1.4	0.51	A
58	5.92	0.30	2.94	W
60	59.8	3.33	2.00	A
64	35.5	14.6	0.23	A
66	33.24	3.66	0.44	A
67	35.17	2.10	0.26	A
68	26.32	1.58	1.07	A
70	63	6	2.29	W
71	35.7	3.1	0.21	A
72	33.5	8.5	0.41	A
73	36.5	6.5	0.14	A
76	60	7	2.02	W
77	25.0	2.6	1.19	A
78	29.6	3.3	0.77	A
80	31.2	4.0	0.62	A
86	27.9	1.7	0.93	A
87	47.2	2.2	0.84	A
90	31.5	1.8	0.60	A
91	33.2	0.4	0.44	A
95	30.4	1.6	0.70	A
96	40.2	3.6	0.20	A
100	58.25	3.95	1.86	A

## Reported Results for Ac-227 Determination in Sample 7

TABLE 87. Target values

Parameter	Value
Robust Mean, Bq/kg	1.56
Robust SD, Bq/kg	0.21
N	5

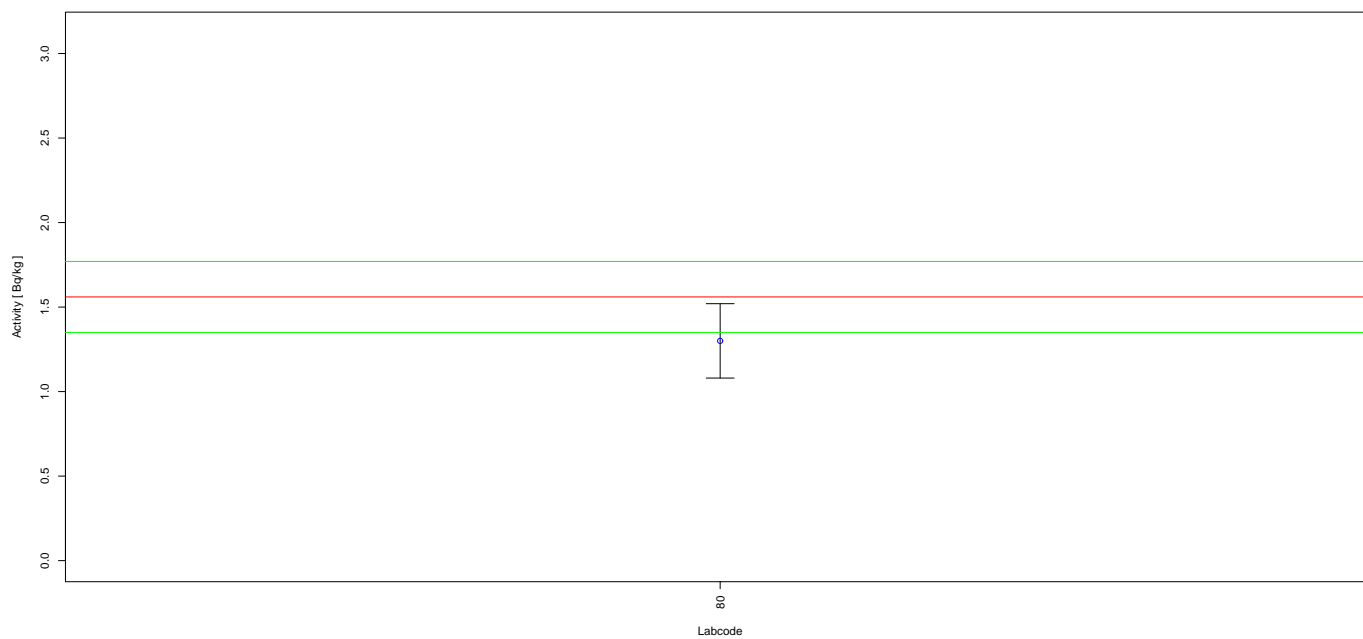


FIGURE 60. Reported results and evaluation parameters for Ac-227 in Sample 7.

TABLE 88. IC Evaluation Results for Ac-227 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
80	1.30	0.22	1.24



## Reported Results for Th-227 Determination in Sample 7

TABLE 89. Target values

Parameter	Value
Robust Mean, Bq/kg	1.65
Robust SD, Bq/kg	0.41
N	15

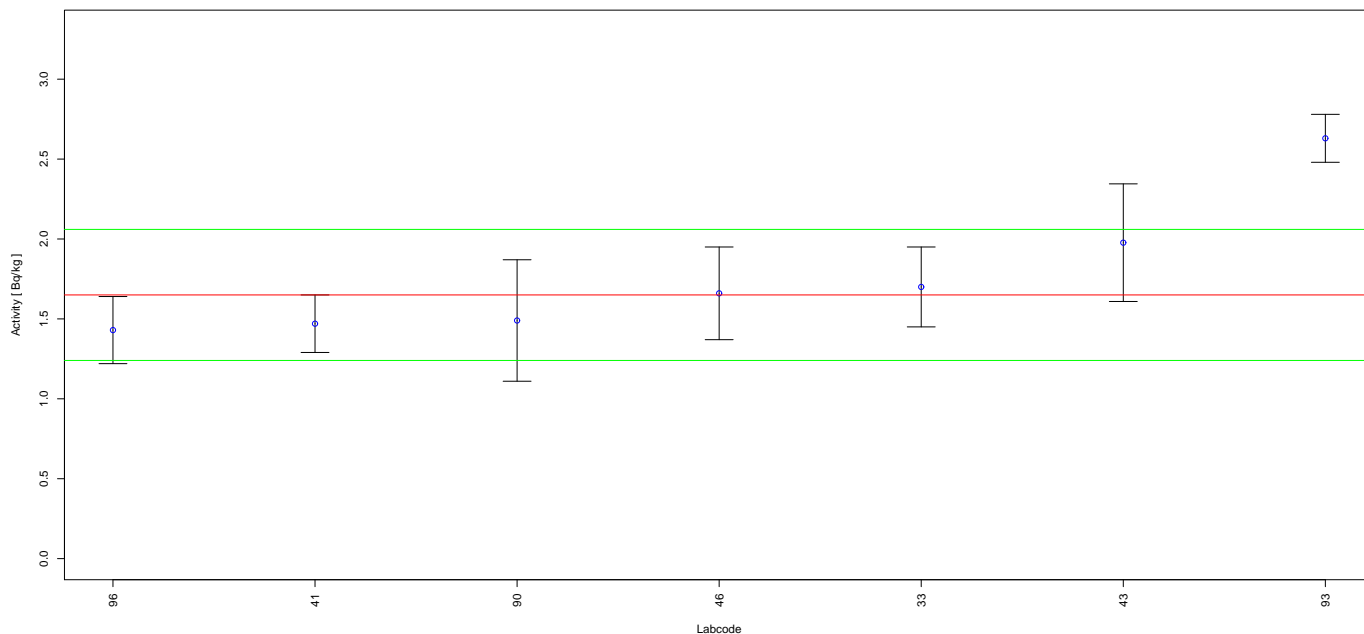


FIGURE 61. Reported results and evaluation parameters for Th-227 in Sample 7.

