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Son Tek Gauging Quality Assurance Checking

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Overview

This procedure covers the quality assurance checking of Sontek gauging data and its entry into hilltop. This procedure does not cover the field practices or interpretation of the data (covered in Sections 6.17 and 6.35 of this manual). In general, the person quality checking the gauging must not have been the person performing the gauging. Any minor errors can be corrected at the time of checking.

Any items below can be corrected in the QA process, and a new face card printed. Any errors that can not be rectified easily need to be referred to the person who completed the gauging, or the regional coordinator by way of a non-conformance.

All teams are to QA their own teams gaugings, including conventional & Sontek.

In order to QA check a gauging, all the information on the gauging card, face card, 15 item gauging results, and gauging register must be checked for consistency and completion. Details are listed below on what data must be checked. Once completed, sign the front of the gauging card ('Checked by').

Gaugings can then be archived, usually by the Data Delivery Team.



Paper work / files to be checked:

Items to check:

- Gauging card
- River Surveyor Q Summary
- Gauging register
- Hilltop Face card
- 15 Item array data

Where the information can be found:

- Should be retrieved from the Region gauging tray
- Should be attached to the gauging card
- Electronic register accessed through hilltop (right-click, info)
- Electronic face card stored in hilltop gauging file
- Electronic information stored in hilltop gauging file



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Check the face card/gauging card

Check the details on the original gauging card match those on the electronic face card. The details to check are:

Item to check	Checking for:
Date	Correct date of gauging
Time	Should be the mid time, or weighted mean time for the gauging in NZST Check the working and make sure the time is correct. To nearest ½ minute.
Stage	Mean stage relating to the gauging time above, this should normally be ESG unless unavailable. Check the working and make sure the stage is correct.
Method code	Should be 45 for Son Tek gauging (Refer to RICODA codes for other)
Quality Code	Should be on the gauging card and facecard. Plus the QC form attached. (either 600 Good/500 Fair/400 Poor)
Flow	Check the flow has been recorded in litres per second on electronic facecard (m3/s on gauging card, 1m3 = 1000 l/s)
As measured	Check the as measured box is ticked
Side channel flow	Check the side channel flow, if any, has been entered
Party	Check the gauging party names match the gauging card (prefer names not just initials)
Gauging number	Check the gauging number has been entered correctly
Meter serial number	Check the correct serial number of the Sontek has been recorded
Location	Check the location of the gauging matches the gauging card
Wind / current	Check the wind / current information, if any, matches the gauging card
Stage arrival / departure times	Times should match to the nearest minute the times recorded on the gauging card. Logger values and staff gauge values, when available, need to match the gauging card
Stage change	If available, should match the gauging card (mm/hr) calculated over the gauging period.

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15 Item array data checks

From the “Gauging Results” tree in the gauging register, right click on any of the items and choose edit. Check the details match those on the Gauging Card.



Item to check	Checking for:
Date	Correct date of gauging
Time	Should be the mid time, or weighted mean time for the gauging in NZST.
Stage	Mid stage relating to the gauging time above recorded in mm
Flow	Recorded in litres, and should match the gauging card ($1.0 \text{ m}^3/\text{s} = 1000 \text{ l}$)
Area	Recorded in mm^2 and should match the gauging card ($1.0 \text{ m}^2 = 10000 \text{ mm}^2$)
Velocity	Recorded in mm/s and should match the gauging card ($1.0 \text{ m/s} = 1000 \text{ mm/s}$)
Maximum depth	Recorded in mm and when recorded should match the gauging card else “-1”
Slope	Should be -1 unless surveyed.
Width	Recorded in mm and should match the gauging card ($1.0 \text{ m} = 1000$)
Hydraulic radius	Should be -1
Wetted perimeter	Should be -1
Sediment content	Should be -1
Temperature	Recorded in thousandths of degrees (e.g. $20.1^\circ = 20100$)
Stage change	Should match the gauging card and is recorded in mm
Method	Should be 4500 else refer to RICODA Codes.
Number of verticals	Should be -1
Gauging number	Should match the gauging card

Any items above can be corrected in the QA process. Any errors that can not be rectified easily need to be referred to the person who completed the gauging, or the area coordinator by way of a non conformance.

Gauging Register

Open the gauging register and select “Find” and enter the gauging number.

Item to check	Checking for:
Site name	Check the site name is correct for this gauging number
Gauging by	Only accepts one name, and should match the gauging card
Gauging date	Check the date matches the gauging card
Gauging time	Check the time matches the gauging card
Stage	Recorded in mm and should match the gauging card
Discharge	Recorded in m^3/s and should match the gauging card

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Meter	Should say "Son Tek RS-M9"
Prop #	The serial number of the Son Tek should be recorded here
Input by	Should be filled in
Input date	Should be filled in
Archived by	The name of the person who archives the data (must be approved)
Archive date	The date the gauging was archived
Comments	Record any changes made to the gauging as part of the QA process

Quality coding:

Check that the quality code (QC) section of the gauging card is completed and a final code calculated. The code needs to be entered into the electronic facecard upon data entry.

Archiving:

Only authorised persons can upload gaugings to the archive. This is to preserve the integrity of the archive data. Need to ensure we are not over writing series data or related data to the archive by mistake.

Approved persons are controlled by the permissions control on the archive file as approved by the manager or senior coordinator in charge of the archive.

- Copy the gauging to the archive file and record your name and date in the gauging register.
- File the face card print out in the "Hydrometric Gauging" files.
- File the gauging card in the library