1XXXXX Undertake discharge measurement by wading

Kaupae | Level	5
Whiwhinga | Credit	15
Whāinga | Purpose	People with this skill standard will be able to conduct streamflow measurements in wadable rivers and streams using velocity-area methods. It includes selecting and preparing appropriate and equipment in conducting discharge measurements in accordance with national standards and worksite procedures. They will also derive, evaluate, and store discharge data and metadata using accepted industry practices. Learners will develop the ability to apply the area velocity measurement methods and ensure quality and traceability of discharge data. 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. Conduct discharge measurement by wading and record results	a. Identify and evaluate appropriate gauging sites based on flow conditions, safety, and data requirements.
	b. Select and verify measurement equipment according to worksite procedures.
	c. Perform and record discharge measurements using velocity-area methods by wading adjusting techniques for field and environmental conditions.
2. Compile discharge results and assess measurement quality	a. Calculate discharge using field data and appropriate software.
	b. Perform quality control checks to validate data accuracy and consistency.
	c. Perform post-deployment inspections, identify descriptions, and apply corrective actions before departing site.
3. File discharge results and associated metadata	a. Store gauging results and field observations in correct formats and designated databases.

Hua o te ako | Learning outcomes	**Paearu aromatawai |** Assessment criteria
	b. Prepare and file metadata including site details, equipment used, and gauging conditions.

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

Assessment specifications:

Learners/ākonga' evidence must be collected 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.

A minimum of 10 discharge gauging's must be performed on separate occasions at no fewer than four sites across a range of different flows.

Gauging's must be conducted using the velocity-area method in accordance with NEMS and worksite procedures.

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

Conduct discharge measurements

- Choose gauging sites for appropriate for platform and method chosen, stable streambed, uniform flow and representative depth.
- Evaluate bank stability, access, flow uniformity and cross-section geometry per NEMS site-survey guidance.
- Prepare equipment: gauging equipment, measuring tape and PPE.
- Conduct instrument checks.
- Conduct a measurement following NEMS and manufactures specification for equipment.
- Measure channel width and depth; establish cross-sectional subsections.
- Record velocities at selected points using standard techniques.

Compile discharge measurements

- Review discharge measurements onsite for discrepancies using appropriate software.
- Compare measured discharge to rating curves.

- Use software to integrate flow components and calculate total discharge.
- Compute discharge measurements and downloaded to appropriate location for processing.
- Process discharge measurements following NEMS.

File discharge results

- Record metadata (site ID, datetime, personnel, methods, serial numbers, QC notes) and archive in NEMS-compliant databases.
- Document metadata: date, time, location, conditions, personnel and methods.
- Store data in hydrometric database with clear filenames and backups.
- Follow NEMS and worksite procedures for data handling and documentation.

Rauemi | Resources

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

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

and any subsequent amendments or replacements.

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa | Standard Setting Body	Muka Tangata – People Food and Fibre 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	**Putanga |** Version	**Rā whakaputa |** Review Date	**Rā whakamutunga mō te aromatawai |** Last date for assessment
Rēhitatanga | Registration	<type here>	[dd mm yyyy]	[dd mm yyyy]
Arotakenga | Review	<type here>	[dd mm yyyy]	[dd mm yyyy]
Kōrero whakakapinga | Replacement information	This skill standard will replace Unit standard 28802 Carry out discharge measurement by wading		
Rā arotake | Planned review date	31 December 2030		

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