CATCHMENT DATA DATA CORRECTION NOTES

NEMS DISSOLVED OXYGEN

"Version Number"

"Year"



These corrections notes are for reference during the data correction process. If you have not corrected the following source previously or are still unsure of how it all works, it would be a wise idea to get the analyst to spend so going through the process with you.

Complete the CDTools Register

Open the CDTools register. This can be found on <u>\\ares\HydrologySoftware\Catchment Data Tools\Catchment Data</u> <u>Tools.mdb</u> enter the groundwater site that you are working on. Hit the Data Processing tab

🏩 🔒	₩7 - C ²¹ - =			Startup - Catchment Data 1	ools	
File	Home Create External	Data Database Tools				× 🤹 = 🕫 😣
Views	Cut La Copy Paste ✓ Format Painter Clipboard ™	 Ascending ∛ Select Ascending ∛ Adva Ava Remove Sort ∛ Togg Sort & Filter 	tion * nced * le Filter Refresh All * X Delete * ∰ More * Records	time to the second sec	- → □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	
»	Catchment D	ata: Electron	ic Tools	EXI	Γ	
	Flow Meter Inspections	Non Conformance Reports	Batch Release Information			
	Data Requests	QMS Action Points / Development Projects	Code Reference Lib			
	Site Audit Tracking	Management	Software Register			=
	Horizons Site Index	2011-2012 Budget	Biennial Station Survey			
Navigation Pane	Water Level Sites		Data Processin	g Archive Audit Site Information ORY Gauge	ng	
	Rainfall Sites		Data Processin	g Archive Audit		
	Groundwater Sites		v Data Processin	g		
	Water Quality Sites	anawatu at Weber Road Data Source 🧕	Data Processin	g Archive Audit		
	Flow Meters		urbidity [Historic] /ater Temperature O concentration conductivity Low Range [T	g Site Information		
Form V	Record: II ← 1 of 1 → II → 기 Iew	K No Filter Search S	oil Moisture oil Temperature urbidity (EPA)			Num Lock 🔽 🗃 📾 🛍 🔛 💥

File the field in the register that pops up once you have selected the site

🔹 🖟 🕫 🗠 🐨 🚽 🗢 Water Quality Data Processing - Catchment Data Tools	
File Home Create External Data Database Tools	^ (? = = 3
Image: Second point of the s	
Manawatu at Teachers College DO concentration	≜ Internet
Image: Date DN 30/09/2011 Date DFF 14/05/2012 Time DN 11:45 Time OFF 6.15 Processing Information Maxing Record Review Radrigs Activing	=
Policy Date 13/04/2012 Staff Member Andy Cawfrom w Total Staff House: 10 Processed Date 16/04/2012 Processing Comment WTW Saturation Data Quality Codes V	
Date DN Date OFF Time DN Time OFF Processing Information Missing Record Review Radings	
Staff Member Total Staff Hours: 0 Piccessed Date: Piccessing Comment Hiltipo Deck Data: Image: Comment	
Record: M < [of] > >> 1/4 Unfiltered Search Form View	Num Lock 🖂 🖩 🗃 🛍 💥

Fill in the following fields:

- 1. The **batch number**. This should be pretty obvious, in increasing order
- 2. File the DateON Time ON and DateOFF TIMEOFF fields. The Date/TimeON fields should be the dates/times of the last batch Date/TimeOFF. The current batch END Date/Times are the last inspection completed for the period.
- 3. Pickup date is the date processing began on the batch
- 4. Staff Member: Obviously this is you
- 5. The other fields do not require completion till the processing is finished

Create the working directory

Groundwater processing, like all other data sources, contains its own parent directory for processing/correcting the data. This directory is located:

\\ares\Environmental Data Validation\Dissolved Oxygen\

This directory, and its sub-folders, contains all the currently corrected groundwater water sites, and their batch numbers.

Within the parent directory is a folder, aptly named, Docs. Within this folder is the following processing documents:

- 1. Audit.mdb (this is the audit trail for the hilltop software)
- 2. File Details Template.docx, and (this is a rough summary template)
- 3. Inspection Register.xlsx (field inspection register, logger data and analysis sheet)

Create a new folder within the site folder renaming the folder to the correct batch number i.e.:

\\ares\Environmental Data Validation\Dissolved Oxygen\Manawatu at Teachers Collgege\104\

Copy the documents from the Docs folder into the above working directory. Rename the copied doc files so that they contain the batch numbers at the beginning i.e.



The Audit.mdb needs to be same as the Hilltop Manager File name; otherwise they cannot be linked together

Create the Hilltop Manager Working file

Open Manager

Click File > New

Navigate to your working directory i.e.

\\ares\Environmental Data Validation\Dissolved Oxygen\Manawatu at Teachers Collgege\104\

The File Name should the Batch number i.e. 100. Double check that the batch number.mdb is also in there. No audit trail = instant fail



Collecting the Evidence

Photocopy all the field inspection chits for the period. The first inspection is the last inspection previously processed. Double check this with CDTools. The last inspection filed in the draws is the end inspection for processing i.e. the last inspection. NOTE that end inspections need to end on an actual external reference reading/check.

Calibrations need to be extracted from Hydsis

Organising the data

In Hilltop > Open

This brings up the Open dialog box

LOOK IN: I	104	- 🗕 🖆 📰 -	
Name	*	Date modified	Ту
n 104		2/07/2012 4:48 p.m.	H
•			•
File name:	\\ares\Original\Hilltop Telemetry\	Open 4	4
		▼ Cancel	
Files of type:	Data Files		

Select from the Common Name > Original Data. This opens the original data files from Telemetry. Hit Open. This bring up the following dialog box

📻 Open	×
Look in: 🕌 Hilltop Telemetry	- ← 🗈 💣 🎟 -
■ fot ■ FRR ■ fxx ■ gra ■ gun ■ hag	 hal ham HAY hch hch_Parked 1111205 him
 ✓ File name: him 	Open
Files of type: Data Files	▼ Cancel
Common Name Driginal Data	•

Select the three letter code from the drop down list that you are working on. In this particular case, MDC Himatangi Shallow is HIM > Open



Copy the site data to the working Hilltop directory i.e.

Right click > Copy.

This brings up the *Copy Data Source* dialog box. Make sure that the *Series Data* check box is ticked. Set the Time Range to the period that you are processing. You should already know what this is by now!

