

Annual Compliance with Drinking Water Parameters - Detailed Results for 2000

Final Report to the Drinking Water Inspectorate

**ANNUAL COMPLIANCE WITH DRINKING WATER PARAMETERS -
DETAILED RESULTS FOR 2000**

Final Report to the Drinking Water Inspectorate

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CONTENTS

Page

LIST OF TABLES	ii
LIST OF FIGURES	ii
EXECUTIVE SUMMARY	1
1. INTRODUCTION	3
1.1 Background	3
1.2 The present report	3
2. INDIVIDUAL PARAMETER COMPLIANCE	5
3. WATER QUALITY INDEX RESULTS	9
3.1 Definition of the industry target value	9
3.2 Overall Index	9
3.3 Operational Index	9
4. DETERMINING TRENDS IN PERFORMANCE	13
4.1 Methodology	13
4.2 Results - Overall Index	13
4.3 Results - Operational Index	14
5. RESULTS FOR WALES	15
5.1 Introduction	15
5.2 Individual parameter compliance	15
5.3 Indexes	15
5.4 Trends	17
6. CONCLUSIONS	19

APPENDICES

APPENDIX A	COMPLIANCE RESULTS FOR INDIVIDUAL PARAMETERS	21
APPENDIX B	RESULTS FOR THE WATER QUALITY INDEXES	39

LIST OF TABLES

Table 1.1 - Water company codes	4
Table 2.1 - Mean zonal compliance values for 2000 by parameter and company	5
Table 3.1 - Overall Index results for 2000	10
Table 3.2 - Operational Index results for 2000	11
Table 5.1 - Mean zonal compliance values for 2000 by parameter and company (Welsh)	16
Table 5.2 - Overall Index results for 2000 (Welsh)	16
Table 5.3 - Operational Index results for 2000 (Welsh)	17

LIST OF FIGURES

Figure 4.1 - Statistically significant variations in Overall Index performance	13
Figure 4.2 - Statistically significant variations in Operational Index performance	14

ANNUAL COMPLIANCE WITH DRINKING WATER PARAMETERS - DETAILED RESULTS FOR 2000

EXECUTIVE SUMMARY

During 1998-99, WRc carried out a statistical consultancy project for the Drinking Water Inspectorate with the objective of developing a statistically sound system for summarising water companies' annual compliance performance for the main water quality parameters. After a continuing process of development and refinement, the finalised scheme was applied to the 1998 compliance data for all companies in England and Wales and a summary of the findings included in the Chief Inspector's report. At around the same time WRc produced a project report (DETR/DWI 4757) which provided a comprehensive account of the statistical methodology used, and also presented more detailed graphical and tabular information.

A year later WRc carried out an analysis of the 1999 compliance data for the Inspectorate, using the methodology that had been developed in the previous year. This was reported in DETR/DWI 4919.

WRc has recently undertaken a similar analysis of the 2000 compliance data. The main findings from the analysis have been summarised in the Chief Inspector's report, and the present report provides the more detailed tables and graphs from that analysis for reference purposes. These fall into three categories:

1. Comparisons of company performance against target (defined as overall mean zonal compliance) for each of 17 key parameters;
2. Broader assessments of company performance using Overall and Operational indexes; and
3. Identification of trends in Overall and Operational indexes over the five-year period 1996-2000.

For the last two years, following the creation of the National Assembly for Wales, WRc has also provided the Inspectorate with a summary covering just those companies involved (wholly or in part) in supplying water to Wales. For completeness, the Welsh summary has been included in the present report.

1. INTRODUCTION

1.1 Background

During 1998-99, WRc carried out a statistical consultancy project for the Drinking Water Inspectorate with the overall objective of developing a statistically sound system for summarising water companies' annual compliance performance with the main water quality parameters. The system had three main aims:

1. to compare performance between companies in any one year in respect of any specific parameter of interest;
2. to develop Overall and Operational indexes of performance which would provide a broader basis of comparison between companies in any one year; and
3. to identify companies showing statistically significant trends in their performance indexes from 1996 onwards.

After a continuing process of development and refinement, the scheme was finalised in time for it to be applied to the 1998 compliance data for all companies in England and Wales, and a summary of the results was included in the Chief Inspector's report that was published in July 1999. At around the same time WRc produced a project report (DETR/DWI 4757) which provided a comprehensive account of the statistical methodology, and also presented more detailed graphical and tabular information for that reporting year. To provide a broader context for the results, the report also presented the back-calculated results for the 1996 and 1997 compliance data.

A year later WRc carried out a similar analysis of the 1999 compliance data for the Inspectorate. This was reported in DETR/DWI 4919.

1.2 The present report

WRc has recently repeated last year's exercise on the 2000 compliance data. As before, the main findings have been included in the Chief Inspector's report, and so the purpose of the present report is to present the more detailed elements of the 2000 results for reference purposes. We have followed almost exactly the same format and statistical methodology as in last year's report. The main changes are that we have (a) discontinued the 17-parameter version of the Overall Index and used only the 15-parameter version that was introduced last year, and (b) modified the way in which we calculate the overall target values for the Overall and Operational Indexes (see Section 3).

Accordingly, Section 2 presents the 2000 compliance results for each company for each of the 17 key parameters, with supporting plots provided in Appendix A. Section 3 presents the water quality index results, with the corresponding plots shown in Appendix B. Section 4 then summarises the results of the analysis to determine which companies have shown a statistically significant time trend in their Overall or Operational Index over the period 1996-2000.

One further change to this year's report is the inclusion of a new Section 5, which presents the corresponding results for just those companies which supply water (wholly or in part) to Wales.

For compactness, water companies are identified in all tables and graphs by just their three-character codes ('SES' for Sutton and East Surrey, for example). Table 1.1 provides a key linking the codes to their full company names.

Table 1.1 - Water company codes

Company	Code
Albion	ALB
Anglian	ANG
Bournemouth	BWH
Bristol	BRL
Cambridge	CAM
Cholderton	CHO
Dee Valley	DVW
Welsh	WSH
Essex & Suffolk	ESK
Folkestone	FLK
Hartlepool	HPL
Mid Kent	MKT
North Surrey	NSY
North West	NWT
Northumbrian	NNE
Portsmouth	PRT
Severn Trent	SVT
South East	SEW
South Staffs	SST
South West	SWT
Southern	SRN
Sutton & East Surrey	SES
Tendring Hundred	THD
Thames	TMS
Three Valleys	TVW
Wessex	WSX
Yorkshire	YKS
Severn Trent (Welsh zones only)	SVT(W)

2. INDIVIDUAL PARAMETER COMPLIANCE

Mean zonal compliance values and their associated 95% confidence intervals have been calculated for a total of 17 parameters (although two of these - Nitrite and PAH - are no longer included in the Overall Index). The means are listed in Table 2.1 below, with the flag 'Hi' or 'Lo' indicating values that are statistically significantly higher or lower than the grand mean zonal target for that parameter.

The results are also shown graphically in Appendix A.

Table 2.1 - Mean zonal compliance values for 2000 by parameter and company

	ALB	ANG	BWH	BRL	CAM	CHO
Aluminium	100.00	100.00	100.00	100.00	100.00	100.00
Coliforms	100.00	99.70 Hi	99.85 Hi	99.64	98.83 Lo	100.00
Colour	100.00	100.00	100.00	100.00	100.00	100.00
Fcoliforms	100.00	99.96	100.00	100.00	100.00	100.00
pH	100.00	100.00 Hi	100.00	100.00	100.00	100.00
Iron	100.00	99.61 Hi	99.43	99.55	99.73	100.00
Lead		100.00 Hi	100.00	100.00	100.00	100.00
Manganese	100.00	100.00 Hi	100.00	100.00	100.00	100.00
Nitrate	100.00	99.92	100.00	100.00	100.00	100.00
Nitrite	100.00	93.17 Lo	97.76	100.00 Hi	100.00	100.00
Odour	100.00	99.97	100.00	100.00	100.00	100.00
PAH	100.00	98.44	98.67	97.53	99.73	100.00
Taste	100.00	99.97	100.00	100.00	100.00	100.00
Tot.pests	100.00	100.00	100.00	100.00	100.00	100.00
Indiv.pest	100.00	100.00	100.00	100.00	100.00	100.00
Trihalom.	100.00	100.00 Hi	100.00	100.00	100.00	100.00
Turbidity	100.00	99.97	99.87	100.00	100.00	100.00
Mean:	100.00	99.45	99.74	99.81	99.90	100.00

Table 2.1 - continued

	DVW	WSH	ESK	FLK	HPL	MKT
Aluminium	99.71	99.88	100.00	100.00	100.00	100.00
Coliforms	100.00 Hi	99.73 Hi	99.39	100.00 Hi	99.74	99.25
Colour	100.00	100.00	100.00	100.00	100.00	100.00
Fcoliforms	100.00	99.95	99.96	100.00	100.00	99.92
pH	100.00	99.95	100.00	100.00	100.00	100.00
Iron	99.42	98.47 Lo	99.79 Hi	100.00	100.00	97.53 Lo
Lead	100.00	99.65	99.94 Hi	98.89	100.00	100.00
Manganese	99.90	99.70	99.93	100.00	100.00	99.51
Nitrate	100.00	100.00	100.00	100.00	100.00	100.00
Nitrite	98.61	97.88 Lo	98.72	100.00	100.00	100.00 Hi
Odour	100.00	99.93	100.00	100.00	100.00	100.00
PAH	100.00	97.30 Lo	99.86 Hi	100.00	100.00	95.13 Lo
Taste	100.00	99.93	100.00	100.00	100.00	100.00
Tot.pests	100.00	100.00	100.00	100.00	100.00	100.00
Indiv.pest	100.00	99.99	100.00 Hi	100.00	100.00	100.00
Trihalom.	100.00	99.68 Hi	99.72	100.00	100.00	100.00
Turbidity	99.54	100.00	100.00	100.00	100.00	100.00
Mean:	99.83	99.53	99.84	99.93	99.98	99.49

	NSY	NWT	NNE	PRT	SVT	SEW
Aluminium	100.00	99.89	99.79 Lo	100.00	99.93	99.95
Coliforms	99.49	99.43	99.59	99.54	99.57 Hi	98.98 Lo
Colour	100.00	100.00	99.84 Lo	100.00	100.00	100.00
Fcoliforms	100.00	99.97	99.96	99.93	99.97	99.86
pH	100.00	99.88	100.00 Hi	100.00	100.00	100.00
Iron	99.40	98.01 Lo	98.33 Lo	100.00	99.71 Hi	98.45
Lead	100.00	97.99 Lo	99.21	100.00	99.90	99.72
Manganese	100.00	99.66 Lo	99.52 Lo	100.00	99.91	99.81
Nitrate	100.00	99.91	100.00	100.00	100.00 Hi	100.00
Nitrite	100.00	99.95 Hi	100.00 Hi	100.00 Hi	99.92 Hi	100.00 Hi
Odour	100.00	100.00	99.98	100.00	100.00	100.00
PAH	100.00	99.55 Hi	99.95 Hi	99.18	98.90	94.96 Lo
Taste	100.00	100.00	99.96	100.00	99.98	100.00
Tot.pests	100.00	99.98	100.00	100.00	100.00	100.00
Indiv.pest	100.00	99.99	99.99	100.00	100.00	99.98 Lo
Trihalom.	100.00	94.92 Lo	99.59	100.00	100.00 Hi	100.00
Turbidity	100.00	99.90	99.92	100.00	99.94	100.00
Mean:	99.93	99.35	99.74	99.92	99.87	99.51

Table 2.1 - continued

	SST	SWT	SRN	SES	THD	TMS
Aluminium	100.00	100.00	100.00	100.00	100.00	99.98
Coliforms	99.60	99.62	99.73 Hi	99.14	99.80	98.76 Lo
Colour	100.00	100.00	100.00	100.00	100.00	100.00
Fcoliforms	100.00	99.98	99.99 Hi	99.94	99.80	99.96
pH	100.00	99.84	100.00	100.00	100.00	100.00
Iron	99.65 Hi	97.13 Lo	99.92 Hi	99.78 Hi	100.00	99.86 Hi
Lead	100.00 Hi	99.88	99.96 Hi	99.96 Hi	100.00	99.83
Manganese	100.00	99.73	100.00	100.00	98.44	100.00 Hi
Nitrate	100.00	100.00	99.67	100.00	100.00	99.95
Nitrite	100.00 Hi	100.00 Hi	100.00 Hi	92.38 Lo	98.44	99.04
Odour	99.90	100.00	99.88	100.00	100.00	99.96
PAH	100.00 Hi	97.64	96.21 Lo	100.00	100.00	99.10
Taste	99.90	100.00	100.00	100.00	100.00	100.00
Tot.pests	100.00	100.00	100.00	100.00	100.00	100.00
Indiv.pest	100.00	100.00	100.00	100.00	100.00	100.00 Hi
Trihalom.	100.00	100.00 Hi	99.51	99.17	100.00	100.00 Hi
Turbidity	100.00	99.95	100.00	99.94	98.44	99.93
Mean:	99.94	99.63	99.70	99.43	99.70	99.79

	TVW	WSX	YKS
Aluminium	100.00	100.00	99.72 Lo
Coliforms	99.42	99.57	99.67 Hi
Colour	100.00	100.00	99.88 Lo
Fcoliforms	99.99 Hi	99.96	99.89 Lo
pH	100.00 Hi	100.00 Hi	99.81 Lo
Iron	99.77 Hi	99.47 Hi	98.61 Lo
Lead	99.57	100.00 Hi	99.84
Manganese	100.00	99.96	99.71 Lo
Nitrate	100.00	99.93	100.00
Nitrite	98.95	100.00 Hi	99.46 Hi
Odour	100.00	100.00	100.00
PAH	99.50	98.28	99.47 Hi
Taste	100.00	100.00	100.00
Tot.pests	100.00	100.00	100.00
Indiv.pest	99.93	100.00	100.00 Hi
Trihalom.	100.00 Hi	100.00 Hi	99.55 Hi
Turbidity	99.96	99.97	99.92
Mean:	99.83	99.83	99.74

3. WATER QUALITY INDEX RESULTS

3.1 Definition of the industry target value

For both the Overall and the Operational Index, our practice in previous years has been to set the industry target as the *simple arithmetic mean* of all company Index values (thus taking no account of the relative sizes of companies). However, this is inconsistent with the ‘grand mean zonal compliance’ method that we use for setting the industry target for individual parameters. In discussion with the Directorate, therefore, we have decided to remove this slight anomaly and henceforth use the *mean zonal approach* for calculating Index targets also.

