

DROP-OUT PIT

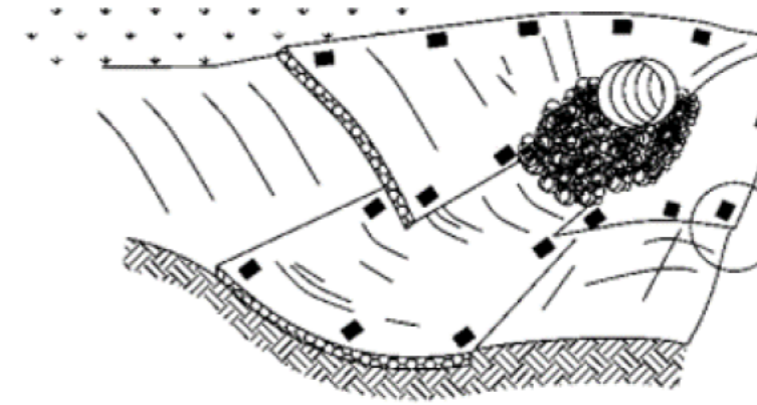
Page 45 from GD05



- Drop out pits should be one metre deep by one-metre-wide cube.
- As a contingency measure, drop out pits can be increased in size and lined to prevent any scour of the pit.

CULVERT

(Diagram from TP90 – now GD05)



- To be non-perforated concrete, PVC or plastic drainage coil.
- The culvert should consist of a 300 mm PVC or farm-grade culvert to allow for heavy haul vehicles to traffic over.
- Geofabric and rock should be placed at the outlet to prevent scour from the higher velocity water exiting the culvert.

TRAFFICABLE SWALE

Image - Enviroscope

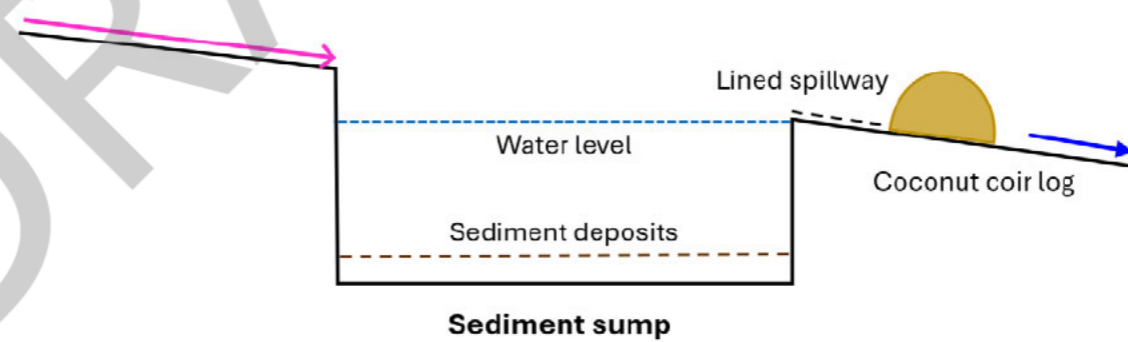


- Trafficable swales should be constructed by mounding and compacting soil diagonally across the road to direct sheet flows, mimicking predevelopment flow regimes.
- Trafficable swales shall have a drop out pit and coconut coir log installed at the outlet during construction, to reduce water velocities and capture sediments.
- Rock-lining may need to be added if the swale structure is continuing to degrade by trafficking.