In the *Destination*, rename the site to an underscore Raw name extension i.e. MDC Himatangi Shallow_Raw. This allows to the reviewer to know that this data is the raw data

Under the Filename, make sure that this is pointing at the working path. For this example, the working path is:

\\ares\Environmental Data Validation\Groundwater\MDC Himatongi\Shallow\104\104.hts

Once this is completed, hit the Go button The data should now be in your working file

Copy Data Source	
Source Site MDC Himstangi Shalow	6.
	Causal
Time Range	Lancel
From 25-Oct-2007 09:30:00 To 10-May-2012 12:15:00 Start of Data All Data Finish of Data From Graph	Help
Only Copy New Data Archive File sets the time range	
Archive File	
Destination	
Site MDC Himatangi Shallow	
Filename P:\Groundwater\Butlers\105\105.hts	
Open file when copy completes S	
Quality Merge Rule Gap Rules Change Quality Batch by batch Corp gaps New Quality Merge Elements Gap at Statt	

Populate the File Details Template with the basic File Information

Open the # File Details Template. Most of this is pretty self-explanatory

The Site: <Site> should be the Hilltop Site Name i.e. MDC Himatangi Shallow

The Parameter: < Parameter> is Groundwater, or Water Level and/or Aquifer for some sites



Initial File Details information comes from Manager. In Manager right click > File Info > Details. Paste this information into the Initial File Details

ra Manager - X:\Groundwater\MDC Himatangi\Shallow\104\104.hts								
File Edit View Data Configure Project Scar	n Window Help							
$\blacksquare \blacksquare $								
X:\Groundwater\MDC Himatangi\Shallow\104\1	14.hts							
File Info	Standard Series data in X:\Groundwater\MDC Himatangi\Shallow\104\104.hts							
MDC Himatangi Shallow_Raw	MDC Himatangi Shallow_Raw							
Groundwater	GroundWater 25-Oct-2007 09:30:00 to 10-May-2012 12:15:00 1238.5KB							

Gaps in the Initial File can be listed from Manager also. Right click on the data source ie Groundwater > Gap.

This brings up the Gaps dialog box.

(Gaps in MDC Himatangi Shallow_Raw	[GroundWater]				×
ſ	Site	Data Source	From	То	Duration	
						Select All
						Deselect All
						Remove Gaps
					\longrightarrow	View Gaps
						Lancel
			<u> </u>			11-1-
	Select gaps less than or equal to					Help
	From To		Select			
5						

List all the gaps identified in the data set by hitting the View Gaps button and paste these into the Gaps in Initial File. In most cases there should be no gaps in the raw file, but there can be... Select all gaps < 15 minutes in duration using the Select Gaps Less than or Equal to box

Hit the Select all box

Hit the remove gaps. Paste this information into the Gaps Deleted information in the File Details Template

Site: <MDC Himatangi Shallow> Parameter: <Groundwater>

Initial File Details

Standard Series data in X:\Groundwater\MDC Himatangi\Shallow\104\104.hts MDC Himatangi Shallow_Raw, GeoundWater, 25-Oct-2007 09:30:00 to 10-May-2012 12;15;00,1238;5;KB

Gaps in Initial File

Gaps in X:\Groundwater\MDC Himatangi\Shallow\104\104.hts 0 gaps

Gaps Deleted

0 gaps

Loading check data

Before you even start loading check data, you will need to construct the Datum Continuity Tables in the Inspection Register.xlsx. Open this file i.e. <u>\\ares \Environmental Data Validation \Groundwater \MDC Himatangi \Shallow \104 \104</u> <u>Inspection Rewgister.xlsx</u>

Under the Datum Table Tab use the surveys to construct the Datum Continuity Table. Once this is finished,

Check data is without doubt the most time consuming and frustrating part of the data processing! You have been warned!

The purpose if check data is technical; to track site performance, assist with maintenance issues, and to guide the processing of recording problems out of the data

Open Manager

Copy the Site_Raw file to another file within the object tree called Working. This is where all the check data and minor editing to the data takes place

Right click MDC Himatangi Shallow_Raw > Copy. This brings up the Copy Data Source dialog box

Copy Data Source	
Site MDC Himatangi Shallow_Raw Data Source [GroundWater Series Data Check Data All Rating Sets Dupth Data Check Data Depth Detailing For Secience	Go
	Cancel
From 25-Oct-2007 09:30:00 To 10-May-2012 12:15:00 Start of Data All Data Finish of Data From Graph	Help
Only CopyNew Data Archive File sets the time range Archive File	
Destination Site Working Data Source GroundWater ▼	
Filer/ame Coroundwater/MDC Himskypol/S hollow/104/104 hts Open file when copy completes S Quality Merge Rule Gap Rules	\langle
Change Quality C Batch by batch C Dory gaps Don't copy gaps Gap at Start	
Under Data Source, make sure that the Series Data check box is checked	
Under Time Range > All Data	
Under Destination > Site > "Working"	
Data Source should remain the same	

File Name > hit the S box below the drop down menu. This sets the copy destination the same as the source. Useful tool - use it often!

Hit > Go

In the working file, hit the clipboard (View Check Data) (). From the top menu > Data > Add. This opens the Add Data Box.

Site	Working		OK
ataSource	GroundWater	•	Cancel
			Help
Series F	ating Virtual Measurement Com	ment	
Time Se	ies Options		
	Automatic Date and Time	Also add Quality Markers	
Graph	Comment	Ŧ	
	Date and time		
Hydrom	etric Gauging Options		
	Show Horizontal Angle	Airline Correction	
	E a		

Not much to be done here. Hit > OK. This opens the check data entry form

Manager - X:\Groundwater\MDC Himatangi\Shall	ow\104\104.hts				-
File Edit View Data Configure Project Sca	n Window Help				
Fi ABB ABB		<mark> </mark> 			
X:\Groundwater\MDC Himatangi\Shallow\104\1	04.hts				
🛅 File Info					
	Date	Time	External S.G.	Recorder Time	Internal S.G

Use the log information on the log sheets to populate the respective columns. But before you do this, you need to double check everything on the log sheets:

- Check the inspection date with the Julian Date. Do they agree? If not, find out why!?
- Do the inspection times represent the actual time. Check the NZDT and NZST
- Cross reference the EPB, ExSG information with the surveys. Are they correct?
- Check for logger downloads, purges/pumps, and any relevant inspection comments.

Once the log sheets have been formally checked for errors, enter the information into the check data. All primary references are entered into the ExSG field (yes, even if it is an EPB). The EPB is for the backup check. If no backup check is in place, populate the column with -1 (old Tidedar legacy). Add any relevant comments from the chit into comments column. Sometimes you may have to decipher comments so that they make sense, not only to you, but someone a 100 years' from now (it's highly unlikely that they will want to go hunting for paper chits!). Try to summarise long comments, the comments field is limited to 255 characters (old 16 bit technology)

The log sheet loader tool can also be employed here also. This can be found on:

\\pnt-cd1\HydrologySoftware\Catchment Data Tools\LogSheets.accdb

Open this file up. This brings up the following screen/form

Take the time to check ExSG and EPB zeros and confirm RL's of other reference points used for external reference check readings. Use all the readings provided, calculating them out if necessary. Field technicians usually do the utmost to provide something in the way as a reference if none exist or are damaged; all such readings should be in the check data. Maintain a datum consistency table for each site and update it after each survey run so that shifts to references are noted, confirm adopted levels are reliable and correct, and quickly calculate consistent reference data. All this should be referenced back to the ExSG/EPB readings

A Pice	Log Densi Catale (Access 2007-2020) - Microsoft Access Here Could Date Debut Could Date Dold → & Cot → & Co	0 (2)
Ŧ	Logsheet Entry IOOI:	Suggestions Versions and Modification Log
Navigation Pane	Extract Water Level Inspections Extract Rainfall Inspections Extract Water Temperature Inger Wit Hilling: DeckData Wit Hilling: DeckData Wit Hilling: DeckData Wit Inspection Privat Chart Rain Richard on Privat Chart Excel Extraction Wit Dev Plot	tions
Record	nd # + 1991] - M > [K th Jimm]Search-	Archive Gauging Status (O Turb CheckData Telemetry

Under name > use the drop down menu and select the site you're working on i.e. MDC Himatangi Shallow.