It should be noted that the numerical effect of moving from a simple average to a zone-weighted average depends very much on how close the indexes for the larger companies are to the simple overall mean index. For example, in 2000 the lowest percent compliance for trihalomethanes happens to be for one of the largest companies (North West), and this has a particularly marked effect in the case of the Operational Index (for which THM is one of the six component parameters). The unweighted mean across companies is 99.78, whereas the grand zonal mean is 99.66.

3.2 Overall Index

Values for the Overall Index together with their associated 95% confidence intervals are presented in Table 3.1, and shown graphically in Appendix B. A comparison of the confidence intervals with the grand zonal mean index of 99.79 shows that eight companies are significantly higher and two are significantly lower than average.

Note that, as the Inspectorate is no longer enforcing compliance with the Nitrite and PAH limits, these two parameters have been excluded from the Overall Index.

3.3 Operational Index

Values for the Operational Index together with their associated 95% confidence intervals are presented in Table 3.3. A comparison of the confidence intervals with the grand mean index of 99.66 shows that eight companies are significantly higher than average, and four are significantly lower. It is interesting to note that - as with last year’s results - the significant differences are restricted to companies which tend to have the most extensive sampling programmes. This causes their confidence intervals to be narrower than those for the smaller companies, which in turn means that relatively small deviations from the mean still get flagged as being statistically significant.

Table 3.1 - Overall Index results for 2000

Company	Index	95% Conf. Int.		
		Lower	Upper	
ALB	100.00	92.86	100.00	
CHO	100.00	90.92	100.00	
HPL	99.98	95.51	100.00	
PRT	99.96	99.71	100.00	
BRL	99.95	99.77	100.00	
BWH	99.94	99.57	100.00	
ANG	99.94	99.89	99.99	Sig high
SST	99.94	99.85	100.00	Sig high
SVT	99.93	99.88	99.97	Sig high
FLK	99.93	98.68	100.00	
NSY	99.93	99.52	100.00	
WSX	99.92	99.84	100.00	Sig high
ESK	99.92	99.84	99.99	Sig high
SRN	99.91	99.82	100.00	Sig high
TVW	99.91	99.81	100.00	Sig high
DVW	99.90	99.49	100.00	
CAM	99.90	98.82	100.00	
TMS	99.88	99.85	99.92	Sig high
SES	99.86	99.65	100.00	
WSH	99.79	99.72	99.87	
SEW	99.78	99.65	99.92	
YKS	99.77	99.73	99.82	
THD	99.77	98.70	100.00	
MKT	99.75	99.07	100.00	
SWT	99.74	99.66	99.82	
NNE	99.71	99.65	99.77	Sig low
NWT	99.30	99.25	99.35	Sig low
	99.79	Grand zonal mean target		

Note: Index is based on 15 parameters, viz those listed in Table 2.1 but excluding Nitrite and PAH.

Table 3.2 - Operational Index results for 2000

Company	Index	95% Conf. Int.		
		Lower	Upper	
ALB	100.00	88.74	100.00	
FLK	100.00	97.46	100.00	
HPL	100.00	94.14	100.00	
CHO	100.00	86.59	100.00	
PRT	99.99	99.46	100.00	
CAM	99.95	98.91	100.00	
TMS	99.95	99.91	100.00	Sig high
TVW	99.95	99.81	100.00	Sig high
SST	99.94	99.76	100.00	Sig high
BRL	99.92	99.64	100.00	
ANG	99.92	99.82	100.00	Sig high
SVT	99.91	99.84	99.98	Sig high
SRN	99.90	99.79	100.00	Sig high
ESK	99.90	99.75	100.00	Sig high
NSY	99.90	99.23	100.00	
WSX	99.89	99.78	100.00	Sig high
BWH	99.88	99.32	100.00	
SES	99.81	99.39	100.00	
DVW	99.76	99.07	100.00	
SEW	99.68	99.43	99.93	
WSH	99.61	99.48	99.75	
YKS	99.57	99.49	99.65	Sig low
NNE	99.52	99.41	99.63	Sig low
MKT	99.49	98.23	100.00	
SWT	99.47	99.32	99.61	Sig low
THD	99.45	98.02	100.00	
NWT	98.73	98.61	98.84	Sig low
	99.66	Grand zonal mean target		

Note: Index is based on iron, manganese, turbidity, aluminium, faecal coliforms and THMs.

4. DETERMINING TRENDS IN PERFORMANCE

4.1 Methodology

The technical description of the statistical methodology given in Appendix A of report DETR/DWI 4757 related specifically to the three-year assessment period. With five years of index data now being available rather than three, some adjustments were needed to the details of the algorithm. However, the principle of the method remains exactly the same.

4.2 Results - Overall Index

Overall Index values were available for the full five-year span for 26 companies. For 17 of these, no significant differences were found (at the two-sided 95% confidence level) over the five years. The results for the other nine companies, as highlighted in Figure 4.1, are that:

- two companies show a statistically significant *upward linear trend* (the solid lines); and
- seven companies show statistically significant *differences between years* (the dotted lines).

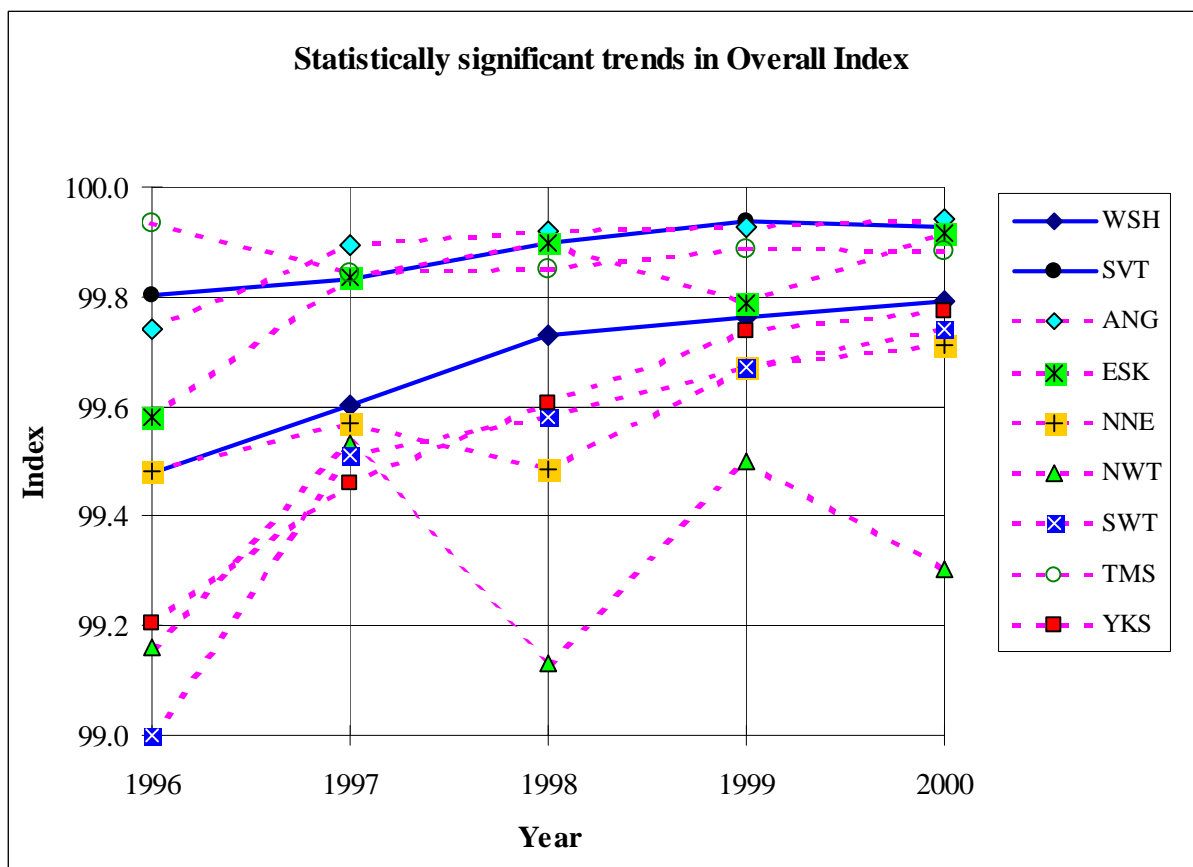


Figure 4.1 - Statistically significant variations in Overall Index performance

4.3 Results - Operational Index

For 18 of the 26 companies, no significant differences were found (at the two-sided 95% confidence level) for the five years' Operational Index values. The results for the other eight companies, as highlighted in Figure 4.2 below, are that:

- five companies show a statistically significant *upward linear trend* (the solid lines); and
- three companies show statistically significant *differences between years* (the dotted lines).

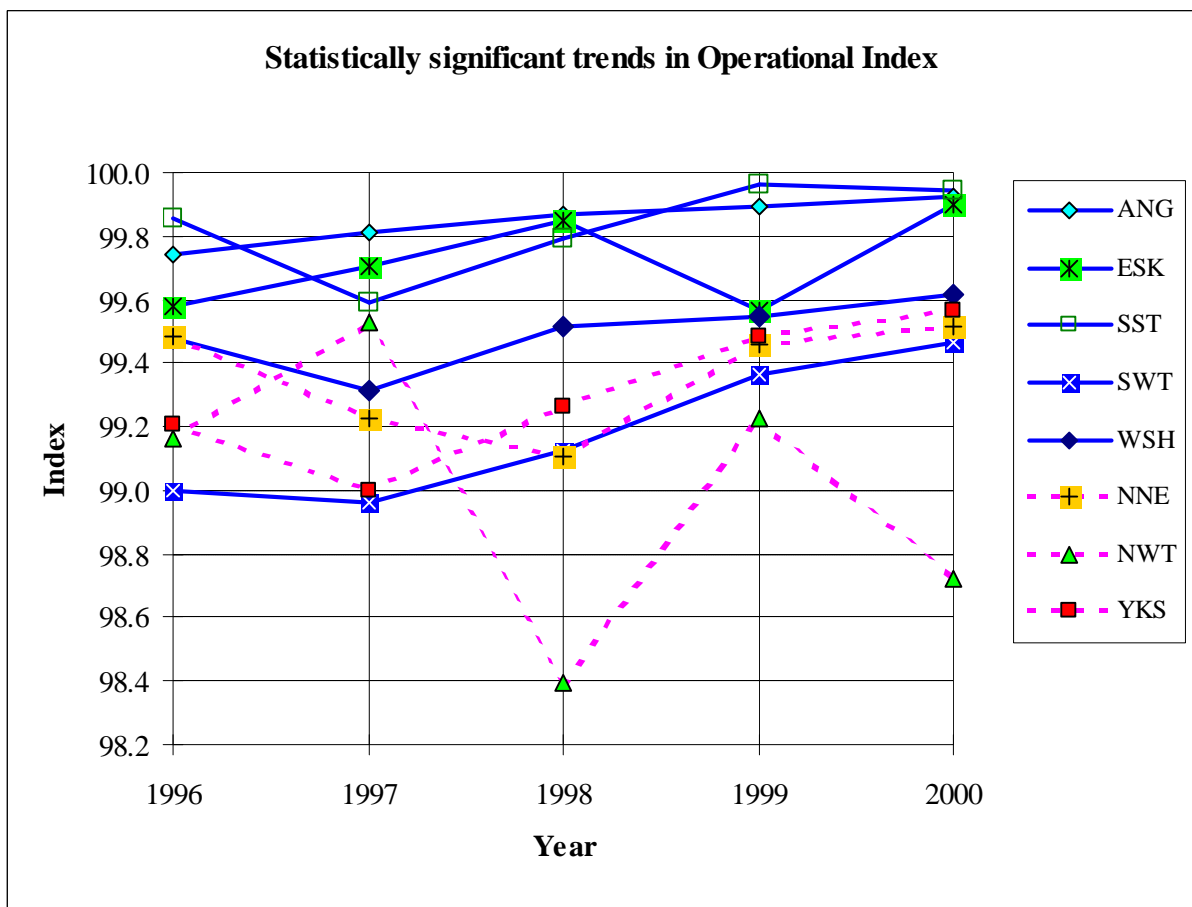


Figure 4.2 - Statistically significant variations in Operational Index performance

5. RESULTS FOR WALES

5.1 Introduction

The results reported in Sections 2 to 4 relate to all water companies in England and Wales. Since the creation of the National Assembly for Wales, however, WRc has also provided the Inspectorate with a separate summary of performance covering just those companies involved (wholly or in part) in supplying water to Welsh zones. These are:

- ? Albion Water (ALB);
- ? Dee Valley Water (DVW);
- ? a small part (currently 4 zones) of Severn Trent Water (SVT(W)); and
- ? Welsh Water (WSH).

