improving together

RESULTS REVIEW
21M66.1

THMS IN SWIMMING POOL WATERS

MAY 2021 TO JUNE 2021

AGLAE Association
Parc des Pyramides
427 rue des Bourreliers
59320 Hallennes lez Haubourdin
FRANCE
☎ +33 (0)3 20 16 91 40
contact@association-aglae.fr
www.association-aglae.fr

Warning:
This document provides a quick feedback. z-scores, means and standard deviations are given on a provisional basis. Only the thorough statistical treatment carried out for the final report ensures the reliability of the information. Anomalies in data distribution, deviation between methods, unsuitable quality of the test materials or other singularities may lead us to invalidate the raw data treatment carried out in this document.
Therefore, we would like to warn you about any hasty conclusion that you may draw from this raw information.

Should there be any differences between the French and English versions of this document, the French version shall prevail.

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Certificate of participation - assigned codes for the Proficiency Testing Scheme - 2021

GWA MBH IWU LUISENTHAL - Site No. 18178
Mrs WOBST Anja

An der Ohratalsperre

99885 LUISENTHAL

ALLEMAGNE

Organic pollutants in fresh waters		
PT	**Title**	**Assigned code**
21M66.1	THMs in swimming pool waters	21

PREPARATION OF THE TEST MATERIALS

Matrix used: Swimming pool water

Number of batches prepared: 1

Batch number	Group of parameters	Bottles Identification	Stabilisation
Batch 1	chloroform, bromoform, dichlorobromomethane, dibromochloromethane, trihalomethanes (THMs)	100mL glass bottles labelled A, B	Addition of ascorbic acid (pH < 4)

TABLE WITH PROVISIONAL MEANS AND STANDARD DEVIATIONS FOR EACH PARAMETER

Parameter	Value targeted by spiking [1]	Mean (m)	Standard deviation (Sz)	Unit
chloroform	15,17	14,355	2,046	µg/L
bromoform	8,00	6,672	1,048	µg/L
dichlorobromomethane	12,99	11,112	1,242	µg/L
dibromochloromethane	6,00	5,103	0,657	µg/L
trihalomethanes (THMs)	42,16	35,405	5,738	µg/L

[1] These values are given for information only and they must not be used as reference values.

TABLES WITH PROVISIONAL MEANS AND Z-SCORES FOR EACH PARAMETER AND EACH PARTICIPANT:

see pages 3 and 4

The proficiency test report will be available in your member area no later than:

Friday 2 July 2021 (provisional date)

You will receive an email as soon as your report is issued or should there be any delay.

Please note: z-scores might be modified following the thorough statistical treatment.

