

CONTINUOUS IMPROVEMENT IN THE WATER TRAINING PACKAGE



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INTRODUCTION

Government Skills Australia has wasted no time in responding to issues raised by the water industry about changes needed to the Water Training Package. The updated Water Training Package NWP07 was endorsed at the end of 2007 and is now available for delivery. Registered Training Organisations can now apply to change their scope from NWP01 to allow delivery of the new qualifications. The review was a long and complicated project and there were many frustrations in its progress.

Fortunately, we may not have to go through that again, because all Training Packages are now reviewed through a process of continuous improvement, which means that gradual changes can be made on a regular basis, according to issues identified by industry through networks of advisers and through the issues register on the Government Skills Australia website.

Government Skills Australia has been established to develop and maintain the Water Training Package and it will have responsibility, through the Water Industry Advisory Committee, to manage the continuous improvement process. This has already begun with several projects to develop new competencies and resource material. These projects include:

1. Re-development of the Certificate IV to provide more technical competencies.
2. Development of a Certificate II in Essential Services Operations for remote and indigenous communities
3. Re-development of the Certificate III competencies for dam safety and inspection.

1.0 RE-DEVELOPMENT OF CERTIFICATE IV IN WATER OPERATIONS

In undertaking the review of the Water Training Package (NWP 01) in 2006, the Certificate IV units of competency were not able to be reviewed and updated due to time constraints and the lack of experience in delivering this qualification. The existing units were rewritten into the new template and limited feedback was added to some units along with the addition of new units on Trade Waste and Hydrography. The full review of Certificate IV was flagged as an item to be undertaken under the “continuous improvement” process for the package after its endorsement as NWP 07.

1.1 Urban Water

A working group was established to undertake this review incorporating a number of members of GSA’s Water Industry Advisory Committee (WIAC). Following a teleconference, the task of reviewing the existing Cert IV, urban water and wastewater treatment competencies was allocated to Stephen Wilson and George Wall. The task of reviewing the remaining units and the supply of additional units in specialized areas was allocated to Kim Peterson.

Some preliminary review work on the urban water units of competency was undertaken and a proposal relating to the method for updating and/or development of a number of new units was discussed and approved at the WIAC meeting in Hobart in Nov 2007.

A specialist unit writer was employed to assist with the review and development process and over a three day working period, a number of units of competency were developed or amended. The drafts of these units are now available for feedback from interested parties including operators and training providers.

Table 1: Summary of Proposed Changes

Unit Number	Title	Comments
NWP 426B	Coordinate and monitor the operation of potable water systems <i>Change to:</i> Investigate and report on the optimisation of potable water distribution systems.	Although the original proposal was only to change the name, the content of this Unit was amended to suit the Certificate IV level competencies and outcomes required. It was considered that much of the existing content was at Cert III level.
NWP 435B	Coordinate and monitor the optimisation of water treatment processes <i>Change to:</i>	This is a whole job and not a Unit of Competence. Propose to delete this unit and break it into a number of new smaller, more specific process based units
NWP 4??A	Apply principles of chemistry to water industry processes	
NWP 4??A	Investigate and report on the optimisation of granular media filtration processes	
NWP 4??A	Investigate and report on the optimisation of dissolved air flotation processes	
NWP 4??A	Investigate and report on the optimisation of sedimentation and clarification processes	
NWP 4??A	Investigate and report on the optimisation of chemical addition, coagulation and flocculation processes	
NWP 4??A	Select the treatment requirements for waterborne microorganisms	
NWP 436B	Coordinate and monitor the optimisation of wastewater treatment processes <i>Change to:</i>	This is a whole job and not a Unit of Competence. Propose to delete this unit and break it into a number of new smaller, more specific process based units
NWP 4??A –	Investigate and report on the optimisation of activated sludge processes	
NWP 4??A	Investigate and report on the optimisation of anaerobic treatment processes Select strategies to control microbial impact on wastewater treatment processes	

