



Australian Government

NWPHYD005 Process and report hydrographic time series data

Release: 2

NWPHYD005 Process and report hydrographic time series data

Modification History

Release 2: Competency Field changed from Hydrology to Hydrometric Monitoring

Release 1: This is the first release of this unit of competency in the NWP National Water Training Package

Application

This unit involves the skills and knowledge required to process and report hydrographic time series data.

It includes compiling, interpreting, analysing and verifying data including water level (streams, lakes), rainfall, groundwater, soil moisture, evaporation, radiation, wind, temperature and electro conductivity. It also includes producing hydrometric data reports to support organisational decision making, complying with relevant environmental legislation, regulations and workplace policies. Organisational policies and procedures must be consulted and adhered to, particularly those relating to Work Health and Safety (WHS), Bureau of Meteorology, World Meteorological Organisation and Australian Standards.

This unit applies to water operators involved in the monitoring of the elements of the water cycle and their impact on the related environment. Those undertaking this unit would work autonomously, leading staff, while performing complex tasks in a broad range of contexts that could be unpredictable, including remote, confined spaces, working on or near water and working at heights.

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

Pre-requisite Unit

Not applicable.

Competency Field

Hydrometric Monitoring

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare for collection of data

1.1 Identify objectives of time series, stakeholder 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 according to workplace procedures

2.2 Apply and record field verification checks according to workplace procedures

3 Verify hydrometric data

3.1 Complete field documentation and 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 stakeholders

3.7 Check documents according to workplace procedures and incorporate adjustments

3.8 Archive raw and processed data according to workplace procedures

4 Prepare reports

4.1 Prepare standard reports to check integrity of verified data

4.2 Prepare stakeholder specific reports according to workplace procedures

- 4.3 Prepare verified data, documentation and reports for authorisation
- 4.4 File authorised information according to workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Unit Mapping Information

This unit replaces and is equivalent to NWPHYD016 Process and report hydrographic 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 NWPHYD005 Process and report hydrographic time series data

Modification History

Release 2. Minor document layout changes, no content changes

Release 1. This is the first release of this unit of competency in the NWP National Water Training Package

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and includes:

- applying analytical tools for hydrographic data
- applying and recording field verification checks including at least one of:
 - electrical conductivity (EC) on-site meter reading
 - flood marks
 - groundwater down the casing tape check
 - peak level indicators
 - rainfall storage or calibration check
 - staff gauge reading
 - survey level
 - well tape check
- assessing the performance and limitations of the monitoring systems and sites employed in monitoring the network/catchment
- collecting samples
- communicating technical information using communication technology with relevant personnel, management and stakeholders
- compiling, analysing, storing, archiving and verifying data
- estimating failed periods required by stakeholder, using:
 - applying peak stage level or total stored rainfall checks
 - copy and paste
 - estimation using standard processes and software
 - historical data
 - nearby sites and related parameters
 - verification of information
- gathering and interpreting complex documentation and applying it to the specification of hydrographic data collection and reporting procedures
- identifying and assessing the characteristics of hydrographs and pluviometer traces
- identifying and responding effectively to operational problems

- identifying, reporting and resolving potential and actual problems
- interpreting and applying technical documentation to the collection, analysis and reporting of hydrographic data
- producing hydrographic data reports to support organisational decision making
- using information and data management computer systems

Knowledge Evidence

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

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations. Where this is not appropriate, assessment must occur in suitable simulated workplace operational situations reflecting actual workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment currently used in industry
- applicable relevant documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

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