Laboratory code	chloroform µg/L		bromoform µg/L		dichlorobromomethane µg/L		Laboratory code
	Mean	z-score	Mean	z-score	Mean	z-score	
1	16,750	+1,17	6,755	+0,08	12,900	+1,44	1
2	13,150	-0,59	5,690	-0,94	10,525	-0,47	2
3	15,075	+0,35	10,600	**+3,75**	12,110	+0,80	3
4	15,975	+0,79	4,565	-2,01	13,460	+1,89	4
5	12,970	-0,68	7,740	+1,02	11,510	+0,32	5
6	10,500	-1,88	4,710	-1,87	8,570	-2,05	6
7	14,270	-0,04	11,010	**+4,14**	4,840	**-5,05**	7
8	14,035	-0,16	7,490	+0,78	10,775	-0,27	8
9	14,425	+0,03	6,915	+0,23	11,345	+0,19	9
10	11,010	-1,63	5,925	-0,71	9,240	-1,51	10
11	14,985	+0,31	-	-	-	-	11
12	13,740	-0,30	7,045	+0,36	10,745	-0,30	12
13	11,640	-1,33	4,580	-2,00	9,975	-0,92	13
14	16,640	+1,12	7,255	+0,56	12,765	+1,33	14
15	15,205	+0,42	6,595	-0,07	11,485	+0,30	15
16	15,385	+0,50	5,830	-0,80	11,790	+0,55	16
17	14,570	+0,10	9,605	+2,80	12,075	+0,78	17
18	10,025	-2,12	5,290	-1,32	8,795	-1,87	18
19	19,750	+2,64	6,910	+0,23	13,675	+2,06	19
20	14,245	-0,05	7,240	+0,54	11,575	+0,37	20
21	12,765	-0,78	5,985	-0,66	9,980	-0,91	21
22	14,200	-0,08	5,850	-0,78	9,770	-1,08	22
23	12,050	-1,13	6,330	-0,33	9,950	-0,94	23
24	13,635	-0,35	7,510	+0,80	11,435	+0,26	24
25	15,750	+0,68	5,850	-0,78	11,400	+0,23	25
26	14,925	+0,28	7,470	+0,76	11,805	+0,56	26
27	16,910	+1,25	5,930	-0,71	13,100	+1,60	27
28	10,495	-1,89	3,995	-2,55	7,460	-2,94	28
29	16,570	+1,08	7,255	+0,56	11,390	+0,22	29
30	16,055	+0,83	7,610	+0,89	11,930	+0,66	30
31	13,790	-0,28	6,600	-0,07	11,185	+0,06	31
32	16,220	+0,91	7,525	+0,81	12,500	+1,12	32
33	13,680	-0,33	7,070	+0,38	11,015	-0,08	33
34	18,040	+1,80	7,200	+0,50	11,565	+0,36	34
35	13,375	-0,48	7,025	+0,34	11,235	+0,10	35
36	16,005	+0,81	<0,970	**[-5,92; -5,44]**	5,015	**-4,91**	36
37	15,490	+0,55	7,005	+0,32	10,635	-0,38	37
38	12,225	-1,04	5,735	-0,89	9,850	-1,02	38
39	11,470	-1,41	6,140	-0,51	6,735	**-3,52**	39
40	15,875	+0,74	6,450	-0,21	11,320	+0,17	40
41	13,950	-0,20	7,085	+0,39	10,750	-0,29	41
42	11,695	-1,30	3,520	**-3,01**	5,850	**-4,24**	42
43	13,900	-0,22	<0,400	**[-6,37; -5,98]**	9,935	-0,95	43
44	15,245	+0,43	8,120	+1,38	12,091	+0,79	44
45	13,300	-0,52	6,930	+0,25	10,810	-0,24	45
46	18,925	+2,23	7,310	+0,61	13,700	+2,08	46
47	15,800	+0,71	6,090	-0,56	12,190	+0,87	47
48	12,415	-0,95	8,900	+2,13	12,145	+0,83	48
49	11,390	-1,45	4,785	-1,80	8,400	-2,18	49

Please note: z-scores might be modified following the thorough statistical treatment.

Laboratory code	dibromochloromethane µg/L		trihalomethanes (THMs) µg/L		Laboratory code
	Mean	z-score	Mean	z-score	
1	5,715	+0,93	42,050	+1,16	1
2	4,785	-0,48	34,160	-0,22	2
3	5,600	+0,76	-	-	3
4	4,695	-0,62	38,695	+0,57	4
5	5,710	+0,92	28,275	-1,24	5
6	3,530	-2,39	27,310	-1,41	6
7	5,825	+1,10	35,580	+0,03	7
8	5,525	+0,64	37,825	+0,42	8
9	4,945	-0,24	37,630	+0,39	9
10	4,495	-0,92	30,670	-0,83	10
11	-	-	-	-	11
12	5,270	+0,25	36,800	+0,24	12
13	4,325	-1,18	30,520	-0,85	13
14	5,825	+1,10	42,480	+1,23	14
15	5,150	+0,07	29,625	-1,01	15
16	4,950	-0,23	29,570	-1,02	16
17	7,255	**+3,28**	43,500	+1,41	17
18	4,195	-1,38	28,305	-1,24	18
19	6,480	+2,10	46,815	+1,99	19
20	5,140	+0,06	38,200	+0,49	20
21	4,860	-0,37	33,590	-0,32	21
22	4,495	-0,92	26,650	-1,53	22
23	4,915	-0,29	33,245	-0,38	23
24	5,150	+0,07	37,725	+0,40	24
25	4,750	-0,54	37,750	+0,41	25
26	6,345	+1,89	40,545	+0,90	26
27	4,950	-0,23	40,890	+0,96	27
28	1,690	**-5,20**	23,640	-2,05	28
29	5,890	+1,20	31,650	-0,65	29
30	5,490	+0,59	41,085	+0,99	30
31	5,050	-0,08	36,600	+0,21	31
32	6,375	+1,94	42,620	+1,26	32
33	5,065	-0,06	36,825	+0,25	33
34	5,290	+0,29	42,095	+1,17	34
35	5,245	+0,22	36,880	+0,26	35
36	0,890	**-6,41**	20,360	-2,62	36
37	4,965	-0,21	38,095	+0,47	37
38	4,775	-0,50	32,585	-0,49	38
39	4,750	-0,54	29,095	-1,10	39
40	4,805	-0,45	38,450	+0,53	40
41	5,410	+0,47	37,200	+0,31	41
42	2,820	**-3,47**	19,230	-2,82	42
43	4,240	-1,31	25,500	-1,73	43
44	6,171	+1,63	41,626	+1,08	44
45	5,275	+0,26	36,350	+0,16	45
46	5,565	+0,70	35,545	+0,02	46
47	3,815	-1,96	37,895	+0,43	47
48	6,790	+2,57	40,250	+0,84	48
49	3,745	-2,07	28,320	-1,23	49