For completeness we have included the Welsh summary in the present report.

5.2 Individual parameter compliance

Mean zonal compliance values for the 17 individual parameters are listed in Table 5.1 below for each of the four companies supplying Welsh zones. The flag 'Hi' or 'Lo' indicates values that are statistically significantly higher or lower than the grand mean zonal target for that parameter. For consistency, the same targets have been used as those in the England and Wales assessments presented in Section 2 and illustrated in Appendix A. (We did consider the alternative option of calculating Welsh-only targets, but decided that this would be inappropriate given the small number of companies involved and also their very different sizes - viz 1, 18, 4 and 183 zones.)

5.3 Indexes

Values for the Overall Index together with their associated 95% confidence intervals are presented in Table 5.2. A comparison of the confidence intervals with the grand England and Wales zonal mean index of 99.79 shows that none of the four companies is significantly higher or lower than average.

Values for the Operational Index together with their associated 95% confidence intervals are similarly presented in Table 5.3. Again, none of the four companies is significantly higher or lower than the England and Wales grand zonal mean index of 99.66.

Table 5.1 - Mean zonal compliance values for 2000 by parameter and company (Welsh)

	ALB	DVW	SVT(W)	WSH
Aluminium	100.00	99.71	100.00	99.88
Coliforms	100.00	100.00 Hi	98.08 Lo	99.73 Hi
Colour	100.00	100.00	100.00	100.00
Fcoliforms	100.00	100.00	100.00	99.95
pH	100.00	100.00	100.00	99.95
Iron	100.00	99.42	100.00	98.47 Lo
Lead		100.00	100.00	99.65
Manganese	100.00	99.90	100.00	99.70
Nitrate	100.00	100.00	100.00	100.00
Nitrite	100.00	98.61	100.00	97.88 Lo
Odour	100.00	100.00	100.00	99.93
PAH	100.00	100.00	100.00	97.30 Lo
Taste	100.00	100.00	100.00	99.93
Tot.pests	100.00	100.00	100.00	100.00
Indiv.pest	100.00	100.00	100.00	99.99
Trihalom.	100.00	100.00	100.00	99.68 Hi
Turbidity	100.00	99.54	100.00	100.00
Mean:	100.00	99.83	99.89	99.53

Table 5.2 - Overall Index results for 2000 (Welsh)

Company	Index	95% Conf. Int.	
		Lower	Upper
ALB	100.00	92.86	100.00
SVT(W)	99.87	99.76	100.00
DVW	99.90	99.49	100.00
WSH	99.79	99.72	99.87
	99.79	Grand zonal mean target	

Note: Index is based on 15 parameters, viz those listed in Table 2.1 but excluding Nitrite and PAH.

Table 5.3 - Operational Index results for 2000 (Welsh)

Company	Index	95% Conf. Int.		
		Lower	Upper	
ALB	100.00	88.74	100.00	
SVT(W)	100.00	95.21	100.00	
DVW	99.76	99.07	100.00	
WSH	99.61	99.48	99.75	
	99.66	Grand zonal mean target		

Note: Index is based on iron, manganese, turbidity, aluminium, faecal coliforms and THMs.

5.4 Trends

For three of the four companies (ALB, DVW and WSH) the results have already been reported in Section 4. Thus, for WSH a statistically significant upward trend over the period 1996-2000 was detected in both the Overall and the Operational Index. For ALB and DVW, in contrast, no significant differences between years were found.

A similar analysis was carried out on the annual Overall and Operational Index values for SVT(W). No statistically significant differences or trends were found for either index.

6. CONCLUSIONS

The statistical methodology developed by WRc during 1998-99 for assessing water companies' annual compliance data, and described in report DETR/DWI 4757, has recently been applied to the 2000 compliance data for England and Wales.

The main findings from the analysis have been summarised in the Chief Inspector's report. The more detailed tables and graphs from the analysis have been provided here for reference. As in the previous report, they fall into three categories:

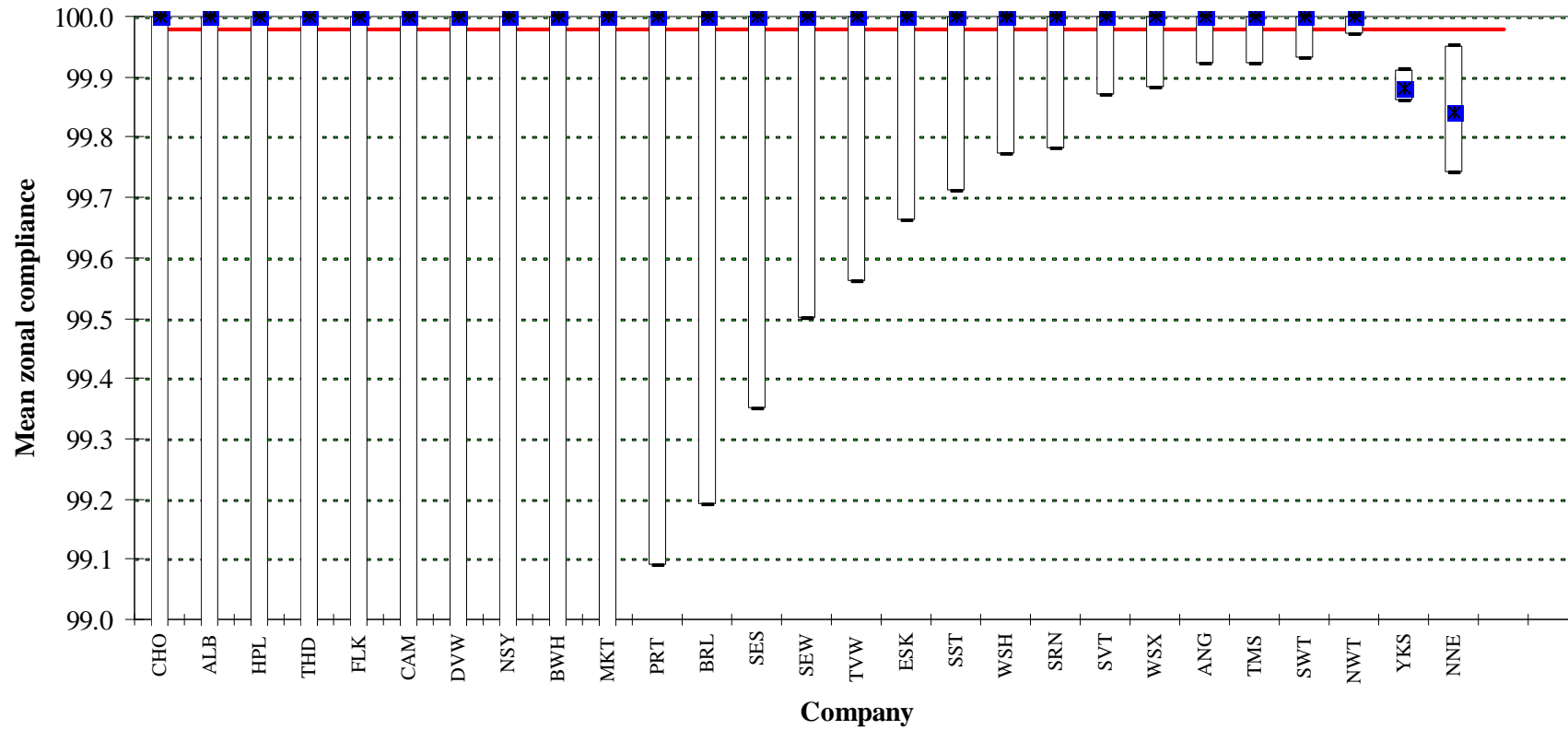
1. Comparisons of company performance against target (defined as overall mean zonal compliance) for each of 17 key parameters;
2. Assessments of company performance using Overall and Operational indexes; and
3. Identification of trends in Overall and Operational indexes over the five-year period 1996-2000.

In addition, the report contains a new section summarising the quality of drinking water supplied to Wales.

**APPENDIX A COMPLIANCE RESULTS FOR
INDIVIDUAL PARAMETERS**

Comparison of 2000 mean zonal compliance for individual companies against target mean

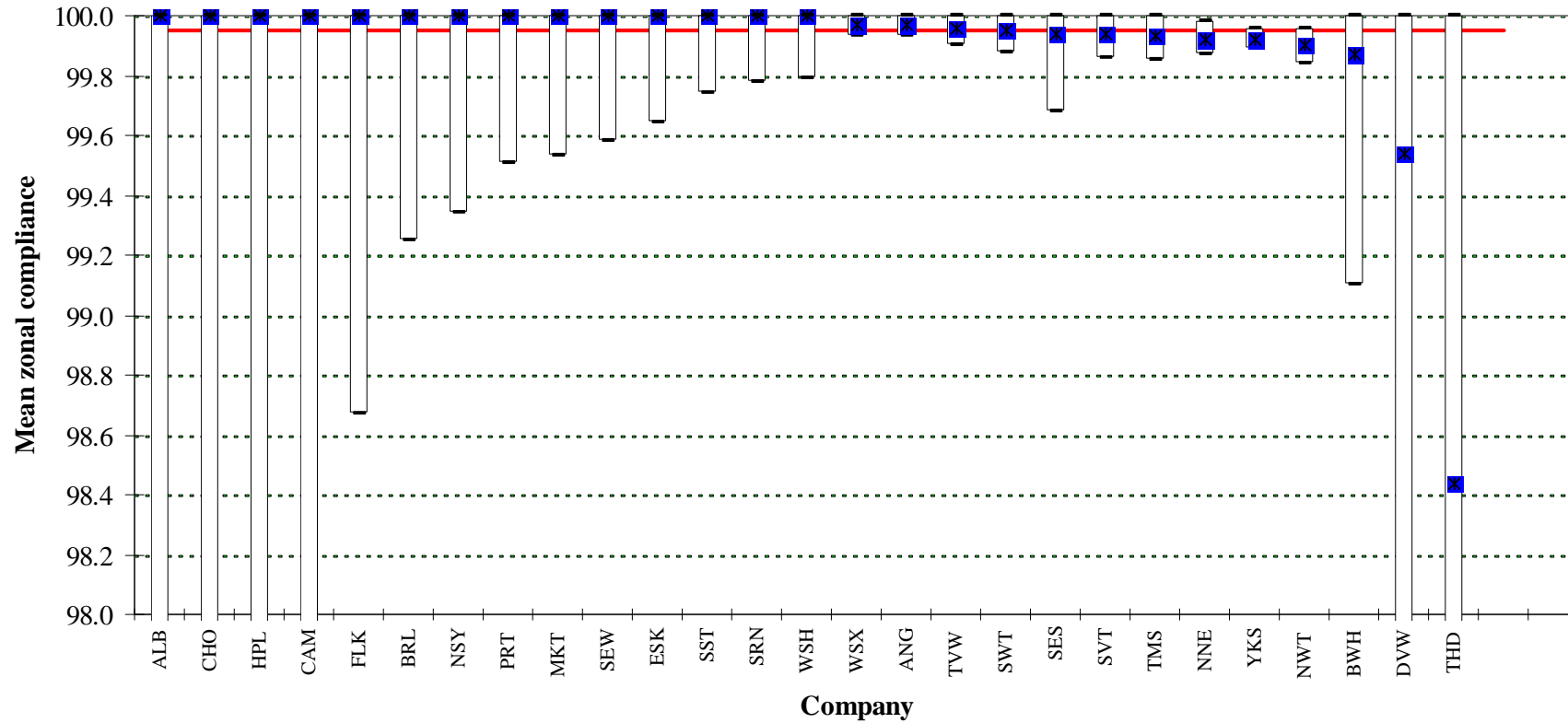
A001: Colour



- 95% conf.int.(lower) x Mean zonal compliance — MZ Target - 95% conf.int.(upper)