Hit the WL Hilltop Check Data button, this brings up the following screen/table-

A		ר יין =		ALC: NO	1	.ogSheets : Database	(Access 2007 - 2	2010) - N	licrosoft Acce	ess	l l	- • ×
	ile	Home Crea	ate External D	ata Database Tools								^ ?
v	ew •	Paste	t Painter	2↓ Ascending V So X↓ Descending ▲ A A A A A	election * dvanced * oggle Filter	Refresh All - X Delete	∑ Totals	Find	e ^b _{ac} Replace ⇒ Go To ÷ k Select ÷	Calibri \cdot 11 \cdot \vdots \vdots B I \underline{U} \underline{A} \bullet \bullet \bullet \bullet	│╪╪│┉╶ ═│⊞╴│═	•
Vi	ews	Clipboard	Gi -	Sort & Filter		Reco	ds		Find	Text Formatting		5
»	-8	Startup 🔂 Ex	tract_WL_Bysite_C	CheckData								
		Inspection	WL_Time 👻	WL_Check_ESG 🗢	RPT_	DateTime 🗢	WL_Che	ck_EPB	~	Comment 🗢		
		23/03/2012	11:00:00 a.m.	4459	23/03/2	012 11:00:00 a.m.			-1 +/-3	3, Replaced Steel cable between 11:00-		
2		23/03/2012	11:45:00 a.m.	4454	23/03/2	012 11:45:00 a.m.			-1 +/-3	3, New Offset 1793mm		
a		1/05/2012	11:30:00 a.m.	4195	1/05/2	012 11:30:00 a.m.			4195 +/-3	3, ISD Changed		
	*											
tet												
ivel.												
1												
					-							
	Red	cord: I	→ ▶ ▶ №	No Filter Search				_	_			
Da	tashee	t View									Num Lock	🗉 🖽 🛍 SQL 🔛

From here, you can simply *Select All > Copy >, and Paste* these data into Manager Check Data table. One caveat to this is that all inspections in the Log Sheet Loader still need double checking for errors. Most inspections, given the share volume made since 2004, and the smart idea of installing pump rigs for water quality, are entered on-mass.

Populating the Register

Open the Inspection Register on <u>\\ares\Environmental Data Validation\Groundwater\MDC Himatangi\Shallow\104\104</u> <u>Inspection Register.xlsx</u>

In the Dump Tab, use the Get Hilltop Check Data Script. If you do not have this, ask a data processor to add this to your PERSONAL workbook.

Hit the Get Hilltop Check Data Icon. This will open up the following dialog box:

Jrganize 🔻 New folder			i 🕶 🕶 🚺 (
	^ Name	Date modified	Type Size
🖈 Favorites	I 104	3/07/2012 11:08 a	HTS File
Desktop			
词 Libraries			
Andy Cawthorn			
💌 Computer	=		
🚢 Local Disk (C:)			
Ba Hydro Application Volume (D:)			
BVD RW Drive (E:)			
👝 Lexar (F:)			
🖵 \\gisdata\gis\ (G:)			
🖵 Hydrology (H:)			
🖵 Cawthorn (\\userhome\users\$) (M:)			
🖵 Andys Workspace (W:)			
🖵 \\ares\Environmental Data Valida (X:)			
🕎 Archives (Y:)			

Locate your working Manager file; this should be in the working directory i.e.

\\ares\Environmental Data Validation\Groundwater\MDC Himatangi\Shallow\104\104.hts

Hit the open button -

This opens the following dialog box:

Microsoft Excel	×
Open X:\Groundwater\MDC Himata	angi\Shallow\104\104.hts
	ОК

Obviously the only option you have here is OK

This then opens the following dialog box:



This will populate the Dump Tab with the check data and the corresponding logger value.

Copy and Paste the Date/Times from the Dump Tab into the Date/Time cells in the Adjustment Register Tab

Copy and Paste the Check Groundwater values from the Dump Tab into either the ExSG/EPB cells in the Adjustment Register Tab

Copy and Paste the Logger Groundwater values from the Dump Tab into the Raw Logger reading cells in the Adjustment Register Tab

If there is a +/- error associated with the check reading, add this to the +/- cell

Editing Data

Editing data is pretty subjective. One person's interpretation of data will always, in some way or another (mostly the other), differ from some else's. Just the nature of the job

This section makes the huge assumption that the user processing data is reasonably confident and familiar with the editing features in Manager. If not, get training!

Remove large spikes when you find them. Any edits to data require a comment to be added to the comment tab in the Inspection Register.xlsx. The comment fields are pretty straight forward. All edits require a corresponding Quality Marker also. This is described in greater detail in the quality data section

All edits also require a corresponding quality marker added the comments sheet (See the Quality Schema for classification)

Check around inspections for hidden gap markers, spikes from the technician's on site, and other funny stuff. You can also run a hidden gap marker Virtual Measurement. Refer to the Hilltop VM documentation

Noise in the data can be interpolated using a range Virtual Measurements to 'Smooth' the data. Refer the Hilltop VM Documentation

Delete all data that is obviously wrong i.e. sensor faults. No synthetic data is can be applied to any dataset over events. Leave it as missing

Equally, if missing record is present in the dataset, locate the down-loads (if any). Check the data on Public Telemetry and even Hydro Telemetry as a first port of call. Don't just start making data up without checking in every location where data may be hiding. It is not always where it should be!

All ramp corrections to the data require evidence of the ramp correction applied in the Adjustments Register. If you are not familiar with this, ask a data processor

Other areas to look at are:

- Sensor changes, which relates to;
- Offset/multiplier changes. Find out what these are. Offset and multiplier changes are a real headache, often resulting in significant modification to the data and over significant time periods. This may lead to re-correcting older data files
- 'Weird' data
- Sudden drops and rises in water level, without inspections

Use the Inspection Register also when looking through the data. Look for large deviations of check data from logger data. If this occurs, find out why. Take some note of the +/- error (if any) and factor this into the equation

You may also want to run some really basic statistics also during your processing such as

- Reference deviation plots
- Sensor drift plots

All edits to data require comments that should contain no jargon or spelling mistakes (some people are quite anal about spelling). Nor should they contain overly specific technical information. You need to numb it down, people/scientists will not know what an ISD is, nor a RLO, which also means- NO abbreviations i.e. ESG, EPB, CG etc. this just adds to the confusion.

