



APPENDIX F

STATISTICAL ASSESSMENT OF CHEMICAL RESULTS

Client/client ref	Brookbanks / HLM
Project ref	GEG-19-623
Site ref	Hook Lane, Pagham
Data description	Natural Ground
Contaminant(s)	As to Phenol
Test scenario	Planning: is true mean lower than critical concentration ($\mu < C_c$)? ▼
Date	21 November 2019
User details	MP

Statistics calculator (version 1)



This spreadsheet has been produced based on the document 'Guidance on Comparing Soil Contamination Data with a Critical Concentration (CIEH/CL:AIRE, 2008)'. Users of this spreadsheet should always refer to this guidance, the User Manual and to relevant guidance on UK legislation and policy, in order to understand how the procedure should be applied in an appropriate context.

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Client/client ref	Brookbanks / HLM
Project ref	GEG-19-623
Site ref	Hook Lane, Pagham
Data description	Natural Ground
Contaminant(s)	Cu, Zn, B & Sb
Test scenario	Planning: is true mean lower than critical concentration ($\mu < C_c$)? ▼
Date	21 November 2019
User details	MP

Statistics calculator (version 1)

Input data

This spreadsheet has been produced based on the document 'Guidance on Comparing Soil Contamination Data with a Critical Concentration (CIEH/CL:AIRE, 2008)'. Users of this spreadsheet should always refer to this guidance, the User Manual and to relevant guidance on UK legislation and policy, in order to understand how the procedure should be applied in an appropriate context.

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Client/client ref: Brookbanks / HLM
Project ref: GEG-19-623
Site ref: Hook Lane, Pagham
Data description: Natural Ground
Contaminant(s): Cu, Zn, B & Sb
Test scenario: Planning
Date: 21 November 2019
User details: MJP

Copper (mg/kg)	Zinc (mg/kg)	Boron (mg/kg)	Antimony (mg/kg)														
2330	3550	291	260														
Notes																	
Sample size, n	9	9	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0
Sample mean, $\bar{x}$	10.88888889	36.44444444	0.5	1	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Standard deviation, s	3.515837185	8.931840671	0	0.291547595													
Number of non-detects	1	0	9	2													
Set non-detect values to:	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit
Outliers?	No	No	No	No													
Distribution	Non-normal	Non-normal	Single value	Non-normal													
Statistical approach	Auto: Unbiased	Auto: Unbiased	Auto: Unbiased	Auto: Unbiased	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto

Test scenario:	Planning: is true mean lower than critical concentration $\mu < C_c$				Evidence level required: 95%		Use Normal distribution to test for outliers										
t statistic, t_0 (or k_0)	-1978.855381	-1180.122559	N/A	-2665.088013													
Upper confidence limit (on true mean concentration, μ)	15.99728189	49.42210807	0.5	1.423608834													
Evidence level	100%	100%	100%	100%													
Base decision on:	Distance limit																
Result	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$													
Select dataset	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y	Q Y

Back to data

Go to outlier test

Go to normality test

Show individual summary

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Appendix B– Drainage Strategy and Supporting Calculations

Brookbanks Consulting		Page 4
6150 Knights Court Solihull Parkway Birmingham B37 7WY	Hook Lane, Pagham SW Strategy Basin 2	
Date 26/11/2020 File Pond 2.SRCX	Designed by Brookbanks Checked by N.J.Onions	
Micro Drainage	Source Control 2020.1	

Model Details

Storage is Online Cover Level (m) 6.400

Tank or Pond Structure

Invert Level (m) 5.100

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	965.0	1.300	1514.0

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0094-3900-1000-3900
Design Head (m)	1.000
Design Flow (l/s)	3.9
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	94
Invert Level (m)	5.100
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	3.9	Kick-Flo®	0.632	3.2
Flush-Flo™	0.297	3.9	Mean Flow over Head Range	-	3.4

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.0	0.800	3.5	2.000	5.4	4.000	7.4	7.000	9.7
0.200	3.8	1.000	3.9	2.200	5.6	4.500	7.9	7.500	10.0
0.300	3.9	1.200	4.2	2.400	5.9	5.000	8.3	8.000	10.4
0.400	3.8	1.400	4.6	2.600	6.1	5.500	8.7	8.500	10.7
0.500	3.7	1.600	4.8	3.000	6.5	6.000	9.0	9.000	10.9
0.600	3.4	1.800	5.1	3.500	7.0	6.500	9.4	9.500	11.2



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