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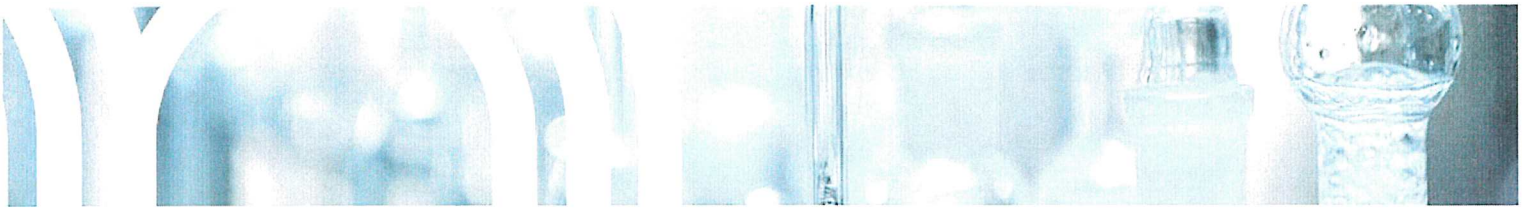
Mrs WOBST Anja

An der Ohratalsperre

99885 LUISENTHAL

ALLEMAGNE

Organic pollutants in fresh waters		
PT	**Title**	**Assigned code**
21M66.2	THMs in swimming pool waters	18



Improving together

RESULTS REVIEW
21M66.2

THMS IN SWIMMING POOL WATERS

OCTOBER 2021 TO NOVEMBER 2021

AGLAE Association
Parc des Pyramides
427 rue des Bourreliers
59320 Hallennes lez Haubourdin
FRANCE
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PREPARATION OF THE TEST MATERIALS

Matrix used: Swimming pool water

Number of batches prepared: 1

Batch number	Group of parameters	Bottles Identification	Stabilisation
Batch 1	chloroform, bromoform, dichlorobromomethane, dibromochloromethane, THMs	100mL glass bottles labelled A, B	Addition of ascorbic acid until pH<4

TABLE WITH PROVISIONAL MEANS AND STANDARD DEVIATIONS FOR EACH PARAMETER

Parameter	Value targeted by spiking [1]	Mean (m)	Standard deviation (Sz)	Unit
chloroform	47,40	45,067	5,670	µg/L
bromoform	25,55	21,879	3,017	µg/L
dichlorobromomethane	15,81	14,575	1,595	µg/L
dibromochloromethane	16,37	14,698	1,427	µg/L
THMs	104,64	93,929	9,029	µg/L

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TABLES WITH PROVISIONAL MEANS AND Z-SCORES FOR EACH PARAMETER AND EACH PARTICIPANT: see pages 3 and 4

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Friday 26 November 2021 (provisional date)
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Please note: z-scores might be modified following the thorough statistical treatment.