Ramp Corrections: Why the stigma or misconception on this? Ramp corrections are linear transformations of data as a function of time i.e. R (t). Ramp corrections often are required where a regular transformation fails to solve the problem. Since hydraulic data varies over bath space and time (rivers are not in a controlled environment, no matter how much operations tries), often the best practice is to make linear transformations to known references largely to correct

recording faults. Ramps minimise the effect of the fault. Ramp corrections do not distort data, nor do they introduce false record; they merely adjust data linearly that already exists.

Synthetic data should be classified as data obtained from indirect measurement i.e. using visually interpolations over extended periods of time, modelled data, instantaneous record created from discrete data points etc. The true test for synthetic data is: "Have I used or modified pre-existing data, to achieve the desired result (whether this is VM's, linear offsets etc.)?" if the answer is yes, then it cannot be called "synthetic", if the answer is no, then it most perceptibly is synthetic data

All data that there is no confidence in, or there is reason to believe that the data is not recording what it should be, should be deleted from the record. Any unreliable data that cannot be repaired should be removed from the record

Evidently, there is room for further editing tools. Will add to this latter

Correcting the Data

Once all the editing to the data has been finalised, or that you're happy with the corrections made, copy the working file to another file within the object tree called "Corrected". This is where you are going to apply the offset transforms and ramp corrections

Groundwater is measured to +/- 50 mm tolerances. Keep this in mind when applying transforms and/or adjusting offsets. Use some brain power to decide if there are shifts in the offset based on the information provided by the check Inspection Register and the logger values

Ramp corrections are applied when changes are made to offsets. Ramp corrections need to be applied from one offset to another to prevent steps in the data sets

There are a plethora of basic statistical tools available in both Hilltop Hydro and Microsoft Excel. Use these for justification for offset changes also

Right click > Copy

In the Data Source, insure that the Series Data and Check Data check boxes are clicked. If you have Virtual Measurements running the working file, un-check these

In the Time Range > All Data	
The Destination > Site > Corrected	
Filename > hit the S button	Copy Deta Source Source Site Working Data Source GroundWater V Series Data V Check Data All Rating Sets Cancel Time Rang From 14May 2009 15:45:00 To 11May-2012 11:30:00 Start of Data All Data From Graph Help
	Quality

Hit the Go button once you're done

In the Inspection Register, hit the Dump Tab and re-run the Get Hilltop Check Data script, this time for the Corrected series data. Follow the same steps as described above

Copy and Paste the Logger Groundwater values in the Dump Tab, into the Absolute Difference cells in the Adjustments Register

Complete the basic maths in the Absolute difference row (Adjusted Logger - External ExSG)

Determine any offsets in the Offset/multiplier cells and/or Ramp adjustment cells

Once the offsets and ramp corrections (if any) have been established, open manager and correct the data in the Corrected Series Data (using the method that has been described throughout this document). If you are unfamiliar with transforming and/or ramping data, ask a data processor to help you through it

Once the transforms and/or ramp corrections have been applied to the data, copy the Corrected file to another file within the object tree and rename the file to the Hilltop Site Name i.e. MDC Himatangi Shallow (using the copy method that has been described throughout this document)

Quality Coding Data

Use the Inspection register to define the base quality codes. Populate the Corrected logger and Final Difference cells in the Inspection Register.

The NEMS (not even sure that this is correct yet) schema is as follows:

- All Transformations and Ramp Corrections ≤ 50 mm QC 600.
- All final differences between the ExSG/EPB and logger ≤ 50 mm QC 600
- All Transformations and Ramp corrections ≥ 50 100 mm QC 500
- All final differences between ExSG/EPB and logger ≥ 50 100 mm QC 500
- All Transformations and Ramp Corrections ≥ 100 mm QC 400
- All final differences between ExSG and logger ≥ 100 mm QC 400

Add the quality codes to the inspection register in the Baseline QC cells.

Once the base line Quality Data has been determined, add all the quality codes from the manual edits made to the data. The comments Tab on the Inspection Register (if you have been adding the QC as you go - as you should be...) will basically tell where and what the QC is for the edits made. These also require entering into Hilltop Manager. These are

- All manual editing to the data ≤ 3 hours QC 500
- All Manual Editing to the data ≥ 3 hours QC 400
- All Synthetic editing to the data QC 300
- All unverified/cautionary data QC 200
- Missing record QC 100

Note that the Lowest Quality Code Prevails

This means exactly that: QC 100 \geq (\leftrightarrow) 200 \geq 300 \geq 400 \geq 500 \geq 600

To enter the data into Manager:

Hit the Quality Data View Icon Q. This brings up the following blank window:

🚝 Manager - X:\Groundwater\MDC Himatangi\Shallow\104\104.hts
File Edit View Data Configure Project Scan Window Help
N S R S S S S S S S S S S S S S S S S S
X:\Groundwater,MDC Himatangi\Shallow\104\104.hts
File Info File Information for X:\Groundwater\MDC Himatangi\Shallow\104\104.hts Hilltop Manager is displaying Quality Data. There is an audit trail in X:\Groundwater\MDC Himatangi\Shallow\104\104.mdb Hilltop programs can write to this file The file is 10938.9Kb long and there is 5584.0Kb of data There are 156 batches in use
Data > Add

This brings up the following dialog box that you have seen before

Site	MDC Himatangi Shallow	OK
DataSource	GroundWater	Cancel
		Help
Series F	ating Virtual Measurement Comment	
Time Se	ries Options	
	Automatic Date and Time Also add Quality Markers	
Graph	Groundwater	
	Date and time	
Hvdrom	etric Gauging Ontions	
,	Show Horizontal Angle	
	Show Meter coefficients	

All you really need to do is hit > OK

This brings up the data entry table

Manager - Xt/Groundwater/MDC Himatangi/Shall	sw/104/104/Hts		
File Edit View Data Configure Project Sca	n Window Help		
F 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
X\Groundwater\MDC Himatang?\Shallow\104\1	04.hts		
File Info			
C Headeg Lutter ↓ ≥ Goundeader	202 2	Mar 2000 Dec 2000	3er 2013
	Date	Time	Groundwater (Quality)
	14May 2003	154500	600
	27-Map-2009	17:45:00	100
	5/un-200	130000	500
	540.009	134500	500
	44ics-2009	11:15:00	500
	4Nov-2009	121500	600
	84pr-2010	10:00:00	500
	84pr-2010	10:30:00	600
	10-May-2010	15:45:00	500
	10-Map-2010	1645:00	600
	11-May-2010	10:30:00	100
	12-May-2010	11:00:00	600
	19-Hay-2010	141500	500
	13-May-2010	14.45:00	600
	17 Jun 2010	141500	100
	11-M8-2011	030000	600
	25/04/2011	12.800	100
	15.8(m) 2011	12/5/0	500
	26.Jan 2012	13/000	(m)
	26Jap 2012	134500	400
	23Mw 2012	11.00.00	500
	23 Mar 2012	11:30:00	600
	23-Mar-2012	151500	500
	23-Mar-2012	154500	600
	27 Apr 2012	16.45.00	100
	1-May 2012	11:30:00	600
Ready		27-Oct-2009 0	5:18:12 109 mm

Add the quality data into the table. The headers should make it pretty clear what goes where.