SEDIMENT SUMP

Image - Enviroscope

Dirty water diversion channel

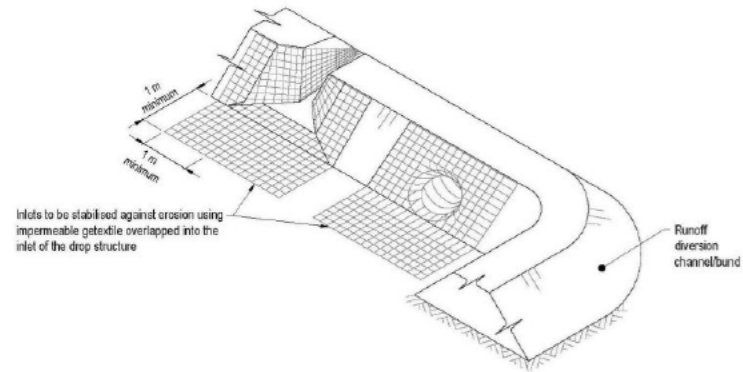
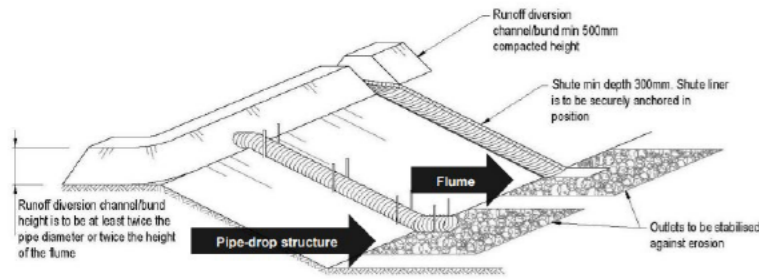


- Sediment sumps shall be formed to dimensions of 2.0 m W x 2.0 m L x 1.0 m D at the termination of the corresponding DWDC.
- A spillway is to be constructed to convey any overtopping water from the sediment sump to the coconut coir log. The spillway is to be lined with geofabric and secured to avoid erosion and undercutting.
- Sediment sumps are to be cleaned out once they reach 20% capacity, and free-draining soils (if any) are exposed.

Drawn	Approved	Date	Drawing Number	Version
KB	TG	14/05/2026	ESCP - 019	1

PIPE DROP STRUCTURE

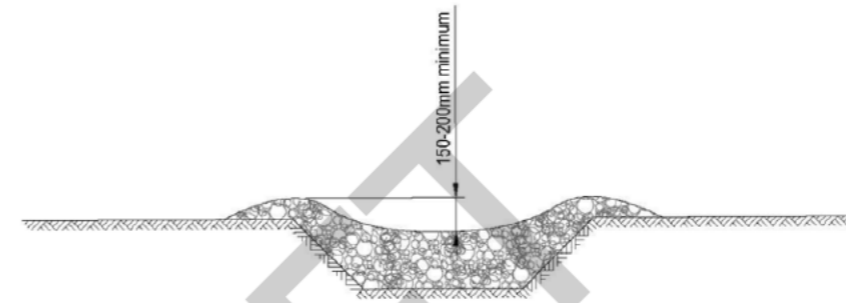
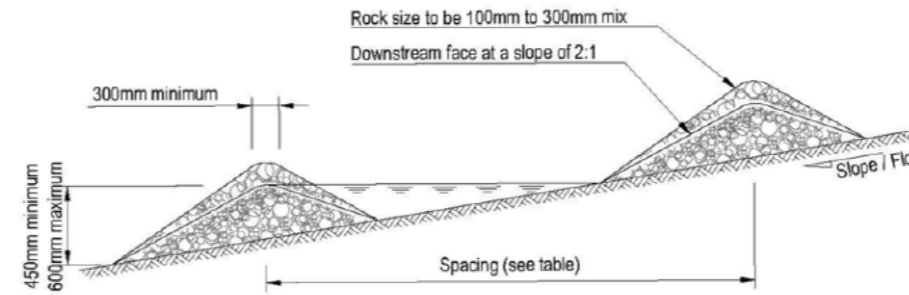
Page 55-60 from GD05



- Ensure the height of the bund is 2x the pipe of flume diameter.
- Attach a 110 mm flume or pipe into the bund.
- The drainage coil will be unpunched and ensure all connections are water tight.
- The inlet to the flume or pipe will have a one metre long stabilised apron on a 3% grade.
- The flume or pipe will be pinned every four metres to anchor it. There will be no less than two anchors equally spaced along the length of the flume or pipe.
- Ensure the slope the flume or pipe directs flows down is steeper than 3:1.
- Ensure the flume or pipe extends beyond the toe of the slope and the outlet is stabilised with geofabric or rock rip rap to avoid downslope scouring.
- The pipe drop structure or flume will be monitored and maintained regularly to ensure it operates effectively.