NWP 4??A	Contribute to the implementation and continuous improvement of quality systems in the water industry	Proposed new unit to cover the range of Quality Management and ISO systems now regularly being implemented
MEM30027A	Prepare basic programs for programmable logic controllers	It is proposed that these two Units from other Packages be considered for inclusion into the list of Water Industry Units. These units provide for skills at the level required by the Water Industry.
MCMT461A	Facilitate SCADA systems in a manufacturing team or work area	

Other Considerations

There is scope for the development of the following units:

- energy and resource conservation
- budget preparation
- sustainability issues
- a specialist high level maths unit (Cert III level). One such unit – “*TDTE597B – Carry out basic workplace calculations*” exists within another training package.

1.2 Hydrography and On-Site Treatment

Some areas identified as gaps during the scoping phase of the 2006 review, such as liquid trade waste and hydrography, had considerable work done on them (one more successful than the other). Others, such as on-site sewage and design of collection and distribution systems, were ignored.

The identified issues included:

- The Certificate IV was a major priority for continuous improvement
- Hydrography needed much more work to fully cover industry needs, and the National Water Initiative coupled with new responsibilities for the Bureau of Meteorology under the National Water Act, made this a priority.
- Others, such as Liquid Trade Waste, had been adequately covered and had been well accepted by management in that sector.
- Some areas, such as on-site sewage, needed to be revisited, and those components which truly fell within the sphere of the “water industry” needed to be accommodated.
- Supervisor training needed closer consideration.
- The career path for those operators who wished to stay as advanced skills operators, particularly in the treatment sector, but with increased skills and responsibilities needed closer examination. The development of specialised knowledge and skills for advanced treatment processes and their optimisation. One concern here was the need to ensure that proposed new units of competency properly captured the way in which knowledge needs to be applied to issues in the workplace; that is the sometimes contentious area of “knowledge units”

Table 2: Proposed AQF4 units

NWP4xxA	Investigate and report on the optimisation of activated sludge processes
NWP4xxA	Investigate and report on the optimisation of anaerobic treatment processes
NWP4xxA	Apply knowledge of chemistry to water industry processes
NWP4xxA	Control and optimise the operation of chemical addition, coagulation and flocculation processes
NWP4xxA	Investigate and report on the optimisation of dissolved air flotation processes
NWP4xxA	Control, coordinate and optimise the operation of granular media filtration processes
NWP4xxA	Investigate and report on the optimisation of sedimentation and clarification processes
NWP4xxA	Select the treatment requirements for waterborne micro-organisms
NWP4xxA	Contribute to implementation and continuous improvement of quality systems in the water industry
NWP4xxA	Select strategies to control microbial impact on wastewater treatment processes
NWP4xxA	Select the treatment requirements for waterborne micro-organisms
NWP4xxA	Apply principles of hydraulics to pipe and channel flow
NWP439A	Develop and maintain rating curves
NWP4xxA	Collect, measure and process hydrometric discharge gauging
NWP4xxA	Monitor water quality in urban and rural catchments
NWP4xxA	Collect and evaluate hydro-meteorological data
NWP4xxA	(land surveying and mapping)
NWP437B	Analyse data and produce hydrometric reports
NWP4xxA	Coordinate, implement and report on on-site sewage management monitoring procedures
NWP4xxA	Investigate and report on on-site sewage management performance and incidents
NWP4xxA	Evaluate on-site sewage management system options

1.3 Comment on Scope of Changes Proposed for Certificate IV

The first 11 units in Table 2 address requirements for an ‘advanced’ operator and involve optimisation, troubleshooting/problem solving and the application of theoretical knowledge to water industry processes.

The aim of these units is to allow operators to grow in their jobs and to specialise as ‘technical experts’ who are working autonomously in running, optimising and problem solving on their plant. This is exactly in keeping with the distinguishing characteristics of a Certificate IV level qualification.

Something that is yet to be fully tested is the effect these units might have on packaging rules. It may be that a greater number of elective units than currently specified may be required to adequately define the job role.