Once you have finished adding the quality data, save the file

Final Steps: Mopping Up the Paper Work

In Manager, list out the inspection comments.

Hit the 🖺 icon > Right Click > List

This brings up the dialog box

	Data List	×
	Time Range From 14-May-2009 15:45:00 To 1-May-2012 11:30:00	ОК
	Start of Data All Data Finish of Data	Cancel
(Write to Clipboard	Help
Hit > All Data		

Insure that the 💌 is checked so that the data is written to the clipboard

Paste the output into the File Details Template under Check Comments

Hit the Q

Follow the instructions above for check comments (exactly the same, now just for the quality data)

Paste the output into the File Details Template under Quality Data

Right click on the Hilltop Site Name in Manager i.e.:

Right Click > Details

This gives a summary of the data sources in the Hilltop Site Name Dataset. You will need to physically click the text screen in Manager and Ctlr+C to copy the text output from the screen

All Data Sources, check, and quality data start and end Dates/times should be the same. If they are not, they need to be. All data should end on an actual inspection, and never on missing record

Paste this into the File Details Template under Final Details and Gaps

Click on the Data source > Right Click > Gaps

This brings up the following screen (this should really be hitting home by now ...):

Gaps in MDC Himatangi Shallow [G	GroundWater]				×
Site	Data Source	From	To	Duration	_
MDC Himatangi Shallow	GroundWater	27-May-2009 17:45:00	3-Jun-2009 22:15:00	7.19 Days	Select All
MDC Himatangi Shallow	GroundWater	11-May-2010 10:30:00	12-May-2010 11:00:00	1.02 D ays	
MDC Himatangi Shallow	GroundWater	17-Jun-2010 14:15:00	11-Mar-2011 03:00:00	8.76 Months	
MDC Himatangi Shallow	GroundWater	27-Apr-2012 16:45:00	1-May-2012 11:30:00	3.78 Days	Deselect All
					Remove Gaps
					View Gaps
					Cancel
Select gaps less than or equal to					Help
From T	0	Select			

Select all > View Gaps

This gives a summary of the gaps in the data source(s) in the Hilltop Site Name Dataset. You will need to physically click the text screen in Manager and Ctlr+C to copy the text output on screen

Paste this into the File Details Template under Final Gaps

Under Additional Information in the File Details Template, add any relevant comments. These comments should be aimed at helping during the review

Cleaning Up and Printing Off

Populate the URF in the Inspection Register (it even has a tab, like the rest). It should be pretty obvious what goes where. Print this off. It is the Cover sheet to your processing

Print off the File Details Template

Print off the Adjustments Register

Print off any xlsx graphs you may have done

Print off the comments sheet(s)

Print out the Datum Tables

Print out the Previous Inspection Register (helps during review)

In Manager, print out the final graph at full scale at the full time range. Insure that the quality marker colours are enabled. Print this graph out

The graph quality marker colours can be toggled on/off using the Configure menu i.e.:

Configure > Graphs

This brings up the following dialog box

Graph Options		X
Background Colour	Dark Grey 2 💌	ОК
Inner background Colour	White 💌	Font
Axis Colour	Black 💌	
Graticule Colour	Pale Cyan 💌	Print Setup
Colour Sequence for Overp	blots	Page Setup
Next colour in sequence	-	- Tage Setup
Remove Move Up Move Down	Green A Red Orange Deep Sky Blue Blue Magenta Grey Pink Light Green Light Green Light Purple Yellow	Help
✓ Overplot Rainfall upside Draw Water Quality E	e down 🔽 Use Quality odata as Bars BarWidth 20	data for colours

Use the 💌 check box to toggle the quality marker colours off/on on the grappins. It even has a comment 'Use Quality Data for Colours'.

Hit OK

Open Hilltop Hydro using hitting the 📔 icon

Once in Hydro > Graphs > Statistics (PSummary)

This brings up the following dialog box:

Summary Statistics	? <mark>×</mark>
	Data Selection Image: Site image: Site image: Collection Site Amons Measurement Conductivity Low Range (T Comp) From [24:Mar-2005] To 11:Aug-2011 Statt of Data All Data End of Data Time Filter Options Filter Graph Plot Options Filter Mul 1 Div 1 Add 0 C Actual Data C Fixed Interval Average C Moving Interval Total Interval 1 Non-detects Eess than Actual value Less than Actual value Greater than Actual value
Site Tree C Collection Tree	🔽 Draw Graph 🗌 Send to Clipboard
Command Press <f3> to type a command</f3>	OK Help Cancel

Im not going into a huge amount of detail here, there is documentation on all the quirks of this programme in the Hilltop Help menu

Unsure that the Single Site 🙆 is checked

Select the Hilltop Site name and the data source you are working on i.e. Groundwater

Hit > All Data

Unsure that the Quality Data 💽 is checked

Make sure that the following are also checked:	V	Annual Statistics,	\mathbf{V}	Draw Graph, and	Send to Clipboard
--	---	--------------------	--------------	-----------------	-------------------

Hit OK

This brings up the quality data in bar graph form



File > Print

Close the graph in Hydro (not Hydro, the Small x in the viewing window), and you will see that there are actual generic/ numeric summary statistics in the background