TABLE 90. IC Evaluation Results for Th-227 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
33	1.7	0.25	0.12
41	1.47	0.18	0.44
43	1.977	0.368	0.80
46	1.66	0.29	0.02
90	1.49	0.38	0.39
93	2.63	0.15	2.39
96	1.43	0.21	0.54

## Reported Results for Ra-228 Determination in Sample 7

TABLE 91. Target values

Parameter	Value
Robust Mean, Bq/kg	37.77
Robust SD, Bq/kg	2.2
N	29

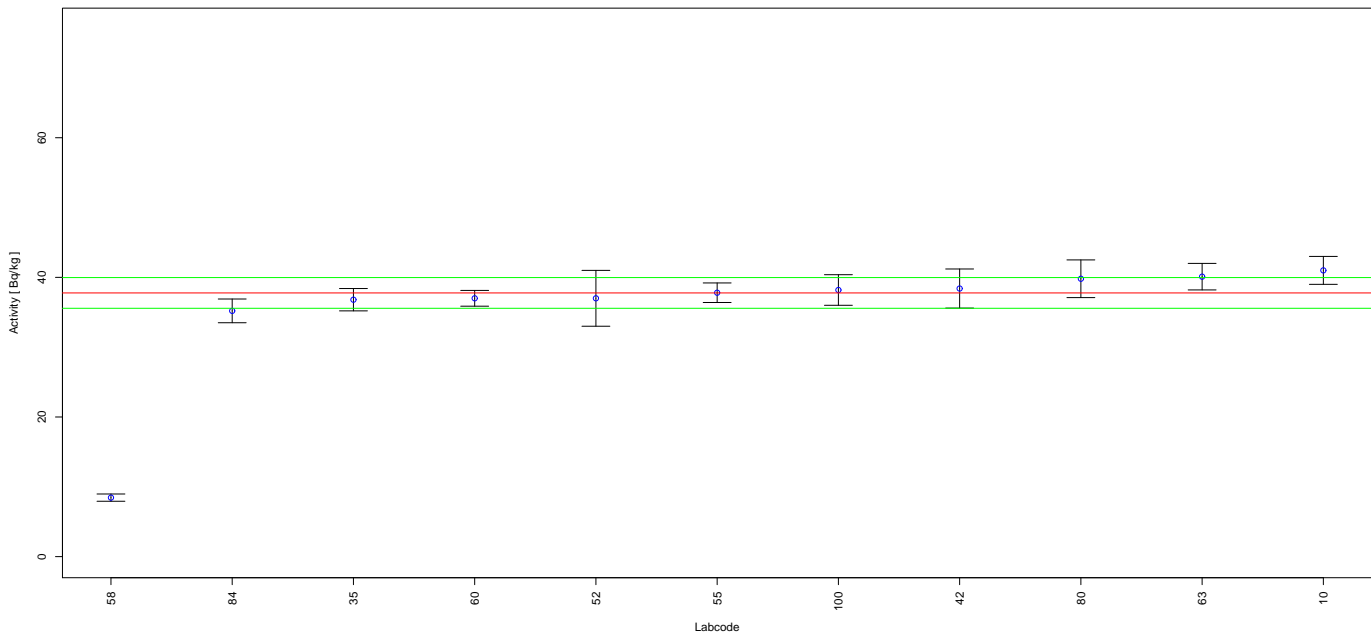


FIGURE 62. Reported results and evaluation parameters for Ra-228 in Sample 7.

TABLE 92. IC Evaluation Results for Ra-228 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
10	41	2	1.47
35	36.8	1.6	0.44
42	38.4	2.8	0.29
52	37	4	0.35
55	37.8	1.4	0.01
58	8.45	0.52	13.33
60	37.0	1.13	0.35
63	40.1	1.9	1.06
80	39.8	2.7	0.92
84	35.2	1.7	1.17
100	38.19	2.19	0.19