The next seven units in Table 2 relate to the Hydrographers. It may not be possible here to fully define the job role within the current requirement of 7 elective units. What has been achieved with these additional units is the complete specification of the roles of Hydrographers. There is some variation in the role of Hydrographers and for any one job role 7 electives may be sufficient. This has yet to be fully tested.

The last three competencies in Table 2 relate to on-site sewage management, and while there is some debate as to 'which side of the fence' this job function sits on, this regulatory role is much akin to that of the trade waste inspector, and whilst both functions might be seen to be 'on the other side of the fence' (and hence a plumbing rather than a water issue), there is increasing agreement that both the trade waste inspector and on-site sewage inspector are part of the water industry. The issue of installers and maintainers of trade waste treatment plant and on-site treatment plant is one that has not been adequately addressed as yet. This is another area that does not have adequate Training Package coverage at present and it may well be that these areas are also seen as ones that should be brought under NWP07 coverage.

The final issue at Certificate IV currently under consideration is that of supervision. One issue will be whether or not new units need to be developed or listed in NWP07 or if units from other packages are suitable and the current limit of 3 imported units is sufficient. Considerations here may also impact on the packaging rules.

Government Skills Australia invites interested operators working at this qualification level as technical specialists to use the WIOA or GSA website to check the drafts and give feedback.

2.0 DEVELOPMENT OF A CERT II IN ESSENTIAL SERVICES OPERATIONS

A qualification for operators of water and energy services in remote and Indigenous communities was removed from the Electrotechnology Training Package, meaning that at the end of 2008 there would be no relevant qualification for operators in these communities.

A project Steering Committee with membership from Western Australia, South Australia, Queensland and Northern Territory met in Darwin in February 2008 and identified the work functions of Essential Services Operators. The meeting recommended that the name of the qualification should be **Certificate II in Community Essential Services Operations**, and that the project should focus on the water component of the work.

The work roles were then prepared in the form of customisations of selected units of competency from the Certificate II in Water Operations and distributed for feedback. A draft qualifications framework was prepared and distributed for feedback.

The ten units customised consist of:

NWP201B	Use safe work practices
NWP226B	Maintain work sites
NWP227B	Control vegetation on a site
NWP218B	Perform and record sampling
NWP260A	Monitor and report water treatment processes
NWP261A	Operate and maintain water treatment plant and equipment

NWP257B	Maintain and repair wastewater collection systems
NWP263A	Operate and maintain wastewater treatment plant and equipment
NWP272B	Monitor, operate and report on wastewater lagoon processes
NWP243B	Operate bore fields and groundwater source systems

The customisations of these units of competency, with the exception of Perform and record sampling and Control vegetation on a site – which seem to be very generic, will have new codes and titles which reflect the community focus of the work. Operate bore fields and groundwater source systems can be customized but the committee needs feedback on whether the original unit can be used if operating bore fields in communities requires the same skills as operating bore fields in any location.

The Steering Committee will meet again in June to determine the final composition of the qualification, and look at learning resources for delivering the qualification in remote communities.

3.0 RE-DEVELOPMENT OF CERTIFICATE III DAM SAFETY AND INSPECTION UNITS OF COMPETENCY.

During the review of the Water Training Package in 2006 – 2007, feedback was received by the project management on the need to restructure the unit of competency on inspection and monitoring of dams to clearly distinguish between the skills required for working with concrete dams and with embankment dams. Unfortunately, little progress was made on this proposal during the review, and GSA received a request to meet with major stakeholders in training for dam safety.

At the initial meeting of the Project Steering Committee in December 2007, the single unit of competency of dam inspection was split into three:

- Conduct and report dam safety monitoring
- Inspect and report on concrete dam safety
- Inspect and report on embankment dam safety

The final drafts of the units of competency will need to be endorsed by the Water Industry Advisory Committee. It is expected that this new version will be available for training delivery by June, 2008. It is anticipated that the units of competency will form skills sets which can be used for authorising dam safety operators if this is determined by the industry.

For all information about these proposed changes, and to register your interest and provide feedback, check the Government Skills Australia website:

www.governmentskills.com.au