rile Edit	View Grad	ohs lable	Reach EV	rent Learn	Project	Window H	elp								
0.8	8 % @		FT IR												
mmand 🗌		a													
~~ Hillto	op Hydro -	~~~ Vers	ion 6.17						4-Jul-	-2012					
~~ PSumma	ary ~~~														
uality o	f Data														
uality o: ource is	f Data X:\Ground	dwater\M	DC Himata	angi\Sha:	11ow\104'	\104.hts									
uality o: ource is equested	f Data X:\Ground Time Per:	dwater\M iod is 1	DC Himata 4-May-200	angi\Sha 09 15:45	11ow\104	\104.hts 1-May-20:	12 11:30:	:00							
uality o: ource is equested	f Data X:\Ground Time Per:	dwater\M iod is 1	DC Himata 4-May-200	angi\Sha 09 15:45	llow\104 :00 to :	\104.hts 1-May-20:	12 11:30:	:00							
uality o ource is equested roundwate	f Data X:\Ground Time Per: er at MDC	dwater\M iod is 1 Himatan	DC Himata 4-May-200 gi Shallo	angi\Sha 09 15:45 ow	llow\104' :00 to :	\104.hts 1-May-20:	12 11:30:	:00							
uality o: ource is equested roundwate Year	f Data X:\Ground Time Per: er at MDC	dwater\M iod is 1 Himatan 20	DC Himata 4-May-200 gi Shallo Q:	angi\Sha 09 15:45 ow 100	11ow\104 :00 to :	\104.hts 1-May-20: 200	L2 11:30: Q3	:00	04	100	05	500	Q	600	Total
uality o: ource is equested roundwate Year	f Data X:\Ground Time Per: er at MDC %Time	dwater\M iod is 1 Himatan 20 #Days	DC Himata 4-May-200 gi Shallo Q: %Time	angi\Sha 09 15:45 ow 100 #Days	11ow\104 :00 to : Q: &Time	\104.hts 1-May-20: 200 #Days	L2 11:30: Q: %Time	:00 300 #Days	Q: %Time	100 #Days	Q: %Time	500 #Days	Q' %Time	600 #Days	Total #Days
uality o: ource is equested roundwate Year *2009	f Data X:\Ground Time Per: er at MDC %Time 0.00	dwater\M iod is 1 Himatan 20 #Days 0.0	DC Himata 4-May-200 gi Shallo Q: %Time 3.11	angi\Sha: 09 15:45 0w 100 #Days 7.2	110w\104 :00 to : Q: %Time 0.00	\104.hts 1-May-20: 200 #Days 0.0	2 11:30: Q: %Time 0.00	:00 800 #Days 0.0	Q4 %Time 0.00	400 #Days 0.0	Q5 %Time 0.03	500 #Days 0.1	Q %Time 96.86	600 #Days 224.1	Total #Days 231.3
uality or ource is equested roundwate Year *2009 2010	f Data X:\Ground Time Per: er at MDC %Time 0.00 0.00	dwater\M iod is 1 Himatan 20 #Days 0.0 0.0	DC Himata 4-May-200 gi Shallo Q: %Time 3.11 54.36	angi\Sha: 09 15:45 0w 100 #Days 7.2 198.4	110w\104' :00 to : Q: %Time 0.00 0.00	\104.hts 1-May-20: 200 #Days 0.0 0.0	12 11:30: Q: %Time 0.00 0.00	:00 300 #Days 0.0 0.0	Q4 %Time 0.00 0.00	400 #Days 0.0 0.0	Q: %Time 0.03 0.02	500 #Days 0.1 0.1	Q %Time 96.86 45.61	600 #Days 224.1 166.5	Total #Days 231.3 365.0
uality o: ource is equested roundwate Year *2009 2010 2011	f Data X:\Ground Time Per: er at MDC %Time 0.00 0.00 0.00	iwater\M iod is 1 Himatan 20 #Days 0.0 0.0 0.0	DC Himata 4-May-200 gi Shalla %Time 3.11 54.36 18.94	angi\Sha: 09 15:45 0w 100 #Days 7.2 198.4 69.1	110w\104 :00 to : %Time 0.00 0.00 0.00	\104.hts 1-May-202 200 #Days 0.0 0.0 0.0	12 11:30: Q: %Time 0.00 0.00 0.00	:00 #Days 0.0 0.0	Q* %Time 0.00 0.00 0.00	400 #Days 0.0 0.0	Q: %Time 0.03 0.02 12.73	500 #Days 0.1 0.1 46.4	Q %Time 96.86 45.61 68.33	600 #Days 224.1 166.5 249.4	Total #Days 231.3 365.0 365.0
uality o: ource is equested roundwate Year *2009 2010 2011 *2012	f Data X:\Ground Time Per: er at MDC %Time 0.00 0.00 0.00 0.00	dwater\Mi iod is 1 Himatan 20 #Days 0.0 0.0 0.0 0.0	DC Himata 4-May-200 gi Shallo %Time 3.11 54.36 18.94 3.11	angi\Shai 09 15:45 00 #Days 7.2 198.4 69.1 3.8	110w\104 :00 to : %Time 0.00 0.00 0.00	\104.hts 1-May-203 2000 #Days 0.0 0.0 0.0 0.0	2 11:30: Q: %Time 0.00 0.00 0.00 0.00	300 #Days 0.0 0.0 0.0	Q: %Time 0.00 0.00 0.00 48 47	400 #Days 0.0 0.0 0.0	Q: %Time 0.03 0.02 12.73 19.43	500 #Days 0.1 46.4 23.6	Q %Time 96.86 45.61 68.33 28.98	600 #Days 224.1 166.5 249.4 35.2	Total #Days 231.3 365.0 365.0
uality o: ource is equested roundwate Year *2009 2010 2011 *2012	f Data X:\Ground Time Per: er at MDC %Time 0.00 0.00 0.00 0.00 0.00	dwater\M iod is 1 Himatan 20 #Days 0.0 0.0 0.0 0.0	DC Himata 4-May-200 gi Shallo %Time 3.11 54.36 18.94 3.11	angi\Sha 09 15:45 00 #Days 7.2 198.4 69.1 3.8	110w\104 :00 to : %Time 0.00 0.00 0.00 0.00	\104.hts 1-May-20: #Days 0.0 0.0 0.0 0.0	2 11:30: %Time 0.00 0.00 0.00 0.00	300 #Days 0.0 0.0 0.0 0.0	Q4 %Time 0.00 0.00 0.00 48.47	400 #Days 0.0 0.0 0.0 58.9	Q %Time 0.03 0.02 12.73 19.43	500 #Days 0.1 0.1 46.4 23.6	Q %Time 96.86 45.61 68.33 28.98	600 #Days 224.1 166.5 249.4 35.2 675.2	Total #Days 231.3 365.0 365.0 121.5

File > Print

You can close Hydro now

Over plot the Raw and Final Datasets. Print this off. Enure that you have the quality colour markers OFF. Scale the y-axis to an appropriate scale so that it can be read

Create the Audit Virtual Measurement

Data > Add

This brings up the following dialog box

Addata	×
Site Audi	ОК
DataSource Audit	Cancel
	Help
Series Rating Virtual Measurement Comment	
Measurement Name Audit	•

Site > Audit

DataSource > Audit

Virtual Measurement Tab > Audit

OK

This brings up the Virtual Measurement dialog box. Essentially all that is being done in the Audit VM is Subtracting the final from the raw datasets. This shows the auditor exactly what was going on during the processing stage.