Comparison of 2000 mean zonal compliance for individual companies against target mean

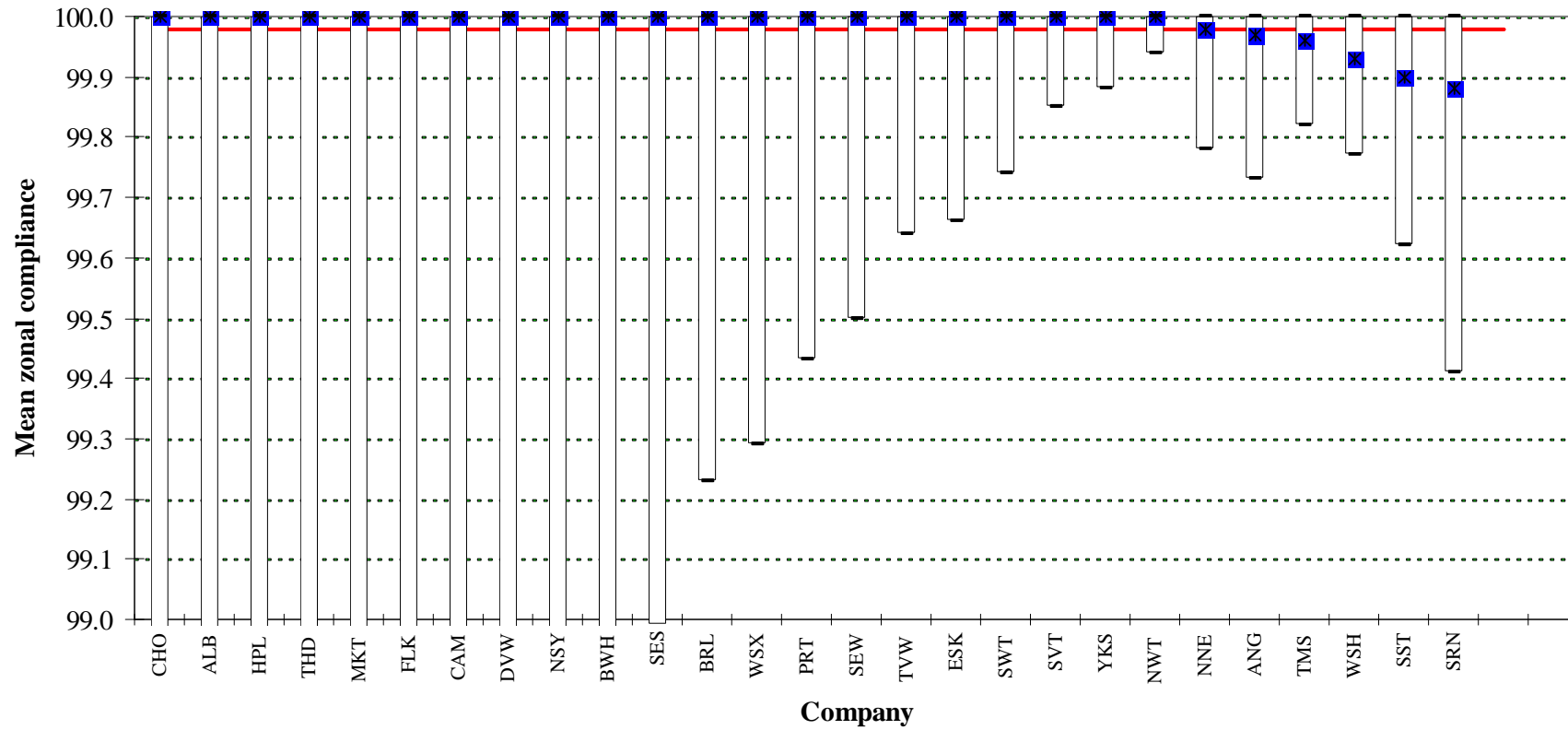
A002: Turbidity



- 95% conf.int.(lower) x Mean zonal compliance — MZ Target - 95% conf.int.(upper)

Comparison of 2000 mean zonal compliance for individual companies against target mean

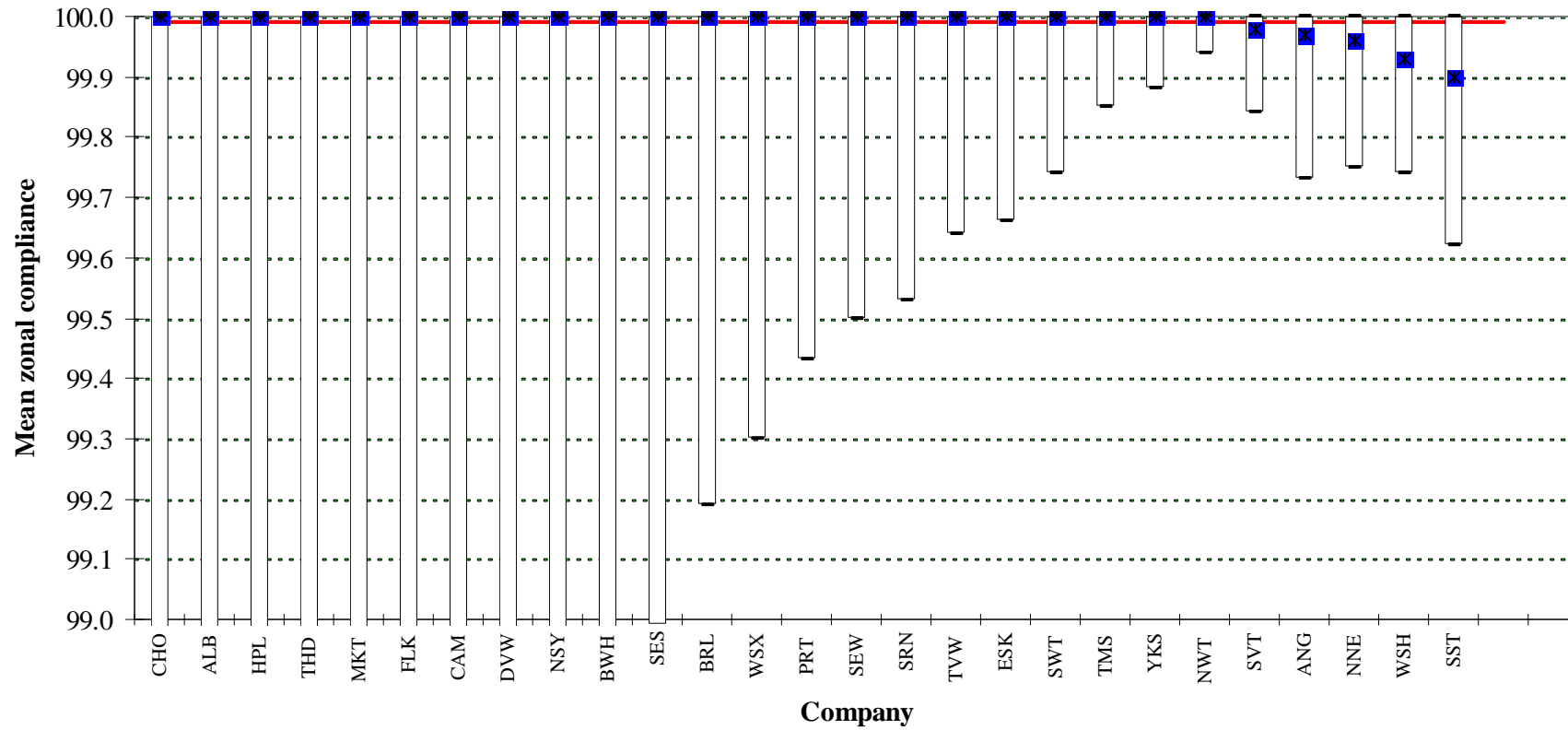
A003: Odour



- 95% conf.int.(lower) ✕ Mean zonal compliance — MZ Target - 95% conf.int.(upper)

Comparison of 2000 mean zonal compliance for individual companies against target mean

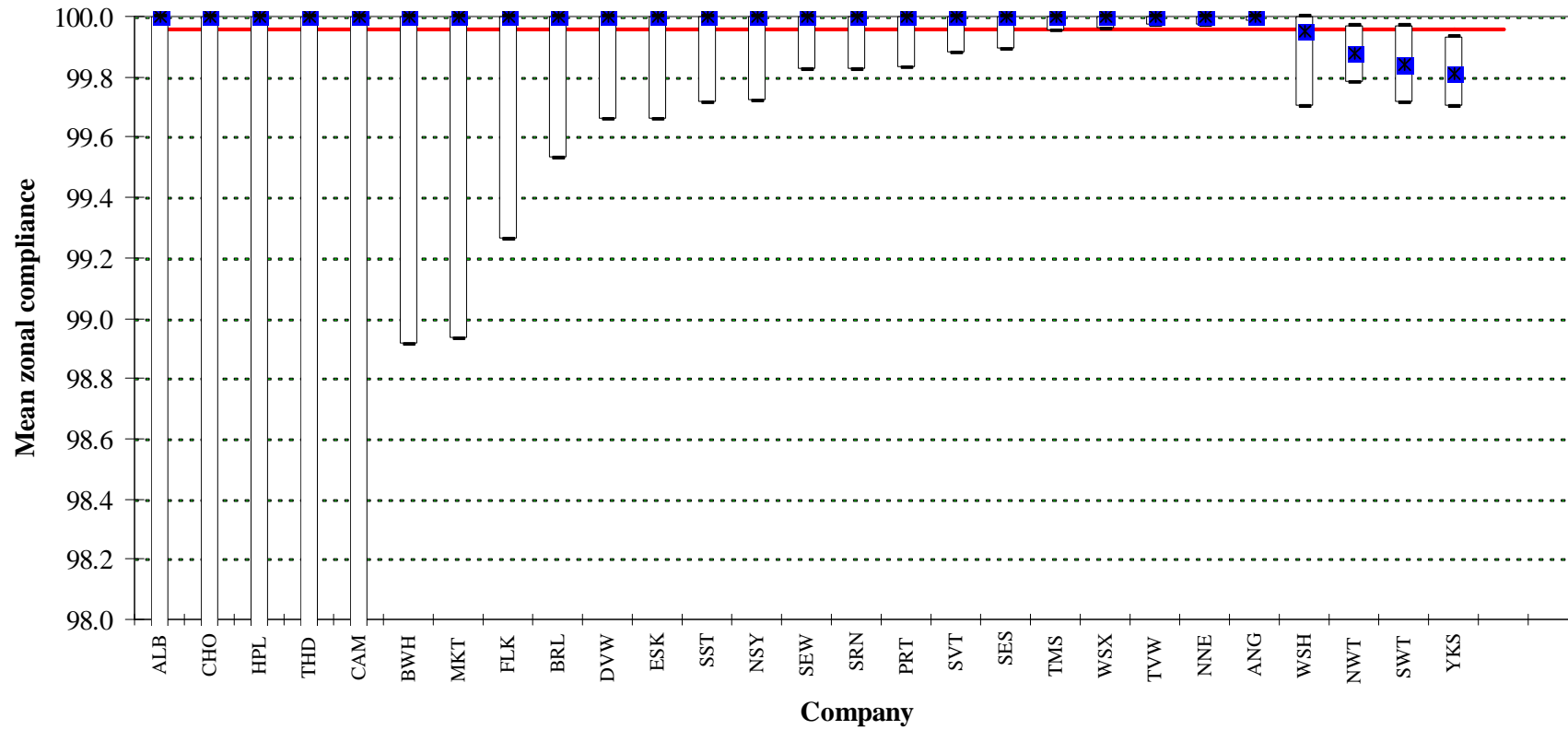
A004: Taste



- 95% conf.int.(lower) x Mean zonal compliance — MZ Target - 95% conf.int.(upper)

Comparison of 2000 mean zonal compliance for individual companies against target mean

