



Australian Government

NWPHYD016 Process and report hydrographic time series data

Release: 1

NWPHYD016 Process and report hydrographic time series data

Modification History

Release	Comments
1	These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages. This unit supersedes and is equivalent to NWP509A Collect, verify and report hydrometric time series data. • Unit code updated • Content and formatting updated to comply with the new standards • All PC transitioned from passive to active voice • Unit title changed to better reflect unit outcomes • Elements 1 and 3 all PC reordered • PC 2.3 revised

Application

This unit describes the skills required to compile, interpret, analyse and verify data including water level (streams, lakes), rainfall, groundwater, soil moisture, evaporation, radiation, wind, temperature and electro conductivity. It also describes the skills required to produce hydrometric data reports to support organisational decision making.

This unit applies to hydrographers employed by the water industry and water operators involved in the monitoring of all the elements of the water cycle and their impact on the related environment.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to, particularly those relating to WHS, Bureau of Meteorology, World Meteorological Organisation and Australian Standards.

Those undertaking this unit would work autonomously, supervising staff, while performing complex tasks in a broad range of contexts that could be unpredictable, including remote, confined spaces, near water and/or at heights.

No licensing, legislative or certification requirements apply to unit at the time of publication.

Competency Field

Hydrography

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Prepare for collection of data	1.1 Identify objectives of time series, client's data and reporting requirements. 1.2 Identify parameters and procedures for collection of hydrometric data.
2. Retrieve time series data	2.1 Retrieve and manage data. 2.2 Reset data logger. 2.3 Apply and record field verification checks. 2.4 Complete field documentation.
3. Verify hydrometric data	3.1 Prepare working copy of data. 3.2 Select data to be verified. 3.3 Use standard processes, software, mathematical and scientific techniques to check, edit, verify, adjust and qualify data. 3.4 Review and apply verification information and additional (backup time series) data sets to time series data and identify proposed adjustments to data. 3.5 Use historical data, nearby sites and related parameters to validate data, identify data irregularities and ensure data integrity. 3.6 Estimate failed periods required by client. 3.7 Document checks and adjustments. 3.8 Archive raw and/or processed data.
4. Prepare reports	4.1 Prepare standard reports to check integrity of verified data. 4.2 Prepare client specific reports. 4.3 Prepare verified data, documentation and reports for authorisation. 4.4 File authorised information.

Foundation Skills

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning					Reading					Writing					Oral communication					Numeracy				

Performance variables:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Unit Mapping Information

This unit supersedes and is equivalent to NWP509A Collect, verify and report hydrometric time series data.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

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Assessment Requirements for NWPHYD016 Process and report hydrographic time series data

Modification History

Release	Comments
1	These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages. Assessment Requirements created drawing upon specified assessment information from superseded unit

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- communicating technical information using communication technology with colleagues, management and clients
- assessing the performance and limitations of the monitoring systems and sites employed in monitoring the network/catchment
- identifying and assessing the characteristics of hydrographs and pluviometer traces
- applying analytical tools for hydrographic data
- interpreting and applying technical documentation to the collection, analysis and reporting of hydrographic data
- identifying and responding effectively to operational problems
- using information and data management computer systems
- compiling, analysing, storing, archiving and verifying data
- producing hydrographic data reports to support organisational decision making
- gathering and interpreting complex documentation and applying it to the specification of hydrographic data collection and reporting procedures
- collecting samples
- identifying, reporting and resolving potential and actual problems
- estimating failed periods required by client, using:
 - verification of information
 - historical data
 - nearby sites and related parameters
 - copy and paste
 - applying peak stage level or total stored rainfall checks

- estimation using standard processes and software
- applying and recording field verification checks including at least one of:
 - staff gauge reading
 - well tape check
 - survey level
 - peak level indicators
 - flood marks
 - rainfall storage and/or calibration check
 - EC on-site meter reading
 - groundwater down the casing tape check

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- the hydrographic cycle and its impact on the conditions and objectives of hydrographic time series data management
- measurement methods for collection and checking continuous hydrographic data in the field
- continuous data verification techniques
- mathematical and scientific techniques relevant to the analysis of hydrographic data
- computer software relevant to the analysis and archiving of hydrographic data
- water sampling and testing procedures
- policies and standard operating procedures for data analysis

Assessment Conditions

Competency should be assessed in an actual workplace or in a simulated environment, with access to equipment and infrastructure appropriate to the outcome. Competency should be demonstrated over time to ensure the candidate is assessed across a variety of situations.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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