## Reported Results for Th-228 Determination in Sample 7

TABLE 93. Target values

Parameter	Value
Robust Mean, Bq/kg	38.98
Robust SD, Bq/kg	4.11
N	27

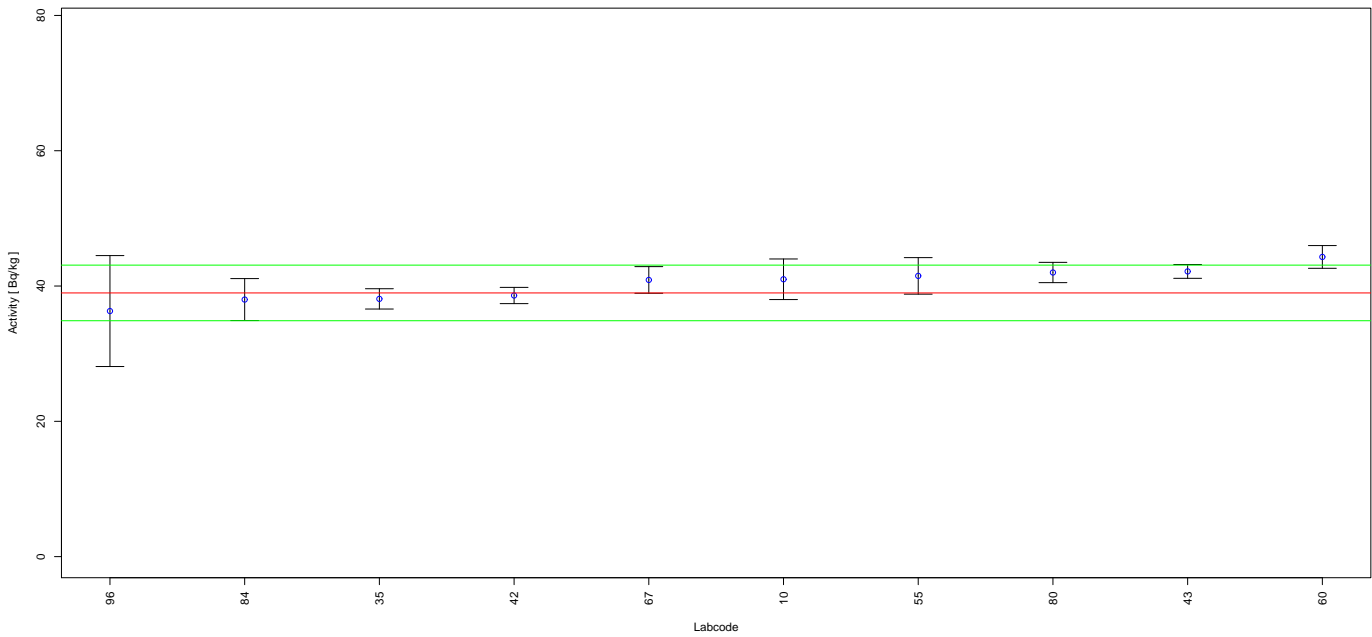


FIGURE 63. Reported results and evaluation parameters for Th-228 in Sample 7.

TABLE 94. IC Evaluation Results for Th-228 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
10	41	3	0.49
35	38.1	1.5	0.21
42	38.6	1.2	0.09
43	42.16	1.02	0.77
55	41.5	2.7	0.61
60	44.3	1.68	1.29
67	40.90	1.97	0.47
80	42.0	1.5	0.73
84	38.0	3.1	0.24
96	36.3	8.2	0.65

## Reported Results for Ac-228 Determination in Sample 7

TABLE 95. Target values

Parameter	Value
Robust Mean, Bq/kg	36.27
Robust SD, Bq/kg	3.03
N	118

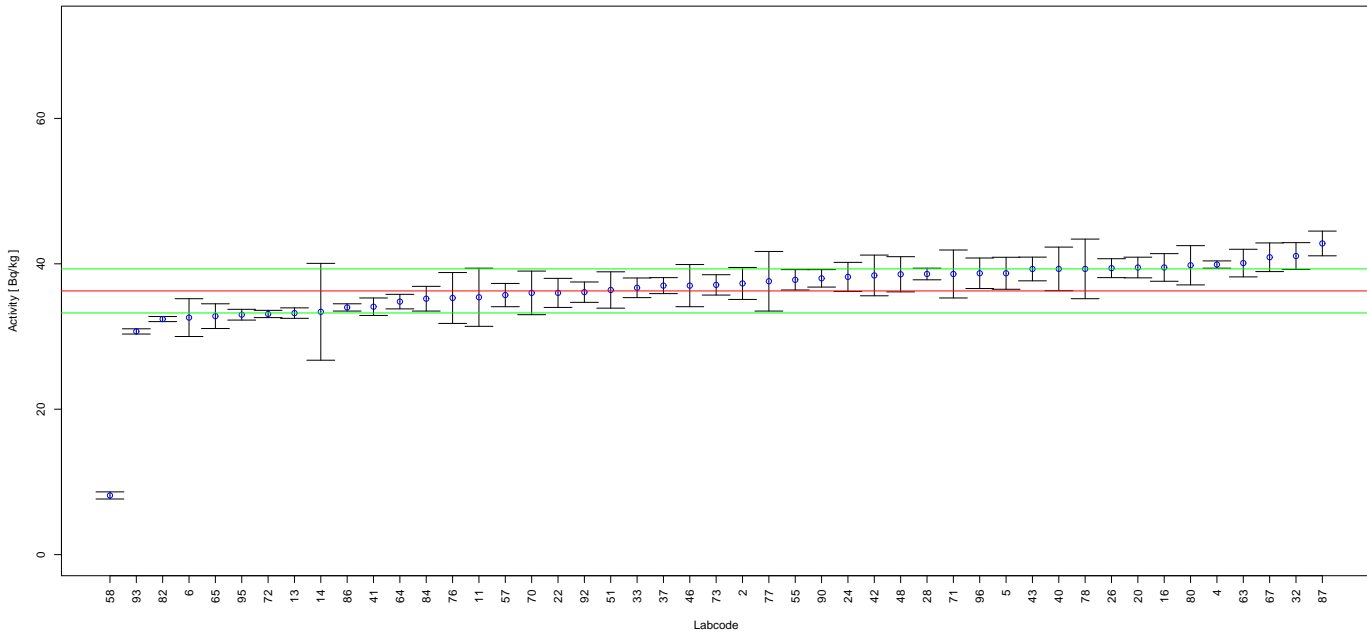


FIGURE 64. Reported results and evaluation parameters for Ac-228 in Sample 7.

TABLE 96. IC Evaluation Results for Ac-228 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
2	37.3	2.2	0.34	A
4	39.9	0.5	1.20	A
5	38.7	2.2	0.80	A
6	32.6	2.6	1.21	A
11	35.4	4	0.29	A
13	33.22	0.72	1.01	A
14	33.40	6.66	0.95	A
16	39.5	1.9	1.07	A
20	39.49	1.42	1.06	A
22	36	2	0.09	A
24	38.2	2.0	0.64	A
26	39.4	1.3	1.03	A
28	38.6	0.8	0.77	A
32	41.07	1.84	1.58	A
33	36.7	1.35	0.14	A
37	37.0	1.1	0.24	A
40	39.3	3.0	1.00	A
41	34.1	1.2	0.72	A
42	38.4	2.8	0.70	A
43	39.29	1.63	1.00	A
46	37.0	2.9	0.24	A

TABLE 96. IC Evaluation Results for Ac-228 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
48	38.56	2.42	0.76	A
51	36.4	2.5	0.04	A
55	37.8	1.4	0.50	A
57	35.7	1.6	0.19	A
58	8.14	0.49	9.28	N
63	40.1	1.9	1.26	A
64	34.8	1.0	0.49	A
65	32.8	1.7	1.15	A
67	40.90	1.97	1.53	A
70	36	3	0.09	A
71	38.6	3.3	0.77	A
72	33.1	0.5	1.05	A
73	37.1	1.4	0.27	A
76	35.3	3.5	0.32	A
77	37.6	4.1	0.44	A
78	39.3	4.1	1.00	A
80	39.8	2.7	1.17	A
82	32.4	0.35	1.28	A
84	35.2	1.7	0.35	A
86	34.0	0.5	0.75	A
87	42.8	1.7	2.16	W
90	38.0	1.2	0.57	A
92	36.1	1.4	0.06	A
93	30.7	0.36	1.84	A
95	33.0	0.74	1.08	A
96	38.7	2.1	0.80	A