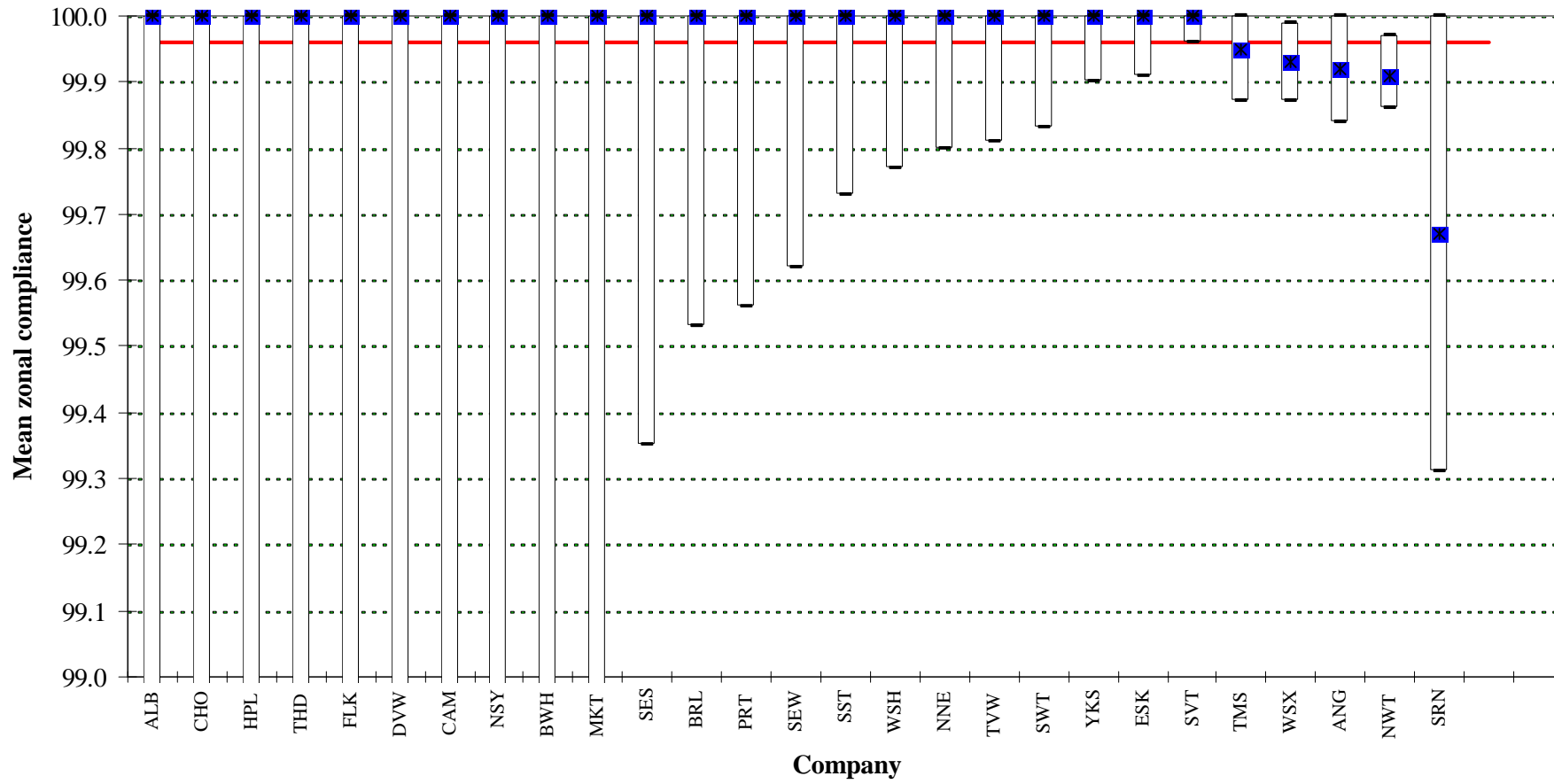
A006: pH



- 95% conf.int.(lower) x Mean zonal compliance — MZ Target - 95% conf.int.(upper)

Comparison of 2000 mean zonal compliance for individual companies against target mean

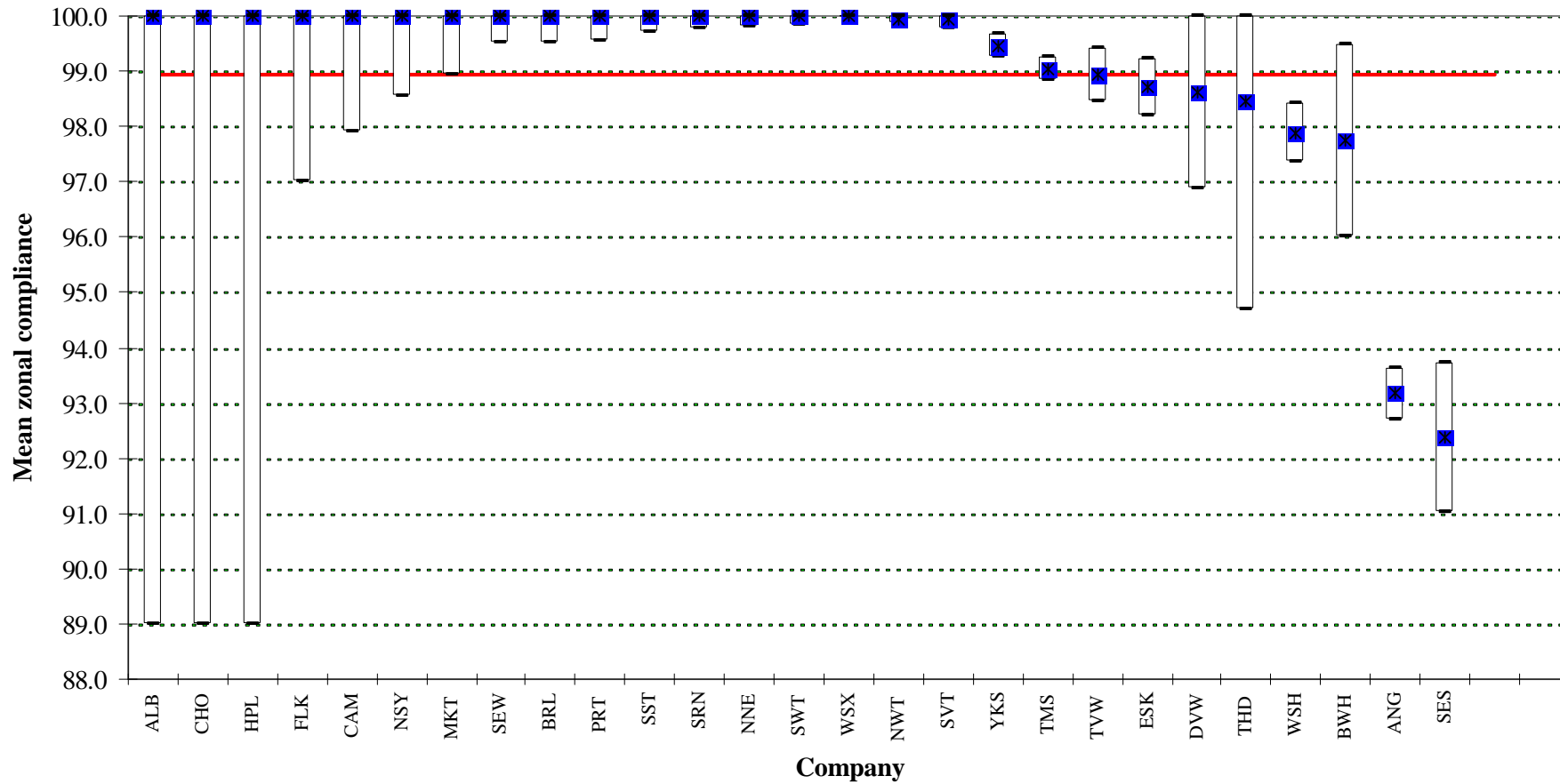
A012: Nitrate



- 95% conf.int.(lower) x Mean zonal compliance — MZ Target - 95% conf.int.(upper)

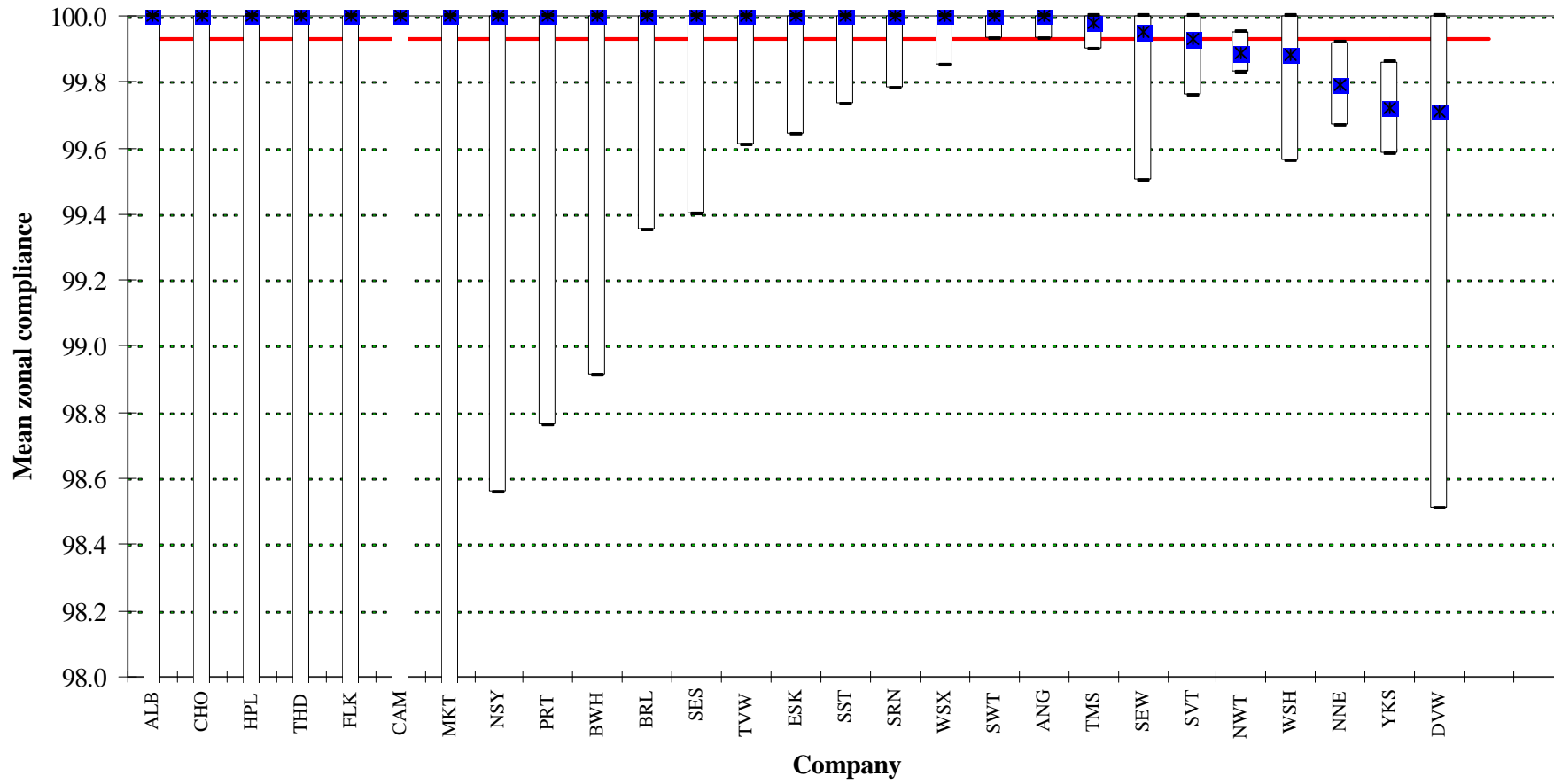
Comparison of 2000 mean zonal compliance for individual companies against target mean

A013: Nitrite



Comparison of 2000 mean zonal compliance for individual companies against target mean