CHECK DAMS

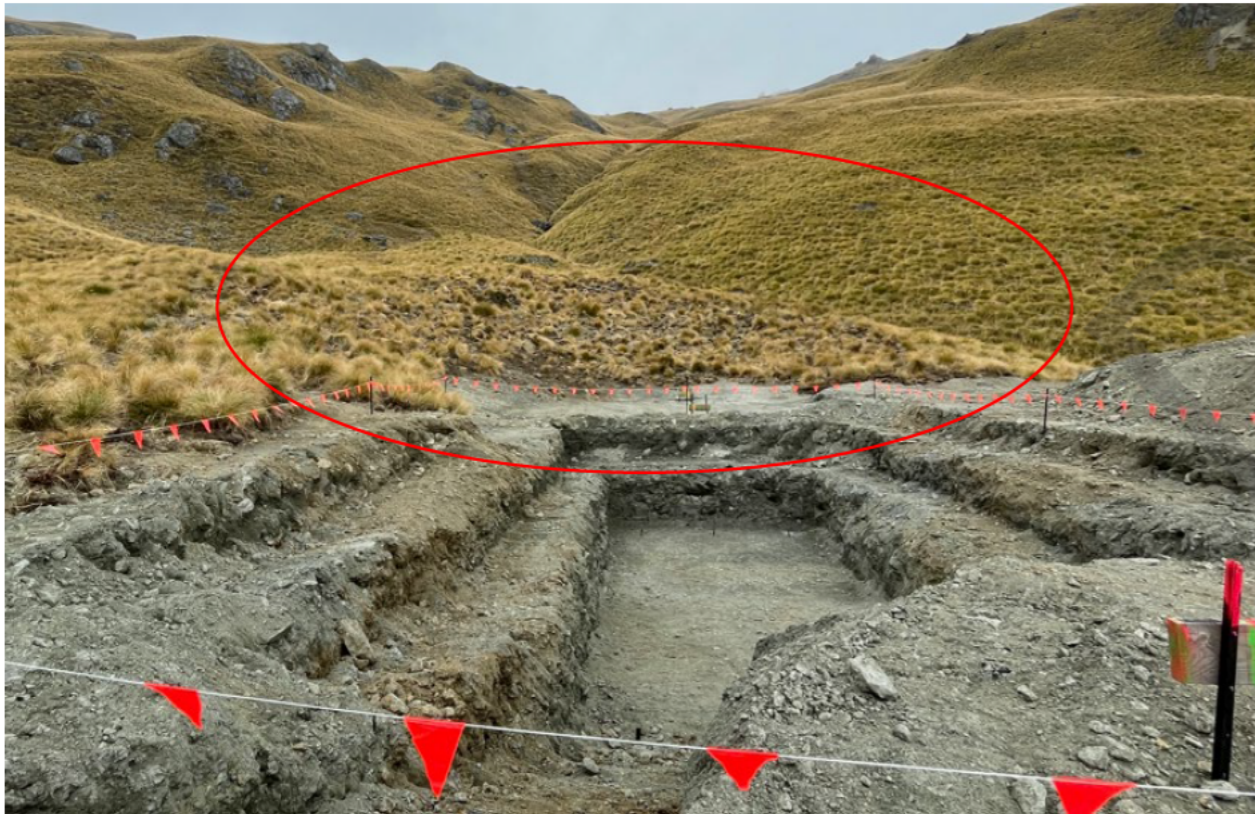
(Page 50-54 from GD05, Image - Enviroscope)



- Check dams will be constructed out of 100 – 300 mm site won rock
- Check dams should be 50-100 mm lower than the outside edges of the DWDC to form a spill way.