Virtual Measurements work on conditional and Boolean logic. Further information about Virtual Measurements can be found in the Virtual Measurement Documentation



Save once your code is done

This should now display the output of your Virtual Measurement Code

Over plot the Audit VM (on a new right-hand axis)

Print the graph generated in 3 month plots. You will also need to annotate the resulting outputs (currently there is no option to display check comments on graphs). Annotated plots should cover

- > Adjustments made to the data
- > Areas that warrant justification for edits/adjustments made
- Suspect areas that you're not confident with. The reviewer/auditor can then make decisions on best practice.
 It also acts as a second opinion. If you're lucky, you might only get the one...
- > Inspections that you have issues with or left from offset adjustments

Copy the data to the Provisional Archive. Use the common name in the copy dialog box when doing to insure that it is ging to the right file ie

On the data source > Right Click > Copy

This opens the following dialog box:

Data Source (Broundvalaer Go Data Source (Broundvalaer Check Data Quality WQ Sample Claudity Data Check Data Quality WQ Sample Time Range Check Data Quality WQ Sample Time Range From [14May-2005 [15:45:00 To 1 1May-2011 [11:30:00] Help Start of Data All Data Frinch of Data From Graph Only Copy New Data Archive File sets the time range Archive File Image Destination Filename Start of United Shallow Image Filename XGroundwater MDC Himdarng/Shallow1104/104.104.105 Users Vernod 1V Sensety/Public Televety/Mate Quality Whoth Of Himdarng/Shallow104/104.104.105 White of United WDC Himdarng/Shallow104/104.104.105 Whee Outly Converted and Archive Vlydometry. Integration of the set of the time type of the set of the set of the time type of the set of the set of the time type of the set of the s	Sil	e MDC Himatanni Shallow				
Consider and a final method of the set	Data Sourc	e Groundu(stor	Go			
Cancel Tine Range Tine Rang	I✓ Series	Data 🖌 Check Data 📘 All Rating Sets				
Time Range	IV Quality	Data 📘 Check Data Quality 🗖 WQ Sample	Cancel			
From 14-May-2003 15:45:00 To 1-May-2012 11:30:00 Stat of Data All Data Finish of Data From Graph Only Copy New Data Archive File sets the time range Archive File Destination Site (MDC Himatangi Shallow Data Source GroundWater Filename Kingrundwater/MDC Himatangi/Shallow104/104 hts VVPrh-od1V Genety/Hub CHemety hts Charget Vaser/Environment, Ngroundwater archive hts VVPrh-od1V Genety/Hub CHemety hts VVPrh-od1V Chemety/Hub CHemety hts VVPrh-od1V Chemety/Hub CHemety hts VVPrh-od1V Chemety/Hub CHemety hts VVPrh-od1V Genety/Hub CHemety hts VVPrh-od1V CHemety/Hub CHemety hts VVPrh-od1V CHemety hts VVPrh-od1V CHemety hts VVPrh-od1V CHemety hts VVPrh-od1V CHemety hts VVPrh-od1V CHemety hts	-Time Range					
Stat of Data All Data Finish of Data From Graph Only Copy New Data Archive File sets the time range Archive File Destination Site (MDC Himatangi Shallow Data Source GroundWater Filename Kingrundwater/MDC Himatangi/Shallow104/104 hts White of U1 Velenety/Julid: Telenety hts Charget Vase/SingrundWater Cuality Went-of U1 Velenety/Julid: Telenety hts Charget Vase/SingrundWater USD-105 hts New Quality Vase/Singrundwater USD-105 hts New Quality Vase/Singrundwater USD-105 hts Nase/SingrundWater USD-105 hts New Quality Vase/SingrundWater USD-105 hts Nase/SingrundWater USD-105 hts Progress HV14pdology SteetManawulu at Vebc100 hts Progress HV14pdology SteetManawulu at Vebc100 hts Progress HV14pdology SteetManawulu at Vebc100 hts	From 14-M	fay-2009 15:45:00 To 1-May-2012 11:30:00	Itala			
Only Copy New Data Archive File sets the time range Archive File Destination Site MDC Himatang Shallow Data Source GroundWater Filename KiGroundwateR utility Which cd1 Netemetry Mbg Hudtor letemetry Mbg Which cd1 Netemetry Wh	Start of	Data All Data Finish of Data From Graph	пер			
Archive File Destination Site MDC Himatang Shallow Data Source GroundWate Filename Vignundwater\MDC Himatang\Shallow\1041104.Hts Vignundwater\MDC Himatang\Shallow\1041104.Hts Vignundwater\MDC Himatang\Shallow\1041104.Hts Vignundwater\Brucker Higher High	🔲 Only Co	ppy New Data 🛛 🗖 Archive File sets the time range				
Destination Site MDC Himatangi Shallow Data Source GroundWater ViGroundWater ViGroundWater/MDC Himatangi/Shallow/104104.1ks VPn-cd1V leenety/Mpdc Hydrol elenety/Ms Varex/Digrad/Hilloy Telenety/Main Ids Varex/Digrad/Hilloy	Archive File	_				
Detrination Site MDC Himatangi Shallow Jata Source GroundWater Filename K-Vinnordwater/MDC Himatangi/Shallow/104/104 his V-Vinnord V-Telenetly/Multi-Telenetly his User Coll V-Telenetly/Multi-Telenetly his User VolgarioWilliog New Quality V-Vinford V-Telenetly/Multi-Telenetly his New Quality V-Vinford/V-Telenetly/Multi-Telenetly his New Quality V-Vinford/V-Vinford Telenetly/Multi-Telenetly his Progres Progre		·				
Site MDC Himstang Shallow Data Source GroundWater Filename Cuality UPAn cdl 1V demetry/hyb. Hyhool Tekenetry Ms UPAn cdl 1V demetry/hyb. Tekenetry Ms Change Vase/Environment //SicurdWater, acrive hts New Quality UPAnounder / SicurdWater, acrive hts New Quality Change Vase/Environment //SicurdWater, acrive hts Phogens + Hyhoonentic, acrive hts Phogens + Hyhoonentic, acrive hts Phogens + Hyhoonentic, acrive hts Hyhoonentia Archive Hyhoonentic, acrive hts Phogens + Hyhoonentia Veb., 1100 hts Hyhoonentia Archive Hyhoonentic, acrive hts	Destination					
Data Source GroundWater	Site	MDC Himatangi Shallow				
Filename X: Groundwater\MDC Himatang\Shallow11041104.hs VPnk-cd11 elemety/Hydic. VHydic0 elemety.hts VPnk-cd11 elemety/Public elemety.hts Venk-cd11 elemety/Public elemety.hts Vares\Signal VHillow1 elemety.hts New Quality (Signal VHillow11051105.hts Vares\Environmertal ArchiveVHydiometric_archive.hts Progress H\Hydrology Stert\Manawatu at Vebc100 hts Phogess H\Hydrology Stert\Manawatu at Vebc100 hts	Data Source	GroundWater 🗨				
X-ViGroundwater/MDC Himatang/Shallow/104/104 hts VPnt-cd1 V leenety/vb. Urb(cd) Elemetry /hts Quality Vare/Shallow/Public Idemetry /hts Change Vare/Shallow/Public Idemetry /hts Change Vare/Shallow/Public Idemetry /hts New Quality /Signow/Hildow/105/105 hts New Quality /Signow/Hildow/105/105 hts Ptogress H-Vig/dology/Sete/Manawulu at Vebc. 1001 hts Ptogress H-Vig/dology/Sete/Manawuluu Atvebc. 1001 hts Ptogress H-Vig/dology/Sete/Manawuluuu H-Vig/Dology/Sete/Manawuluu	Filename					
VPn-cd1Velenety/Nyd VydoTo Feinety hts Oubly. VPn-cd1Velenety/Nyd VydoTo Feinety hts Varex/Diginal/Hillion Telenety/Nan hts Progress H'NydoRogo/Stev/Manawalu at Vebe. // 100 hts Progress Progrest Progress Progress Progress Progress Progres		X:\Groundwater\MDC Himatangi\Shallow\104\104.hts				
Ousling Value Centency / Value Centency / Na Change Value Centency / Na Change Value Centency / Na Change Value Centency / Na New Quality / Condexed Center / OS/105 / Na Power Centence / Condexed Center / OS/105 / Na Power Centence / Condexed Center / Condexed Center / Condexed Center / Condexed Center / Na Program H-N-Hydrology Steet Manawalu at Vebe V100 / hs Program H-N-Hydrology Steet Manawalu at Vebe V100 / hs		\\Pnt-cd1\Telemetry\Hydr\HydroTelemetry.hts				
Changel Vases/Environment, JiGourdivater, active his New Quality, Chromodwater, Bucker 105:105 his Progress, All Montary Manawalu at Veber, 1010 his Progress, Hillydology Steel-Manawalu at Veber, 1000 his Progress, All Mostary-Manawalu at Veber, 1000 his Progress, All Mostary-Manawalu at Veber, 1000 his	- Quality	Vares/Original/Hillop Telemetry/him.hts				
New Quality P-Groundwater/Budier\105.hts P-Soil Motioure/Manawatu at Weber1101.hts Progress P:Soil Motisture/Manawatu at Weber1101.hts P:Soil Motisture/Manawatu at Weber1101.hts	Chang	\\ares\Environment\Groundwater_archive.hts				
Progress H:\NetWorking Steel\Manawatu at Weber\100.hts P:\Soil Moisture\Manawatu at Weber\100.hts PtySoil Moisture\Manawatu at Webe\100.hts	New Quality	P:\Liroundwater\Butlers\105\105.hts				
Progress H:\Hydrology Sites\Manawatu at Web\100.hts P:\Soil Moisture\Manawatu at Weber\100.hts		P:\Soil Moisture\Manawatu at Weber \101 hts				
P:\Soil Moisture\Manawatu at Weber\100.hts	Progress	H:\Hydrology Sites\Manawatu at Web\100.hts				
		P-\Soil Moisture\Manawatu at Weber \100 bts				