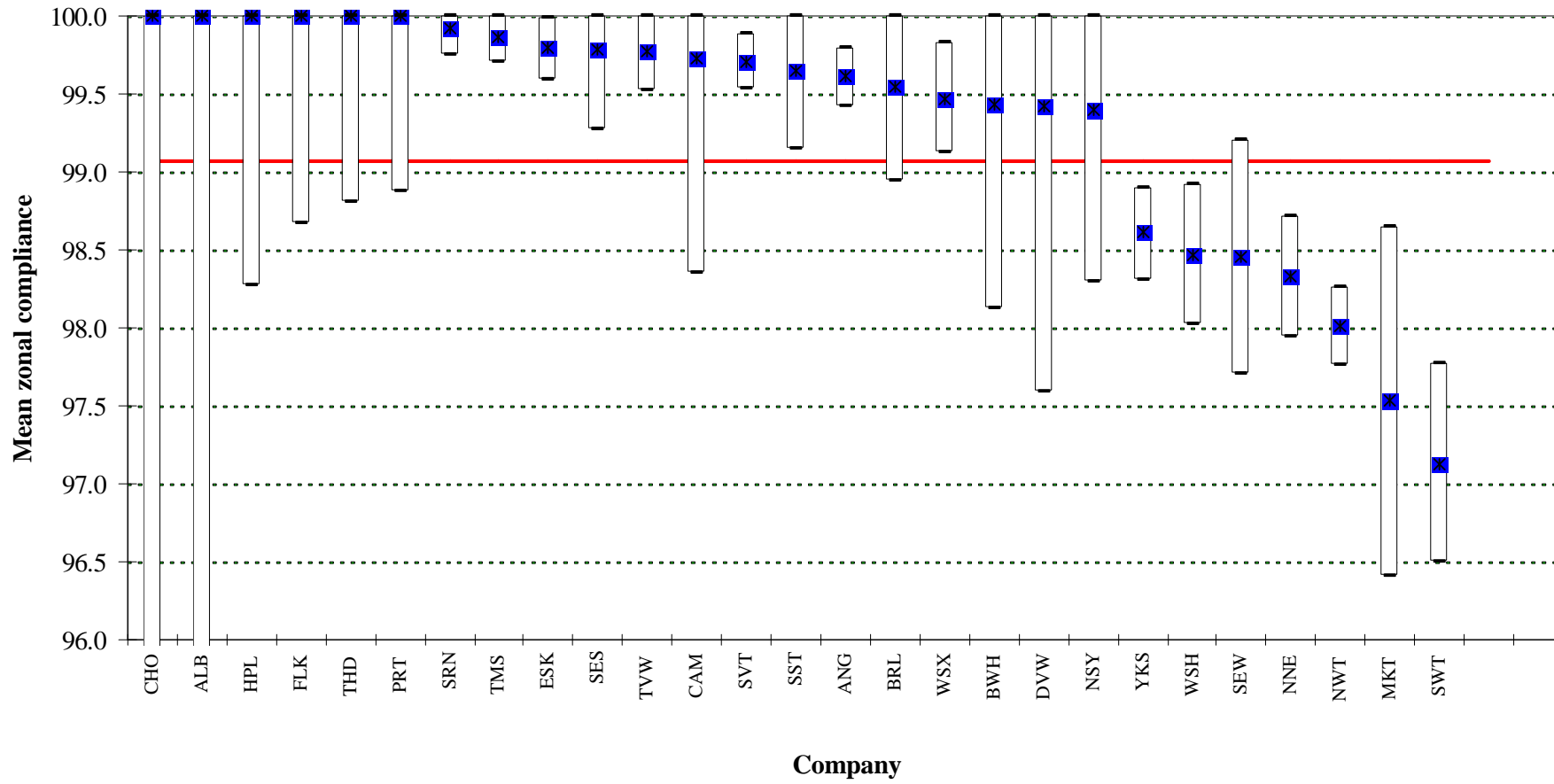
A021: Aluminium



- 95% conf.int.(lower) x Mean zonal compliance — MZ Target - 95% conf.int.(upper)

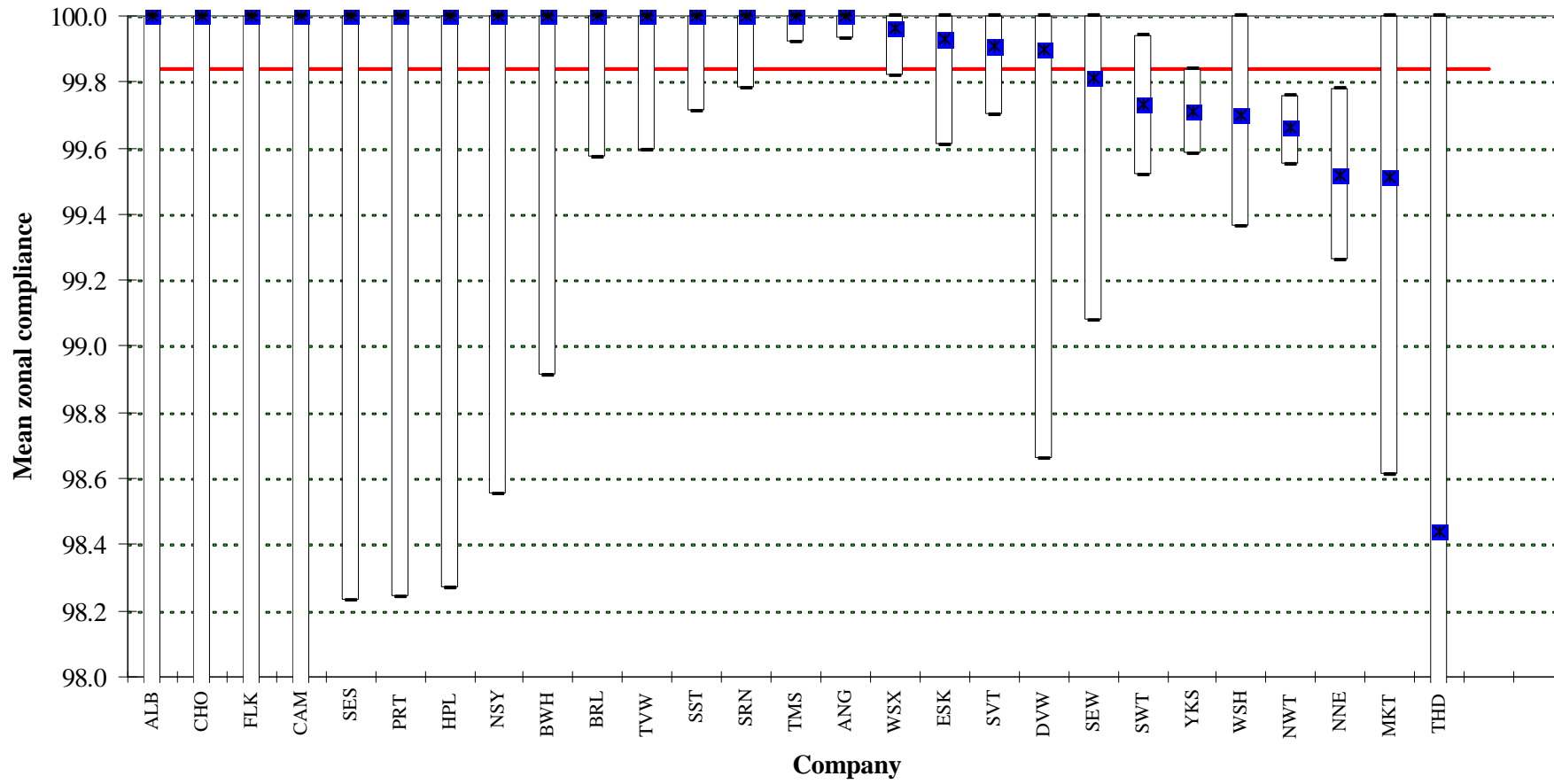
Comparison of 2000 mean zonal compliance for individual companies against target mean

A022: Iron



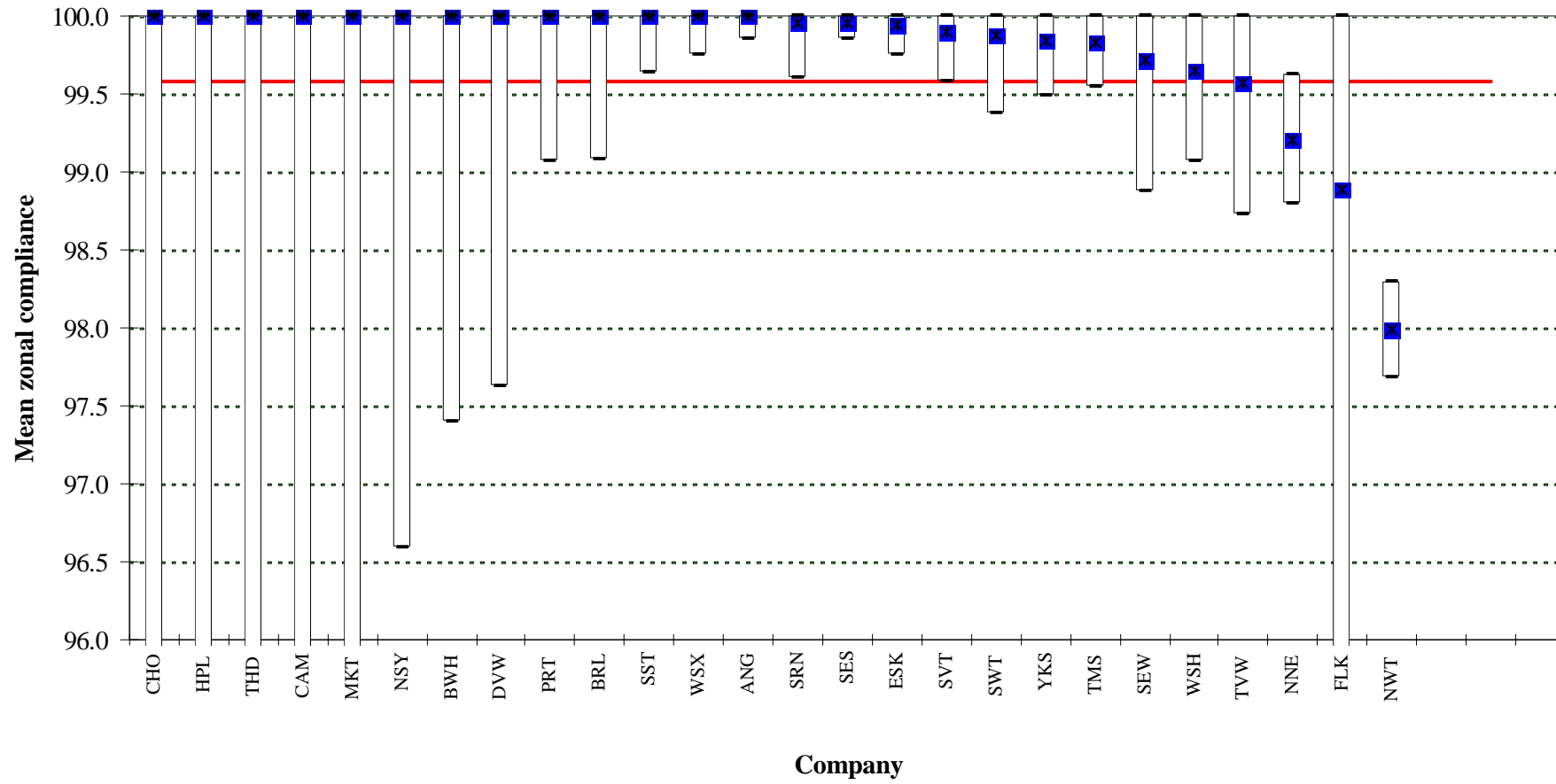
Comparison of 2000 mean zonal compliance for individual companies against target mean

A023: Manganese



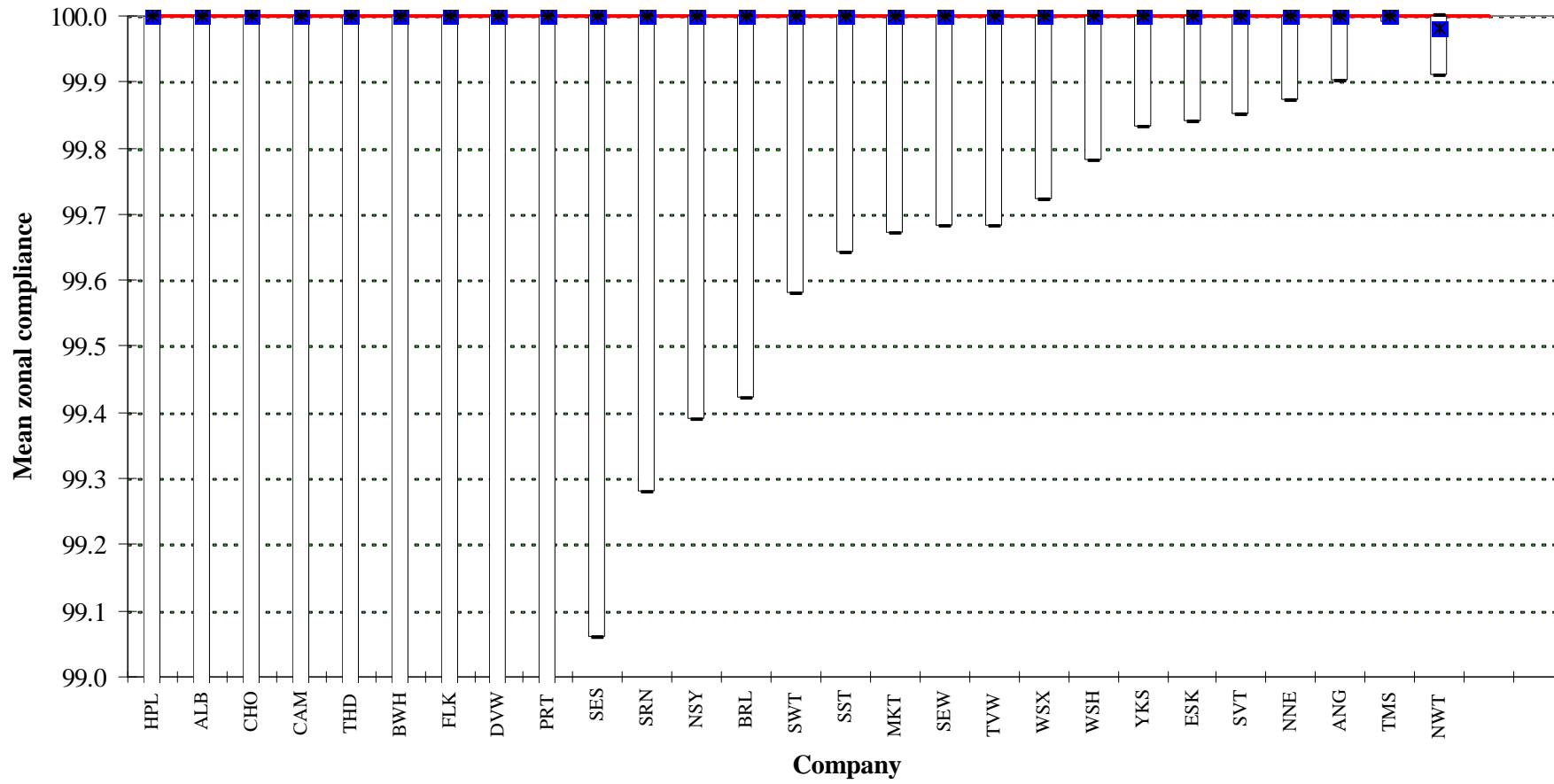
Comparison of 2000 mean zonal compliance for individual companies against target mean

