

Version No: 01 Issue Date: 20/09/2012 Portfolio: Survey	Horizons Regional Council	Section No: 3.4 Page: 1 of 1
	Hydrology Operations Manual	

Survey Accuracy

Overview:

This document outlines the accepted error closes. The level of accuracy for the survey depends on the purpose of the survey.

Purpose	Error Margin for Survey Close	
<u>Site Establishment</u>	0mm close on benchmarks and survey elements	
<u>Site Establishment follow-up:</u> Benchmark Check	0mm close on benchmarks	Secondary independent survey which follows site establishment. Confirm the BM's and RL check for the site after it has stabilized/that it has stabilized. Survey performed approximately 1 month after install.
<u>Benchmark Check</u>	1-2mm close on benchmarks	Need to quantify where the error has occurred within the survey (between each point). Check the rise/fall for each point as well as the close within the survey. Helps to do regular change points within survey if at all possible.
<u>Staff Gauge Check:</u> Errors observed between logger and water level.	<ul style="list-style-type: none"> • 0-1mm close on change points/benchmarks for survey. • 2mm close acceptable on ESG 0 	Change points should be benchmarks or stable points which are not liable to move.
<u>Orifice Check:</u> Errors observed between logger and observed water level.	<ul style="list-style-type: none"> • 0-1mm close on benchmarks for the survey. • 2mm close acceptable on ESG 0. • WL reading - up to 3mm error tolerance. 	Hint – record WL as an intermediate. If WL included within survey as BS/FS it will increase relative error within the survey and affect the close of the survey due to inaccuracy of WL surging and recording from the staff (minimum error margins $\pm 3\text{mm}$).
<u>ESG re-platting/ Plating up a new ESG</u>	<ul style="list-style-type: none"> • 0-1mm close on change points/benchmarks for survey. • 2mm close acceptable on ESG 0. 	
<u>Cross section</u>	3-10mm close on benchmarks acceptable in the X/Y plane.	Total station survey back to benchmark started on provides the (difference from first survey) error margin up to 10mm. Record the total station height within cross section.
<u>Long Profile/Slope at site</u>	3-10mm close on benchmarks acceptable in the X/Y plane.	Total station survey back to benchmark started on provides the (difference from first survey) error margin up to 10mm. Record the total station height within cross section.