## Reported Results for Th-230 Determination in Sample 7

TABLE 97. Target values

Parameter	Value
Robust Mean, Bq/kg	39.65
Robust SD, Bq/kg	4.58
N	4

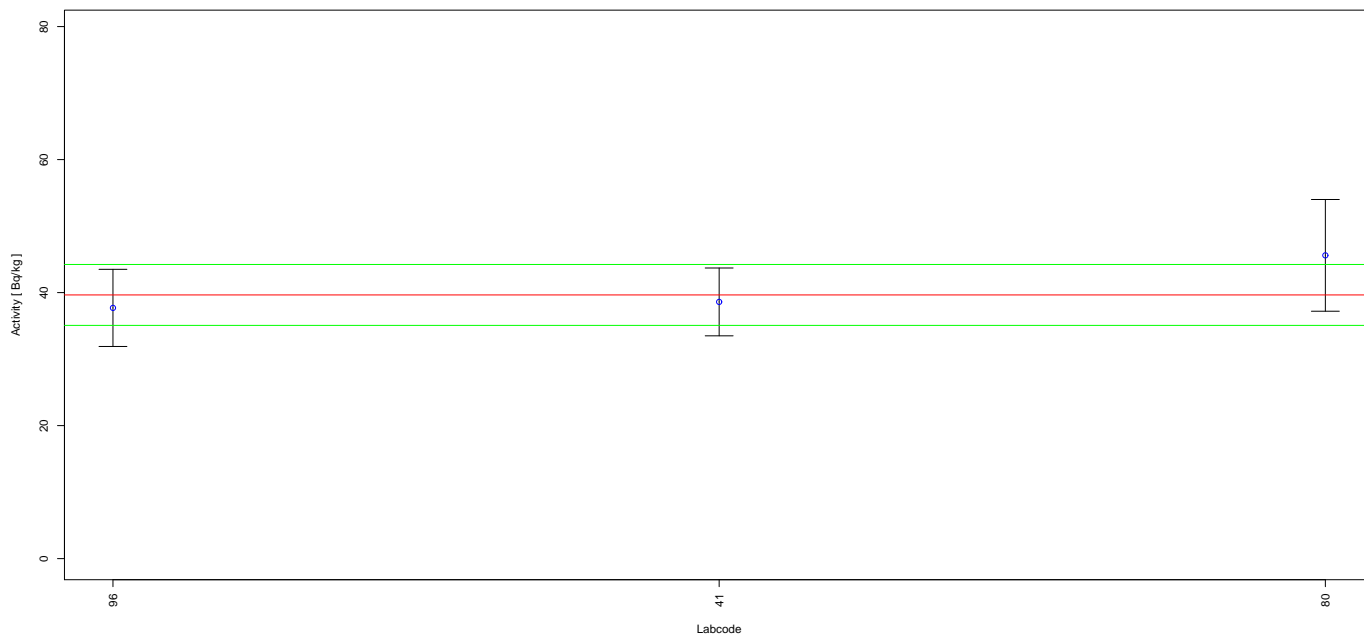


FIGURE 65. Reported results and evaluation parameters for Th-230 in Sample 7.

TABLE 98. IC Evaluation Results for Th-230 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
41	38.6	5.1	0.23
80	45.6	8.4	1.30
96	37.7	5.8	0.43

## Reported Results for Th-231 Determination in Sample 7

TABLE 99. Target values

Parameter	Value
Robust Mean, Bq/kg	7.3
Robust SD, Bq/kg	6.82
N	5

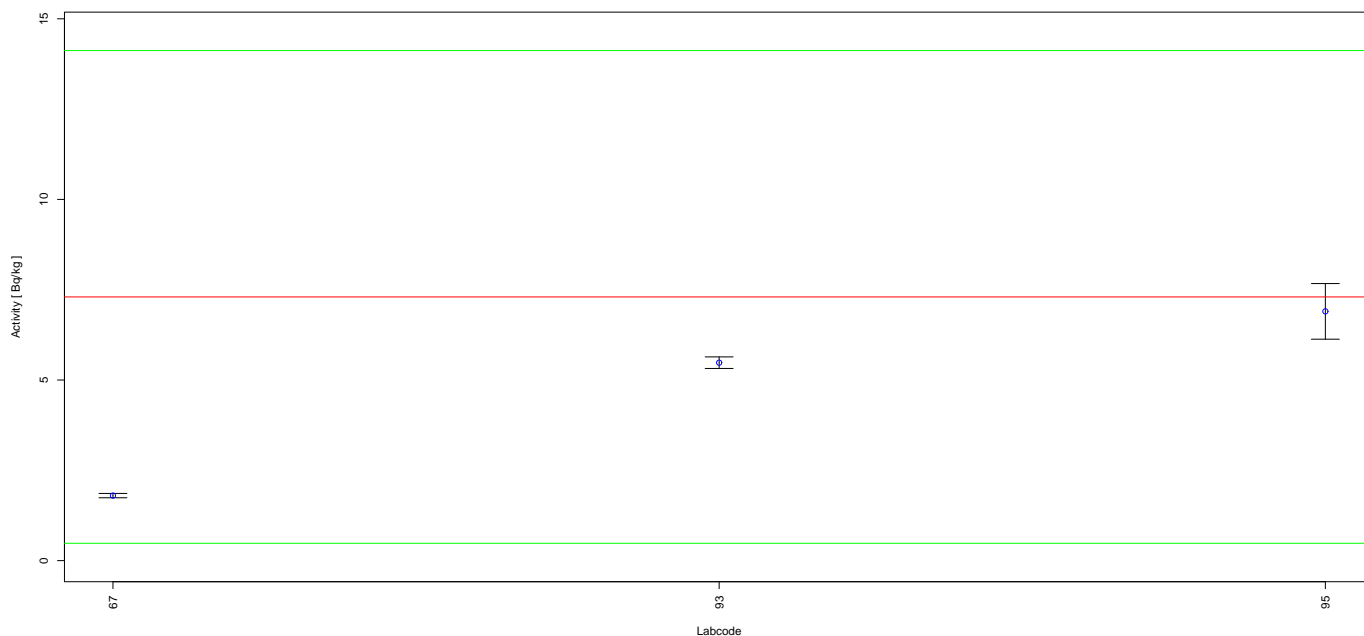


FIGURE 66. Reported results and evaluation parameters for Th-231 in Sample 7.