B007: Lead



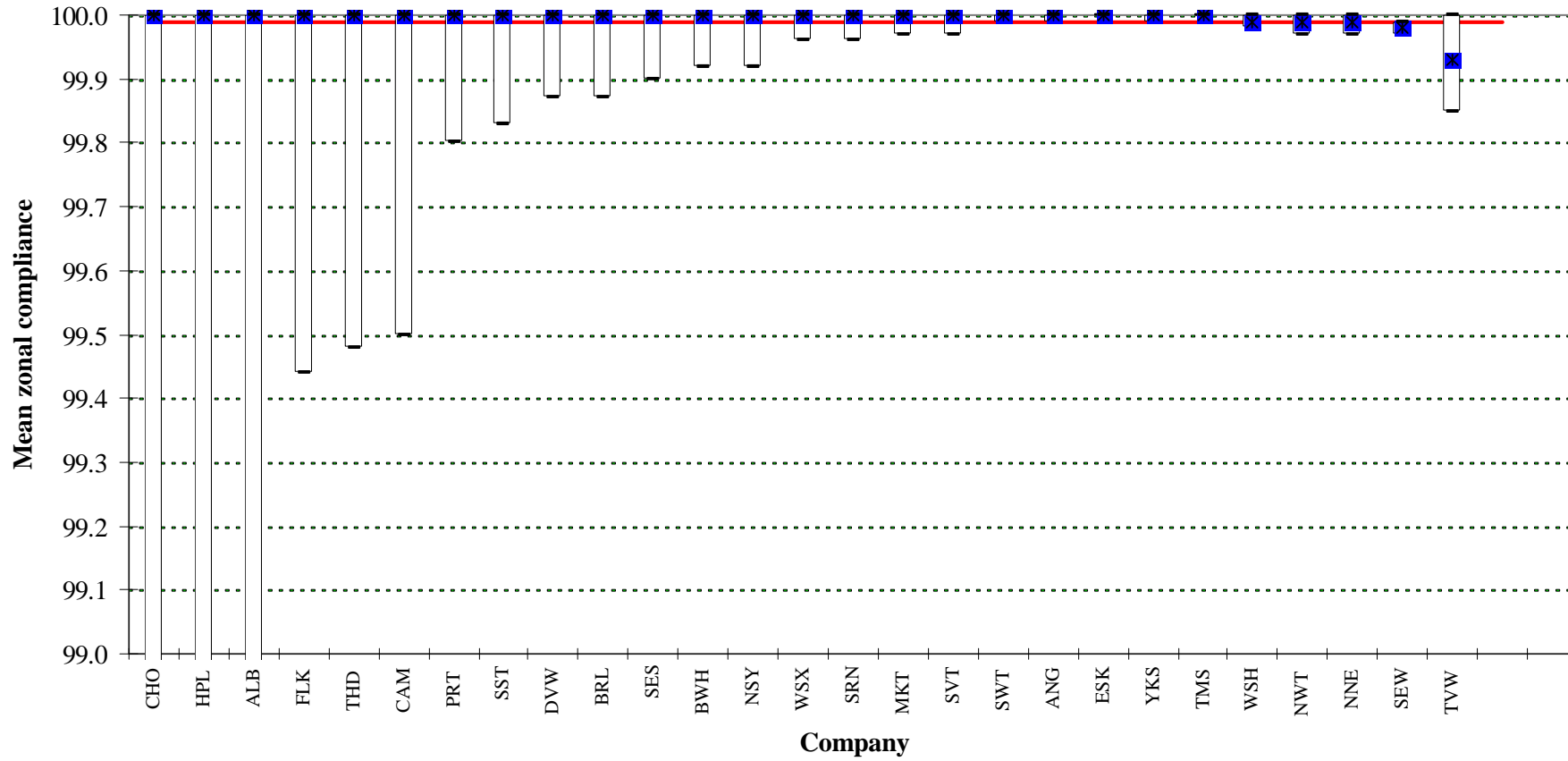
Comparison of 2000 mean zonal compliance for individual companies against target mean

B010: Tot.pests



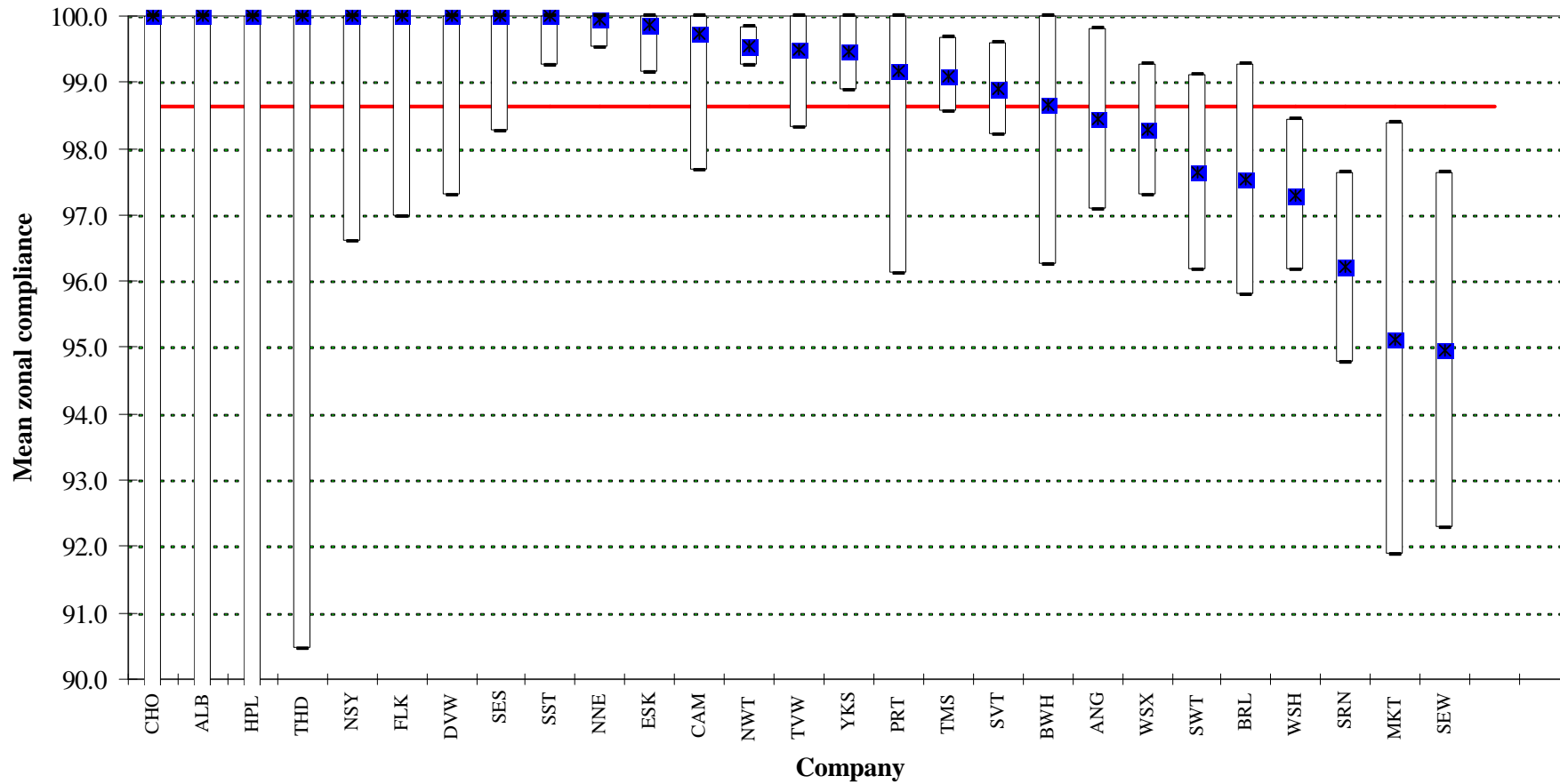
Comparison of 2000 mean zonal compliance for individual companies against target mean

P999: Indiv.pest



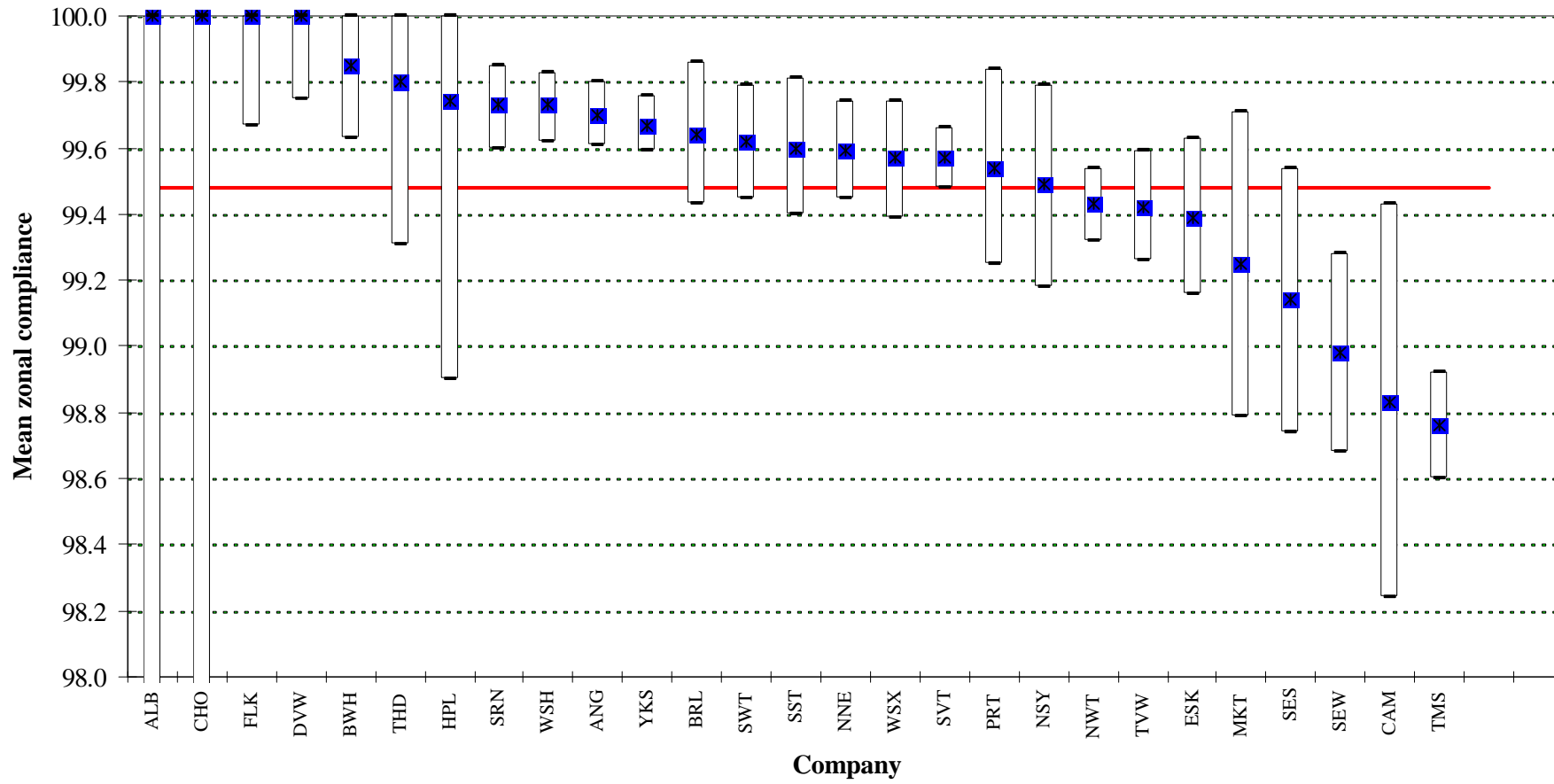
Comparison of 2000 mean zonal compliance for individual companies against target mean

