



Australian Government

NWPHYD015 Undertake surveying of monitoring sites

Release: 1

NWPHYD015 Undertake surveying of monitoring sites

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 NWP504A Collect and manage hydrometric station survey 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 • Element 2 all PC reordered and revised • Two new PC added to Element 3 • One new PC added to Element 4 • PC 3.5 reworded • PC 1.1 and 4.1 revised

Application

This unit of competency describes the skills required to use appropriate survey equipment to collect survey data at monitoring sites and to process and manage the data for hydrographic purposes.

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. Plan and assess survey requirements	1.1 Identify the survey objectives and any required standard processes and software. 1.2 Identify the location and value of survey reference marks from maps and plans. 1.3 Choose and justify appropriate survey techniques for specific hydraulic conditions and hydrographic purposes. 1.4 Identify and evaluate the source of levelling errors and misclosures. 1.5 Plan and manage the logistics and personnel to ensure effective outcomes and resource management. 1.6 Apply correct care procedure for storage, transport and use of survey equipment. 1.7 Assess and address WHS issues that may be encountered during the surveying exercise, taking appropriate risk management strategies. 1.8 Apply for and confirm authorisations for entry to property.
2. Operate survey equipment	2.1 Select, set up and prepare survey equipment for use and check level of accuracy. 2.2 Use mathematical techniques to check for correct operation. 2.3 Use suitable survey equipment.
3. Select and survey monitoring sites	3.1 Identify required survey reference benchmarks. 3.2 Establish cease-to-flow level of controlling feature. 3.3 Identify and assess high-flow cross-section and sectional control by survey. 3.4 Survey sections of channels to determine the profile of the channel in the gauging station reach. 3.5 Identify and assess monitoring site survey reference points. 3.6 Establish benchmark and survey to Australian Height Datum. 3.7 Use different surveying techniques.
4. Document survey and data results	4.1 Verify results in corporate database. 4.2 Document and store results.

	4.3 Produce a plot or plan of survey results.
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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 NWP504A Collect and manage hydrometric station survey 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 NWPHYD015 Undertake surveying of monitoring sites

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 two occasions.

- locating features on maps and plans, finding survey reference marks and plotting locations
- preparing, setting up and operating surveying equipment
- preparing and loading surveying equipment for transportation
- maintaining surveying equipment
- preparing and holding staves
- measuring horizontal distance by stadia
- identifying physically survey reference mark
- applying sightings and standard error checks
- gathering and interpreting complex documentation
- applying documentation to the development and maintenance of rating curves
- analysing and verifying data using standard procedures, softwares and databases
- preparing clear and accurate reports
- capturing, storing and archiving data
- identifying, reporting and providing solutions to a range of flow conditions
- using a GPS
- applying appropriate datum and projections
- carrying out collimation test to check accuracy

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.

- mathematical and other scientific techniques relevant to the analysis of hydrographic data
- interaction of physico-chemical parameters of the process being monitored and the impact on data being recorded
- sensor and/or system characteristics and signal processing and/or algorithms, specifically with chemical sensors
- computer software relevant to the analysis and archiving of hydrographic data
- water sampling and testing procedures
- procedures for use of remote contact communication systems

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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