TABLE 100. IC Evaluation Results for Th-231 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
67	1.80	0.06	0.81
93	5.48	0.16	0.27
95	6.9	0.77	0.06

## Reported Results for Th-232 Determination in Sample 7

TABLE 101. Target values

Parameter	Value
Robust Mean, Bq/kg	36.55
Robust SD, Bq/kg	4.41
N	11

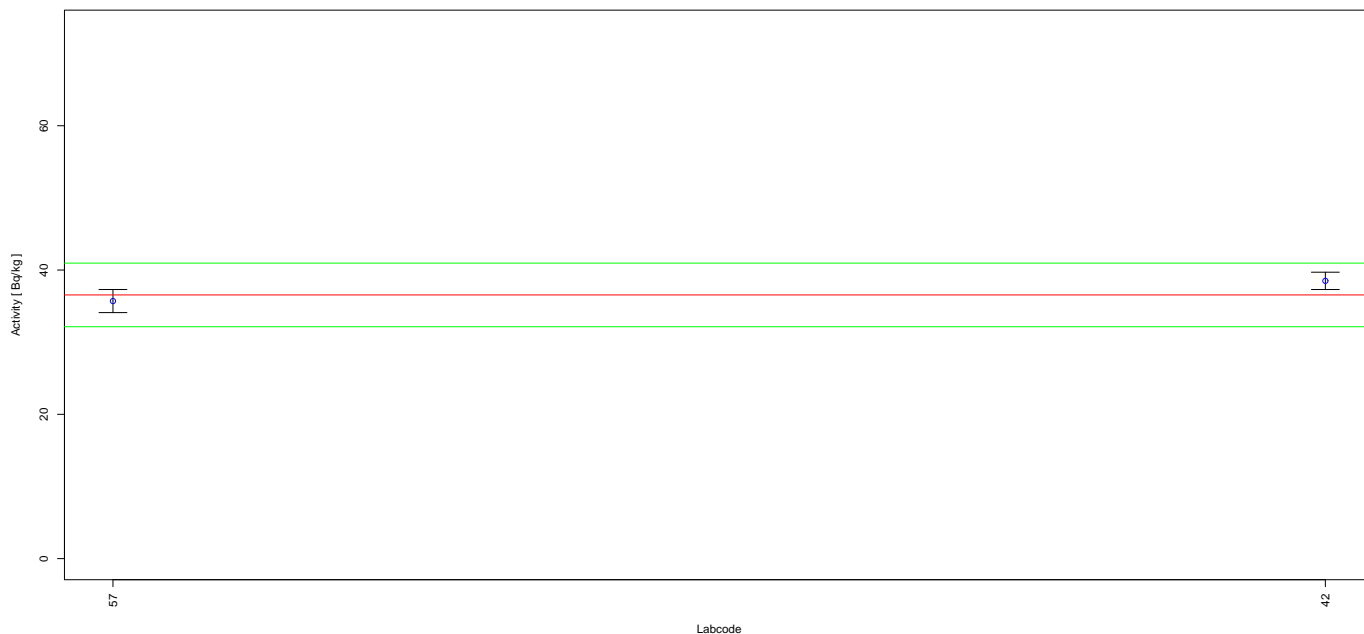


FIGURE 67. Reported results and evaluation parameters for Th-232 in Sample 7.

TABLE 102. IC Evaluation Results for Th-232 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
42	38.5	1.2	0.44
57	35.7	1.6	0.19



## Reported Results for Th-234 Determination in Sample 7

TABLE 103. Target values

Parameter	Value
Robust Mean, Bq/kg	28.6
Robust SD, Bq/kg	6.56
N	66

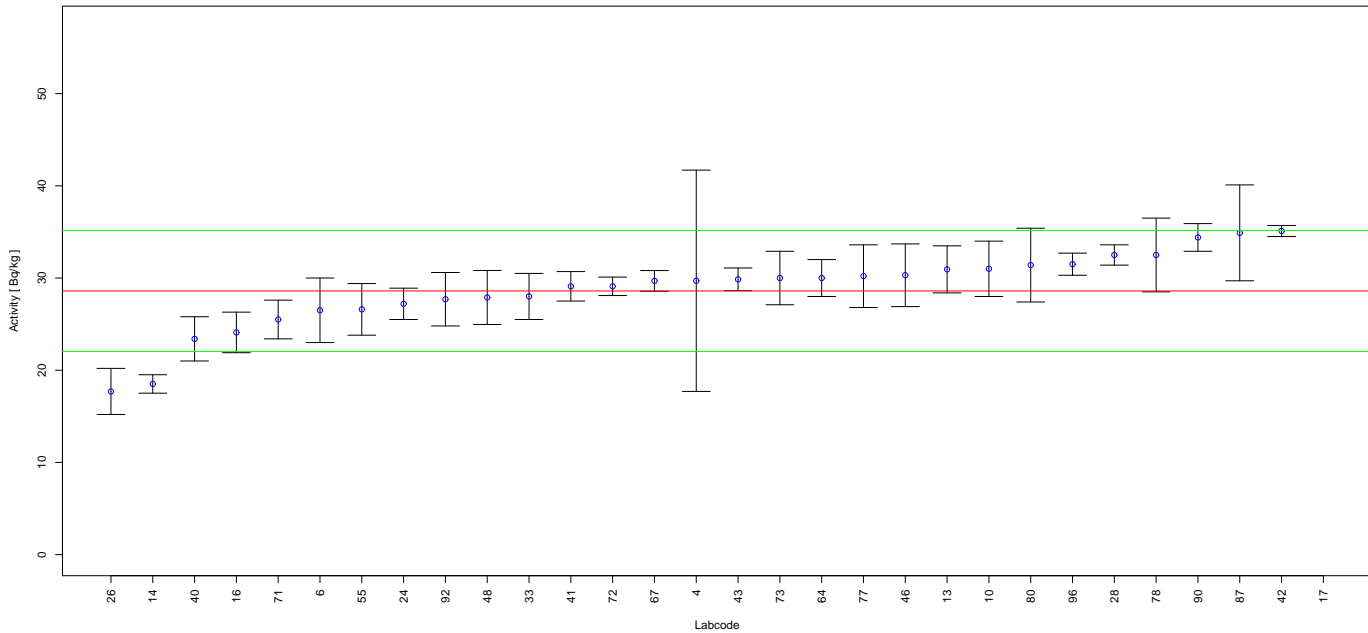


FIGURE 68. Reported results and evaluation parameters for Th-234 in Sample 7.