B011: PAH



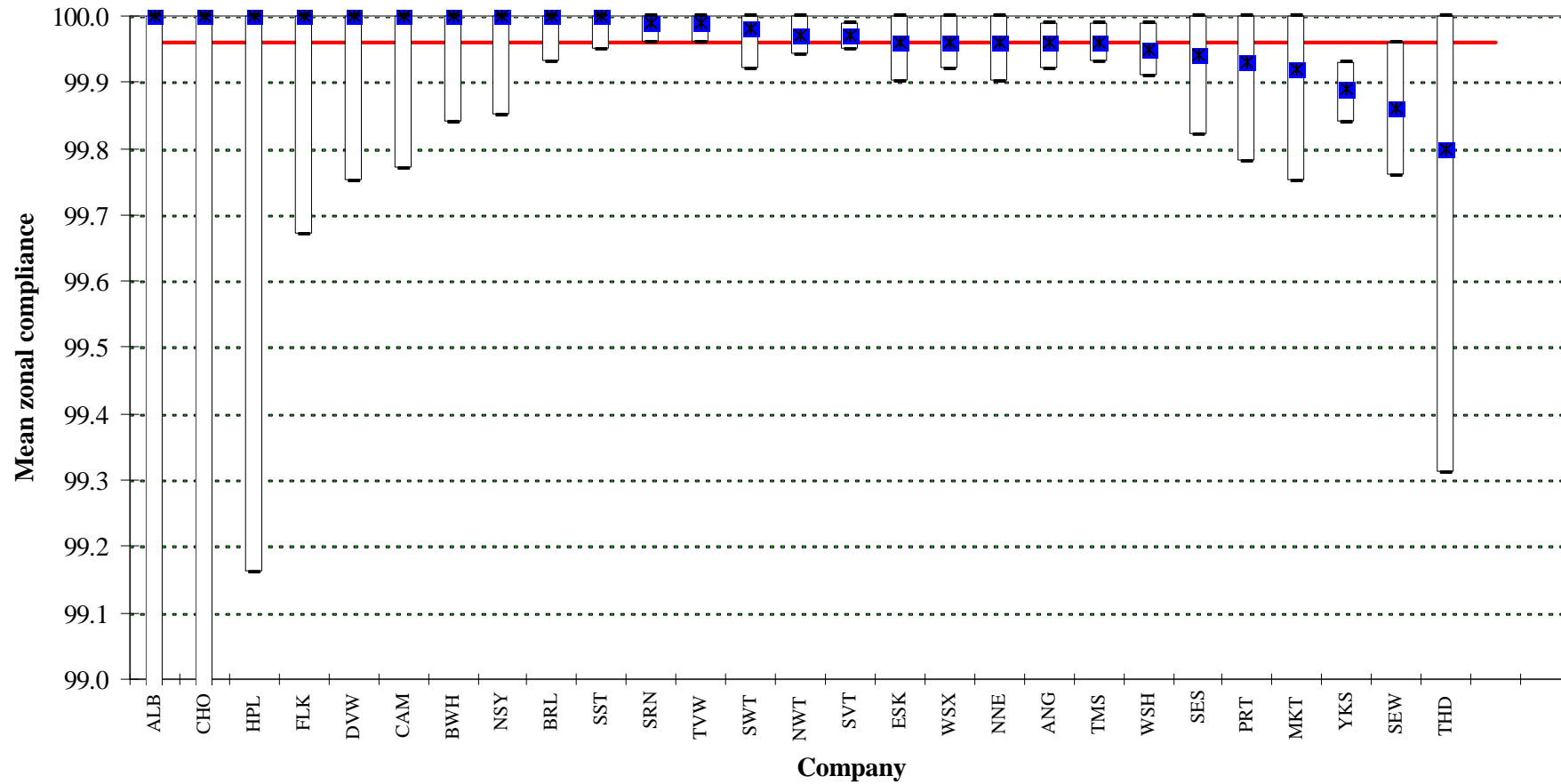
Comparison of 2000 mean zonal compliance for individual companies against target mean

C001: Coliforms



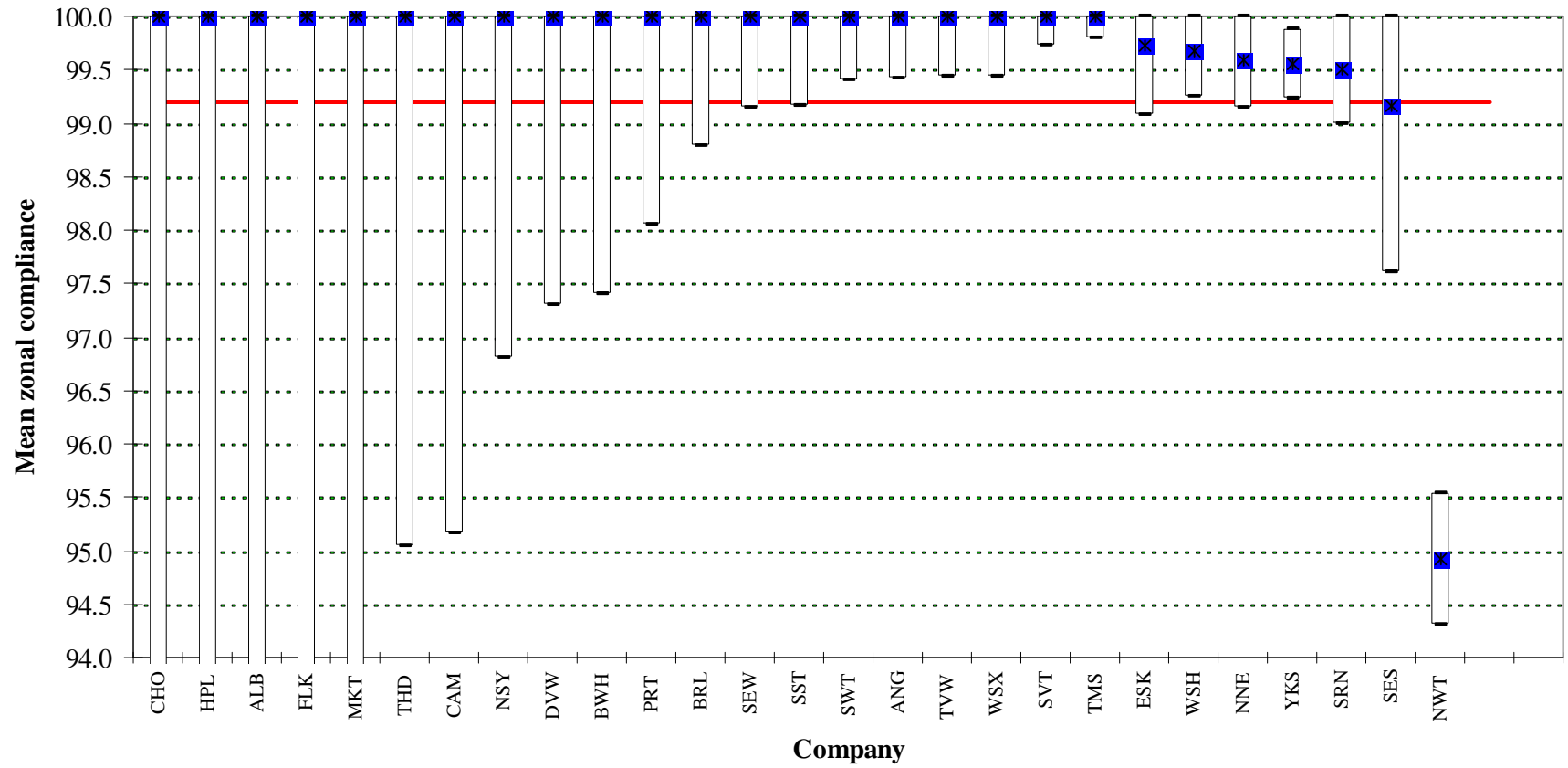
Comparison of 2000 mean zonal compliance for individual companies against target mean

C002: Fcoliforms



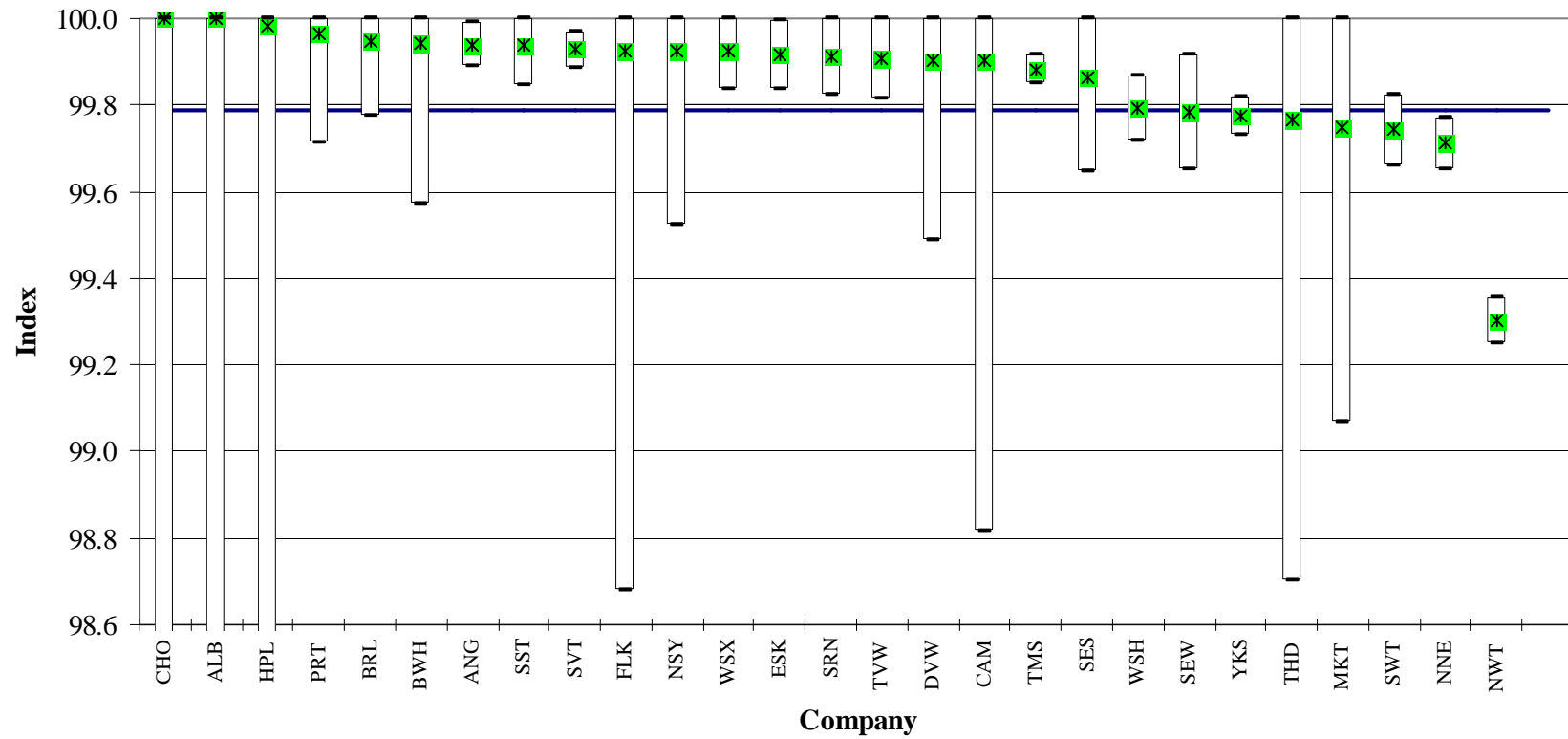
Comparison of 2000 mean zonal compliance for individual companies against target mean

D011: Trihalom.



**APPENDIX B RESULTS FOR THE WATER QUALITY
INDEXES**

Overall Index for 2000 data



Operational Index for 2000 data