Ensure that the 💌 Series Data, 💌 Check Data, and 💌 Quality Data are checked

Time Range > All Data

File Name > Scroll to < More >

This opens the following dialog box:

Сору То	Providence Pro-		×
Save in: 🌗	Logger Downloads 🗸] ← 🗈	
	No items match your sear	ch.	
File name:			Save
Save as type:	Hilltop Files (*.hts)	•	Cancel
Common Name	Archive: Groundwater Archive: Hydrometric	•	

Use the Common name and select > Archive: Provisional Data

Save

This goes back to the copy data dialog box > Go

You can now close the Manager file

In the Inspection Register under the Audit Tab

Data > From Access (Get External Data)

This brings up the following dialog box in Excel:

K Select Data Source							×
😋 🔵 🗢 🐌 🔸 Computer 🕨 \\ares\Environmental Da	ata Valida (X:) + Groundwater + MDC Hi	matangi 🕨 Shallow 🕨 104		Search 104		۶
Organize 👻 New folder						· ·	0
Computer Local Disk (C:) Model Dynamic Computer Local Disk (C:) Model Dynamic Computer (D:) Dynamic Computer (D:) Dynamic Computer (D:) Phythology (H:) Cawthorn (\userhome\users) (M:) Andys Workspace (W:) Wareschemichusers (M:) Wareschemichuser (D:) Wareschemichuser (D:) Wareschemichuser (D:) Archives (Y:) Wareschemichuser (D:) Archives (Y:) Recycle Bin Deiregy(un12)2MH Dump	E	Name 2010	Date modified 4/07/2012 12:02 p	Type Microsoft Access	Size 134 KB		
New Source					✓ Access Data	bases	•
				Tools	• Open	Cance	el

Locate and select the Audit.mdb in your working directory i.e.:

\\ares\Environmental Data Validation\Groundwater\MDC Himatangi\Shallow\104\104.mdb

This brings up the following Import Data dialog box:

Import D	ata			? X
Select ho	w you wan	t to view thi	s data in	your workbook.
	Table			
1.1	PivotTa	ble Report		
1	Pivot <u>C</u> h	art and Pivo	tTable R	eport
	Only Cr	eate Conne	ction	
Where do	o you want	to put the d	lata?	
🔍 🔁	kisting work	sheet:		
	=\$A\$1			
© <u>N</u>	ew workshe	et		
Propert	ies	Oł	<	Cancel

Hit > OK

Format the StartDate and EndDate columns so that they contain both the Dates and Times

This will populate the Audit Sheet in the Inspection Register with data from the Audit Trail. Print this off

Final Touch Ups

Collate the above print offs

Add the photocopied inspection chits, surveys, calibrations etc to the above paperwork

Put in the pile with all the other data awaiting QA

Open CDTools

	MDC H	limata	angi Deep	>		
•	100 C)ate ON ſime ON	31/07/2007 16:00 Water Lev	Date OFF Time OFF el	5/06/2009	
	Processing Informati Pickup Date Staff Member Processed Date: Hilltop Check Data Quality Codes	on Missing I Andy Cawth	Record Review Arc 9/09/2009 orn 💽 9/09/2009	hiving Total Staff Hours: Processing Comment:	1	

Add the date the processing was complete and the number of hours spent processing the data. Add any additional comment into the Processing Comment field. Use this aid the preceding batch ie if the data ends on missing record or the preceding batch requires back correction of this batch

Finally, if there is mssing record, add this to the Missing recod Tab. You may also want to add all the synthetic Data you have created for this also. Check the Kissing Record and enter the number of Days

MDC Himatangi Deep					
100 Date ON 31/07/2007 Time ON 16:00 Water	Date OFF 5/06/2009 Time OFF 15:15 Level				
Processing Information Missing Record Review Missing Record Total MR (Days): 0.000	Archiving Batch Comments NON-CONFORMANCE				