

Title	Explain single point groundwater control, pump systems and disposal methods for an infrastructure works excavation		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: explain single point groundwater control; describe pump systems for dewatering; and explain disposal methods for water pumped from an infrastructure works excavation.
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Classification	Infrastructure Works > Pipeline Construction and Maintenance
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.
- 2 Legislation relevant to this unit standard includes Health and Safety at Work Act 2015 and subsequent amendments.
- 3 Definitions
Industry requirements refer to relevant policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, site safety plans, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, procedural documents, Waka Kotahi New Zealand Transport Agency specifications and guidelines.
Single point pumping refers to removing groundwater from one location as opposed to well pointing that draws water from multiple well points drilled into the ground. Single point pumping may or may not be located in a trench.

Outcomes and performance criteria

Outcome 1

Explain single point groundwater control for an infrastructure works excavation.

Performance criteria

1.1 Groundwater control is explained in terms of dewatering an excavation using single point pumping.

Range explanation may include but is not limited to – soil type, ground condition, effect of dewatering on excavation stability, grade, depth, type of excavation, pipes and/or structures, timeline, urgency.

Outcome 2

Describe pump systems for dewatering for an infrastructure works excavation.

Performance criteria

2.1 Pump systems are described in terms of their characteristics and capabilities.

Range pumps – reciprocating positive displacement, rotary positive displacement, rotary dynamic (centrifugal), linear or reciprocating dynamic;
evidence of two pumps is required;
characteristics and capabilities include but are not limited to – suction conditions, submersibility, head lifts, water pressure, flow velocity, discharge capacity, viscosity handling, solids handling, sand handling, motive power, noise.

2.2 Pump systems and their associated hoses and fittings are described in terms of their suitability for specified dewatering tasks in infrastructure works.

Range tasks may include but are not limited to – in trench single point, out of trench single point (hose in trench, remote well), well-pointing, spray dispersal.

2.3 Measures to avert risk of damage to pumps and hoses or leads for dewatering in infrastructure works are described.

Range risks include but are not limited to – grit against impellers, dry-running, lifting pump by lead, damage from mobile machinery and other traffic.

2.4 Hazards associated with use of pump systems for dewatering in infrastructure works are described in terms of their control.

Range hazards include but are not limited to – carbon dioxide from fuel powered pumps, missing or damaged trash pump guards, manual handling.

2.5 Environmental protection considerations when using a pump system are described.

Outcome 3

Explain disposal methods for water pumped from an infrastructure works excavation.

Performance criteria

- 3.1 Disposal methods are explained in terms of relative contamination of the removed water, equipment and/or structures used, and regional and local authority environmental requirements.

Range evidence of three disposal methods is required.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 August 2021	N/A

Consent and Moderation Requirements (CMR) reference	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Connexis - Infrastructure Industry Training Organisation qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.