TABLE 104. IC Evaluation Results for Th-234 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
4	29.7	12.0	0.17	A
6	26.5	3.5	0.32	A
10	31	3	0.37	A
13	30.94	2.55	0.36	A
14	18.51	1.00	1.54	A
16	24.1	2.2	0.69	A
17	170	10	21.55	N
24	27.2	1.7	0.21	A
26	17.7	2.5	1.66	A
28	32.5	1.1	0.59	A
33	28	2.5	0.09	A
40	23.4	2.4	0.79	A
41	29.1	1.6	0.08	A
42	35.1	0.60	0.99	A
43	29.86	1.23	0.19	A
46	30.3	3.4	0.26	A
48	27.89	2.93	0.11	A
55	26.6	2.8	0.30	A
64	30.0	2.0	0.21	A
67	29.69	1.12	0.17	A
71	25.5	2.1	0.47	A

TABLE 104. IC Evaluation Results for Th-234 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
72	29.1	1.0	0.08	A
73	30.0	2.9	0.21	A
77	30.2	3.4	0.24	A
78	32.5	4.0	0.59	A
80	31.4	4.0	0.43	A
87	34.9	5.2	0.96	A
90	34.4	1.5	0.88	A
92	27.7	2.9	0.14	A
96	31.5	1.2	0.44	A

## Reported Results for Pa-234m Determination in Sample 7

TABLE 105. Target values

Parameter	Value
Robust Mean, Bq/kg	26.57
Robust SD, Bq/kg	10.19
N	35

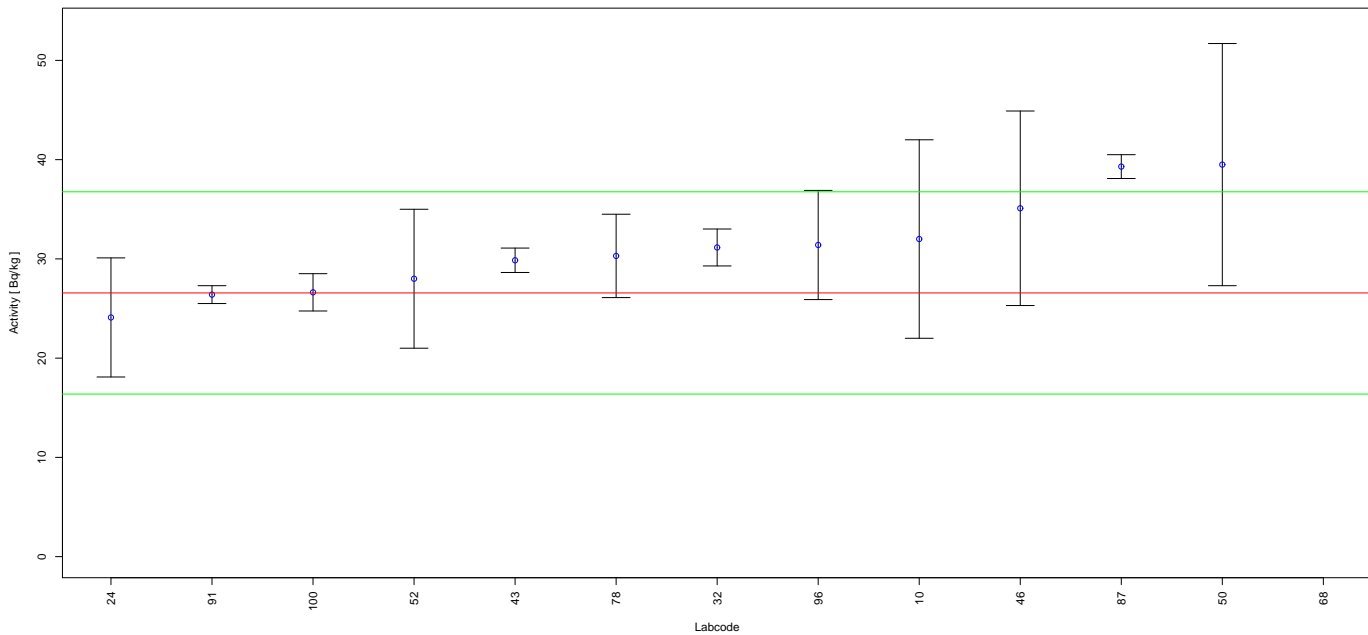


FIGURE 69. Reported results and evaluation parameters for Pa-234m in Sample 7.

TABLE 106. IC Evaluation Results for Pa-234m in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
10	32	10	0.53	A
24	24.1	6.0	0.24	A
32	31.15	1.86	0.45	A
43	29.86	1.23	0.32	A
46	35.1	9.8	0.84	A
50	39.5	12.2	1.27	A
52	28	7	0.14	A
68	271.36	16.28	24.02	N
78	30.3	4.2	0.37	A
87	39.3	1.2	1.25	A
91	26.4	0.9	0.02	A
96	31.4	5.5	0.47	A
100	26.63	1.88	0.01	A

