# 1XXXXX Process hydrometric data

Kaupae   Level	5
Whiwhinga   Credit	20
Whāinga   Purpose	People with this skill standard will be able to manage hydrometric data collected from monitoring stations, review and analyse. It covers verifying data for quality and consistency, interpretation, detect discrepancies, applying adjustments and corrections during processing, and data in accordance with NEMS and worksite procedures. Learners will develop competence in maintaining data integrity, applying quality codes, and ensuring long-term accessibility and traceability of hydrometric records. This skill standard has been developed to align with the New Zealand Diploma in Field Hydrology (Level 5) [Ref: 2344].

Hua o te ako me Paearu aromatawai	Learning outcomes and assessment criteria

Hua o te ako   Learning outcomes		Paearu aromatawai   Assessment criteria		
1.	Verify and process hydrometric data		Compare data with field observations and notes to identify the patterns to detect discrepancies.	
			Apply appropriate adjustments or corrections to data based on verification findings.	
		C.	Assign quality codes or status to data using accepted classification standards.	
		d.	Document all actions, changes, and decisions in the metadata record.	
2.	Analyse hydrometric data as part of a quality management system	<del>a.</del>	Analyse data to identify potential discrepancies or inconsistencies.	
		b.	Demonstrate corrective action to address identified issues.	
3.	Provide quality-assured hydrometric information to users		Provide reviewed hydrometric data, including all relevant metadata and data quality status explanations.	
		b.	Communicate worksite procedures on provision of data.	

Hua o te ako   Learning outcomes	Paearu aromatawai   Assessment criteria		
4. Storage hydrometric data	a. Confirm accuracy and validity of processed data prior to archiving.		
	b. Ensure data consistency with parameter characteristics and long-term context.		
	c. Storage data, metadata, and supporting information in secure, accessible storage systems.		

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

# Assessment specifications:

Learners/ākonga' evidence must be collected from using naturally occurring evidence.

All activities and evidence must meet the requirements of worksite procedures, accepted industry practice, legislation and any subsequent amendments.

All activities relevant to this standard should reflect ngā kaupapa (the principles) o te Tiriti o Waitangi.

All activities should, as relevant to candidates and/or this standard, reflect the peoples of other cultures, and their world views.

#### Range

Hydrometric data includes water level and rainfall time series data.

Learners must complete three data reviews, each involving the verification, processing, and archiving of at least three months of data from three different sites. At least one of the sites must include a different parameter (e.g., rainfall vs. water level).

Evidence must demonstrate both analytical insight and communication of data quality.

Metadata must be fully documented for all processed datasets.

# Definitions

*Metadata* describes data in detail. It has information about how, when, and by whom certain data was collected and the data format.

*Worksite procedures* refer to the policies and procedures set out in a verbal or written form by the employer or organisation.

Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider industries as examples of best practice.

# Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

Recognise, Validate Data & Process Data

- Identify data types: water level, rainfall, discharge.
- Review time-series graphs, field notes, logs and photos to spot discrepancies (spikes, sensor drift or calibration errors).
- Follow NEMS for quality coding consistency.
- Perform adjustments: rating shifts, zero corrections, offsets.
- Use time-series editors or software tools for automated/manual corrections.
- Document metadata: who, when, why for every change.

#### Perform Statistical & Visual Analysis

- Calculate summary statistics: mean, median, percentiles, standard deviation.
- Generate visual outputs: time series, hydrographs, histograms, intensity plots.
- Detect anomalies: gaps, sensor drift, outliers, seasonal irregularities.
- Apply QA procedures for corrections, gap filling, and reanalysis.
- Check consistency and changes over time.
- Align with NEMS and industry quality standards.

#### Communicate Quality-Assured Data

- Conduct audience needs assessments.
- Deliver info in suitable formats: maps, tables, dashboards, reports.
- Assign and explain metadata: data source, period, instrumentation, quality codes.
- Clearly communicate data quality, limitations and adjustments.
- Follow procedures for data access, IP, privacy, and legislative compliance.
- Support applications in regulation, water allocation, flood response, and planning.
- Ensure traceable, accurate outputs tailored to user needs.

#### Apply Quality Status, Approval, Archive & Secure Data

- Assign quality codes as per NEMS.
- Ensure traceability and transparency throughout processing steps.
- Complete processing before storing data.
- Use consistent naming conventions and directory structures.
- Store in secure databases with backup, version control and disaster recovery measures.

#### Rauemi | Resources

Legislation relevant to this skill standard includes but is not limited to:

- NZHS <u>NZHS | The New Zealand Hydrological Society</u>
- Health and Safety at Work Act 2015 <u>Health and Safety at Work Act 2015 No 70 (as at 05 April 2025)</u>, Public Act Contents New Zealand Legislation
- National Policy Statement for Freshwater Management 2014 <u>National Policy Statement for</u> <u>Freshwater Management | Ministry for the Environment</u>
- Resource Management Act 1991 <u>Resource Management Act 1991 No 69 (as at 05 April 2025),</u> <u>Public Act Contents – New Zealand Legislation</u>
- Public Works Act 1981 <u>Public Works Act 1981 No 35 (as at 05 April 2025)</u>, <u>Public Act Contents New Zealand Legislation</u>
- Resource Management (National Environmental Standards for Freshwater) Regulations 2020 <u>Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (LI</u> 2020/174) (as at 01 January 2025) Contents – New Zealand Legislation
- Freshwater Farm Plans Freshwater farm plans | Ministry for the Environment
- National Environmental Monitoring Standards (NEMS) <u>National Environmental Monitoring</u> <u>Standards » National Environmental Monitoring Standards (NEMS)</u>

and any subsequent amendments or replacements.

#### Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa	Muka Tangata – People Food and Fibre	
Standard Setting Body	Workforce Development Council	

Whakaritenga Rārangi Paetae Aromatawai   DASS classification	Water Industry > Field Hydrology	
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga   CMR	0232	

Hātepe   Process	<b>Putanga  </b> Version	<b>Rā whakaputa  </b> Review Date	<b>Rā whakamutunga mō te aromatawai  </b> Last date for assessment
<b>Rēhitatanga  </b> Registration	<type here=""></type>	[dd mm yyyy]	[dd mm yyyy]
Arotakenga   Review	<type here=""></type>	[dd mm yyyy]	[dd mm yyyy]
<b>Kōrero whakakapinga  </b> Replacement information	This skill standard will replace Unit standard 28805 Verify, process and archive hydrometric data and 28807 Present hydrometric data reviews and provide information for users		
<b>Rā arotake  </b> Planned review date	31 December 2030		

Please contact Muka Tangata – People Food and Fibre Workforce Development Council at <u>qualifications@mukatangata.nz</u> to suggest changes to the content of this skill standard.