Laboratory code	chloroform		bromoform		dichlorobromomethane		Laboratory code
	µg/L		µg/L		µg/L		
	Mean	z-score	Mean	z-score	Mean	z-score	
1	40,070	-0,88	22,890	+0,34	13,590	-0,62	1
2	42,120	-0,52	18,750	-1,04	13,430	-0,72	2
3	39,850	-0,92	19,350	-0,84	12,250	-1,46	3
4	40,340	-0,83	21,330	-0,18	12,920	-1,04	4
5	43,660	-0,25	28,235	+2,11	15,780	+0,76	5
6	49,620	+0,80	19,770	-0,70	14,365	-0,13	6
7	50,200	+0,91	24,450	+0,85	16,050	+0,92	7
8	58,520	+2,37	21,720	-0,05	15,900	+0,83	8
9	44,705	-0,06	24,345	+0,82	15,035	+0,29	9
10	42,500	-0,45	14,050	-2,59	10,430	-2,60	10
11	41,860	-0,57	22,780	+0,30	13,815	-0,48	11
12	43,340	-0,30	22,630	+0,25	14,930	+0,22	12
13	51,905	+1,21	23,620	+0,58	16,395	+1,14	13
14	51,430	+1,12	20,595	-0,43	17,585	+1,89	14
15	48,950	+0,68	29,530	+2,54	16,710	+1,34	15
16	64,340	**+3,40**	22,375	+0,16	14,345	-0,14	16
17	45,735	+0,12	22,255	+0,12	15,460	+0,56	17
18	43,165	-0,34	18,565	-1,10	13,440	-0,71	18
19	43,575	-0,26	18,805	-1,02	13,455	-0,70	19
20	52,310	+1,28	18,340	-1,17	15,630	+0,66	20
21	38,425	-1,17	19,245	-0,87	13,615	-0,60	21
22	97,400	**+9,23**	39,550	**+5,86**	27,915	**+8,36**	22
23	42,365	-0,48	20,670	-0,40	12,555	-1,27	23
24	54,440	+1,65	17,910	-1,32	15,975	+0,88	24
25	39,770	-0,93	22,265	+0,13	14,290	-0,18	25
26	50,118	+0,89	23,763	+0,62	14,914	+0,21	26
27	42,700	-0,42	22,090	+0,07	13,590	-0,62	27
28	44,495	-0,10	9,435	**-4,12**	12,305	-1,42	28
29	43,680	-0,24	24,975	+1,03	14,510	-0,04	29
30	41,875	-0,56	21,260	-0,21	13,645	-0,58	30
31	39,380	-1,00	19,605	-0,75	14,055	-0,33	31
32	37,500	-1,33	24,360	+0,82	12,555	-1,27	32
33	49,890	+0,85	21,070	-0,27	16,510	+1,21	33
34	44,345	-0,13	18,410	-1,15	13,560	-0,64	34
35	46,450	+0,24	24,350	+0,82	15,450	+0,55	35
36	43,735	-0,23	22,670	+0,26	12,735	-1,15	36
37	35,873	-1,62	24,333	+0,81	15,840	+0,79	37
38	48,169	+0,55	20,010	-0,62	14,910	+0,21	38
39	47,780	+0,48	22,650	+0,26	13,740	-0,52	39
40	39,670	-0,95	20,715	-0,39	12,760	-1,14	40
41	68,295	**+4,10**	32,585	**+3,55**	22,370	**+4,89**	41

Please note: z-scores might be modified following the thorough statistical treatment.

Laboratory code	dibromochloromethane µg/L		trihalomethanes (THMs) µg/L		Laboratory code
	Mean	z-score	Mean	z-score	
1	12,520	-1,53	89,075	-0,54	1
2	13,410	-0,90	87,710	-0,69	2
3	12,350	-1,65	83,800	-1,12	3
4	13,915	-0,55	88,505	-0,60	4
5	18,590	+2,73	79,175	-1,63	5
6	14,260	-0,31	98,010	+0,45	6
7	15,700	+0,70	82,400	-1,28	7
8	15,845	+0,80	-	-	8
9	16,015	+0,92	100,100	+0,68	9
10	9,550	**-3,61**	62,500	**-3,48**	10
11	15,360	+0,46	93,815	-0,01	11
12	15,080	+0,27	95,980	+0,23	12
13	15,875	+0,82	84,105	-1,09	13
14	15,580	+0,62	105,200	+1,25	14
15	17,580	+2,02	112,775	+2,09	15
16	14,700	0,00	115,760	+2,42	16
17	15,080	+0,27	-	-	17
18	13,650	-0,73	88,820	-0,57	18
19	0,065	**-10,25**	75,900	-2,00	19
20	14,130	-0,40	100,405	+0,72	20
21	18,265	+2,50	89,500	-0,49	21
22	28,245	**+9,49**	193,100	**+10,98**	22
23	14,835	+0,10	90,425	-0,39	23
24	13,525	-0,82	101,850	+0,88	24
25	14,730	+0,02	91,055	-0,32	25
26	15,487	+0,55	104,281	+1,15	26
27	13,800	-0,63	92,165	-0,20	27
28	7,890	**-4,77**	74,120	-2,19	28
29	15,065	+0,26	74,680	-2,13	29
30	13,905	-0,56	90,685	-0,36	30
31	12,190	-1,76	85,235	-0,96	31
32	14,200	-0,35	88,615	-0,59	32
33	14,420	-0,19	101,890	+0,88	33
34	13,180	-1,06	89,495	-0,49	34
35	15,200	+0,35	101,450	+0,83	35
36	13,950	-0,52	93,085	-0,09	36
37	16,135	+1,01	-	-	37
38	14,049	-0,46	96,000	+0,23	38
39	13,805	-0,63	97,975	+0,45	39
40	13,320	-0,97	86,465	-0,83	40
41	22,300	**+5,33**	145,540	**+5,72**	41