## Reported Results for U-235 Determination in Sample 7

TABLE 107. Target values

Parameter	Value
Robust Mean, Bq/kg	1.46
Robust SD, Bq/kg	0.55
N	117

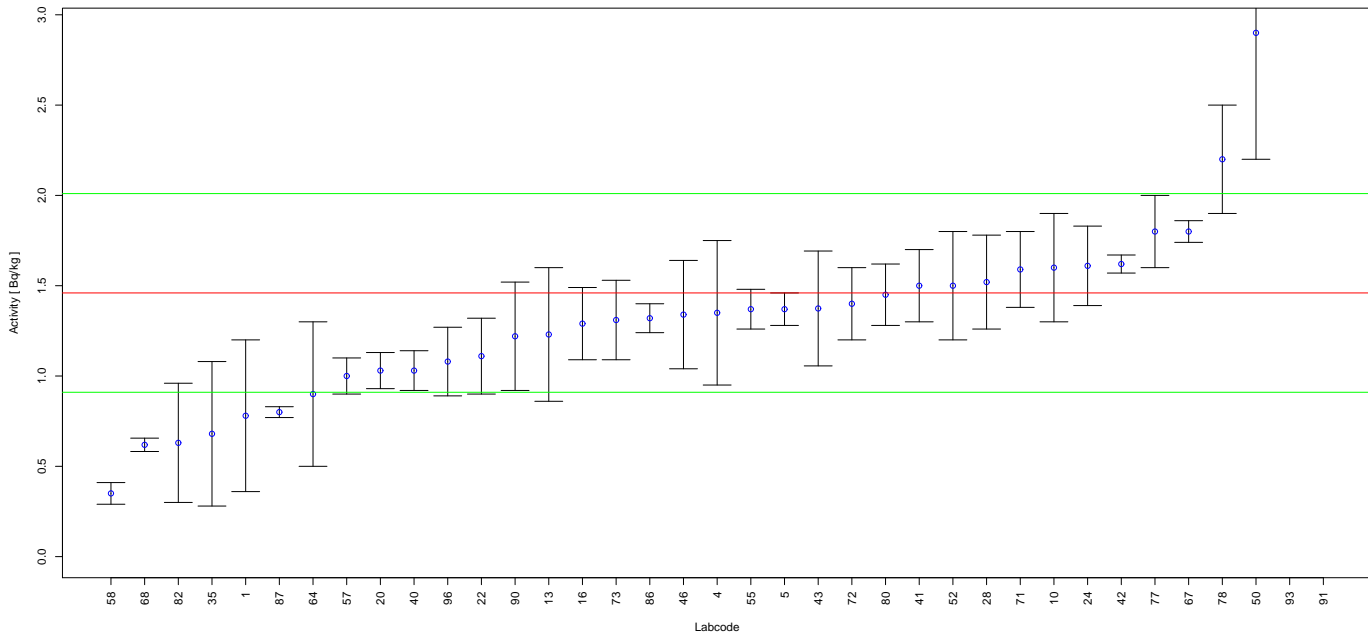


FIGURE 70. Reported results and evaluation parameters for U-235 in Sample 7.

TABLE 108. IC Evaluation Results for U-235 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	0.78	0.42	1.24	A
4	1.35	0.4	0.20	A
5	1.37	0.09	0.16	A
10	1.6	0.3	0.25	A
13	1.23	0.37	0.42	A
16	1.29	0.20	0.31	A
20	1.03	0.10	0.78	A
22	1.11	0.21	0.64	A
24	1.61	0.22	0.27	A
28	1.52	0.26	0.11	A
35	0.68	0.4	1.42	A
40	1.03	0.11	0.78	A
41	1.50	0.20	0.07	A
42	1.62	0.05	0.29	A
43	1.374	0.318	0.16	A
46	1.34	0.30	0.22	A
50	2.9	0.7	2.62	W
52	1.5	0.3	0.07	A
55	1.37	0.11	0.16	A
57	1.0	0.1	0.84	A
58	0.35	0.06	2.02	W

TABLE 108. IC Evaluation Results for U-235 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
64	0.9	0.4	1.02	A
67	1.80	0.06	0.62	A
68	0.619	0.037	1.53	A
71	1.59	0.21	0.24	A
72	1.4	0.2	0.11	A
73	1.31	0.22	0.27	A
77	1.8	0.2	0.62	A
78	2.2	0.3	1.35	A
80	1.45	0.17	0.02	A
82	0.63	0.33	1.51	A
86	1.32	0.08	0.25	A
87	0.8	0.03	1.20	A
90	1.22	0.30	0.44	A
91	12.6	0.8	20.25	N
93	3.38	0.10	3.49	N
96	1.08	0.19	0.69	A

## Reported Results for U-238 Determination in Sample 7

TABLE 109. Target values

Parameter	Value
Robust Mean, Bq/kg	28
Robust SD, Bq/kg	6.45
N	16

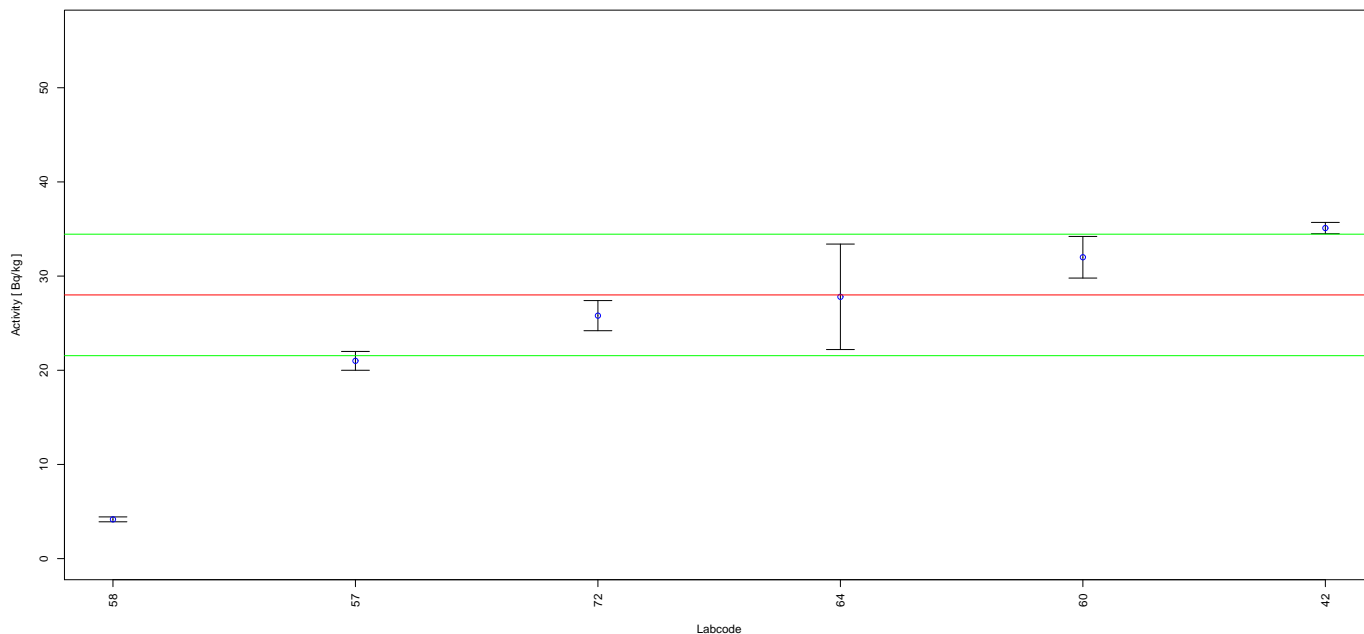


FIGURE 71. Reported results and evaluation parameters for U-238 in Sample 7.

TABLE 110. IC Evaluation Results for U-238 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score
42	35.1	0.60	1.10
57	21	1	1.09
58	4.17	0.26	3.69
60	32.0	2.21	0.62
64	27.8	5.6	0.03
72	25.8	1.6	0.34

## Reported Results for Am-241 Determination in Sample 7

TABLE 111. Target values

Parameter	Value
Robust Mean, Bq/kg	78.89
Robust SD, Bq/kg	7.59
N	169

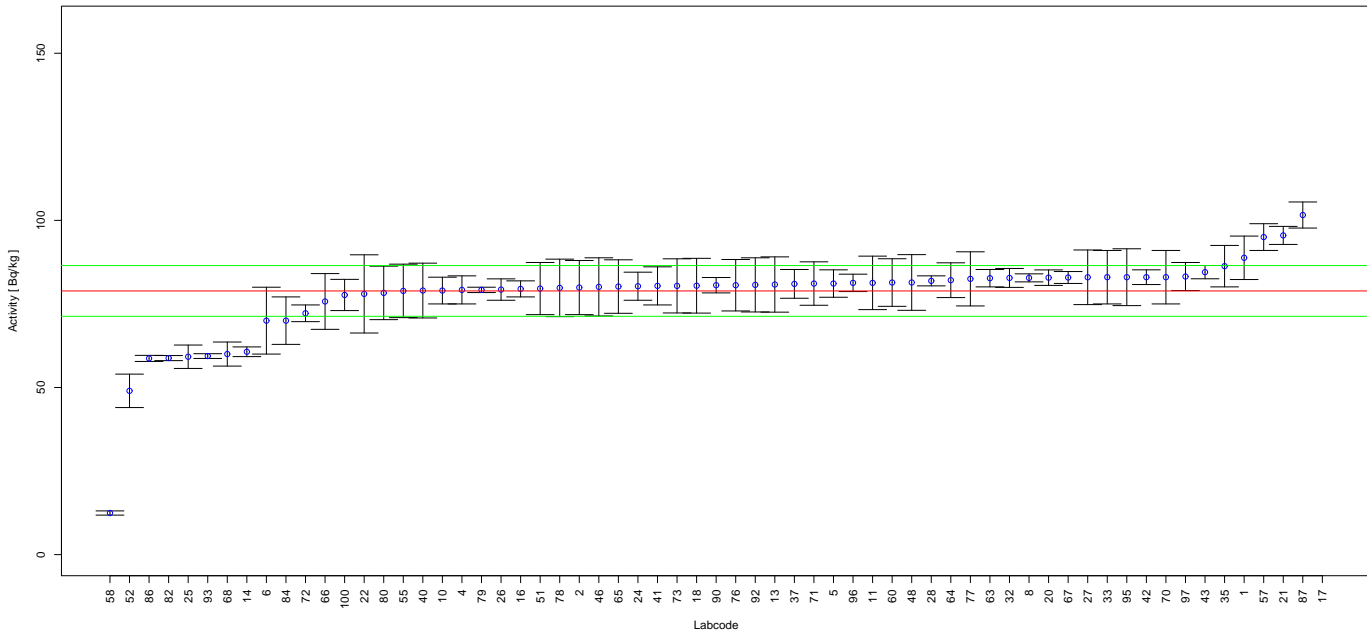


FIGURE 72. Reported results and evaluation parameters for Am-241 in Sample 7.

TABLE 112. IC Evaluation Results for Am-241 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
1	88.8	6.5	1.31	A
2	79.9	8.1	0.13	A
4	79.2	4.2	0.04	A
5	81.1	4.1	0.29	A
6	70	10	1.17	A
8	82.8	1.2	0.52	A
10	79	4	0.01	A
11	81.3	8	0.32	A
13	80.81	8.27	0.25	A
14	60.69	1.45	2.40	W
16	79.5	2.4	0.08	A
17	710	50	83.15	N
18	80.45	8.19	0.21	A
20	82.86	2.32	0.52	A
21	95.5	2.7	2.19	W
22	78	11.7	0.12	A
24	80.3	4.2	0.19	A
25	59.2	3.5	2.59	W
26	79.3	3.2	0.05	A
27	82.97	8.17	0.54	A
28	81.9	1.5	0.40	A

TABLE 112. IC Evaluation Results for Am-241 in Sample 7, Rep. Value and Rep. Unc. in Bq/kg

Labcode	Rep. Value	Rep. Unc.	Z-Score	Z-Score Evaluation
32	82.78	2.83	0.51	A
33	83	8	0.54	A
35	86.3	6.2	0.98	A
37	81.0	4.3	0.28	A
40	79.0	8.2	0.01	A
41	80.4	5.7	0.20	A
42	83.0	2.2	0.54	A
43	84.51	1.987	0.74	A
46	80.1	8.7	0.16	A
48	81.42	8.33	0.33	A
51	79.6	7.8	0.09	A
52	49	5	3.94	N
55	78.9	8	0.00	A
57	95	4	2.12	W
58	12.45	0.63	8.75	N
60	81.4	7.12	0.33	A
63	82.7	2.6	0.50	A
64	82.1	5.2	0.42	A
65	80.2	8	0.17	A
66	75.74	8.34	0.42	A
67	82.91	1.78	0.53	A
68	60.004	3.6	2.49	W
70	83	8	0.54	A
71	81.1	6.5	0.29	A
72	72.2	2.5	0.88	A
73	80.4	8.1	0.20	A
76	80.6	7.7	0.23	A
77	82.5	8.1	0.48	A
78	79.8	8.6	0.12	A
79	79.2	0.8	0.04	A
80	78.3	8.0	0.08	A
82	58.8	0.76	2.65	W
84	70.0	7.1	1.17	A
86	58.7	0.91	2.66	W
87	101.6	3.9	2.99	W
90	80.6	2.3	0.23	A
92	80.7	8.1	0.24	A
93	59.4	0.71	2.57	W
95	83	8.5	0.54	A
96	81.3	2.6	0.32	A
97	83.2	4.2	0.57	A
100	77.68	4.67	0.16	A



## 6 References

### References

- [1] International Organization for Standardization (ISO). (2010). Conformity assessment - General requirements for proficiency testing, ISO/IEC 17043:2010. Geneva: Switzerland.
- [2] International Organization for Standardization (ISO). (2015). Statistical methods for use in proficiency testing by interlaboratory comparison, ISO 13528:2015. Geneva: Switzerland.

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