CUT AND COVER

Image – Enviroscope



TRENCHING

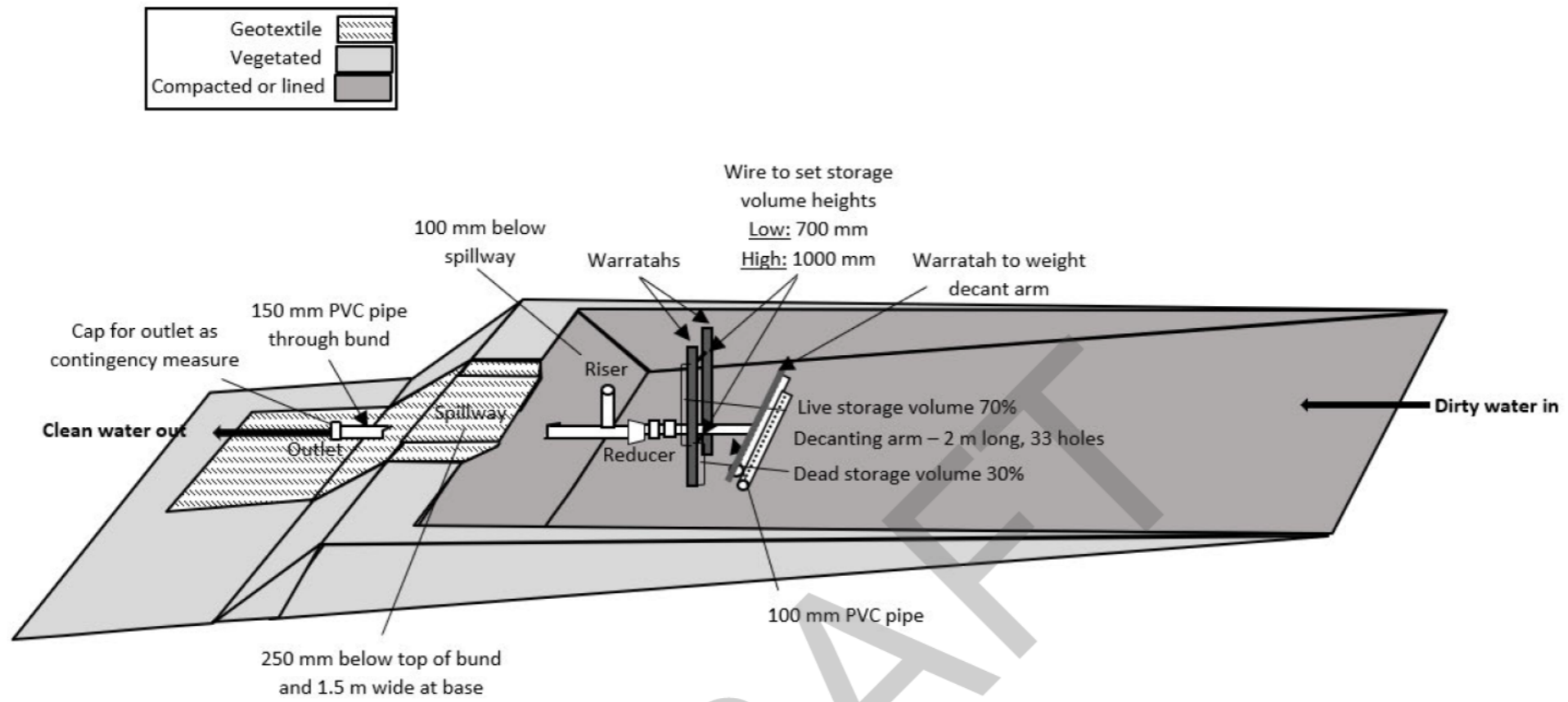
Image – Enviroscope



- Trench alignments should only extend as far as it can be backfilled and restabilised within 24 hours of a forecast significant rainfall event.
- Carefully strip topsoil and vegetation, maintain plant root structure and place upslope of the trench alignment.
- Dig the trench alignment and place subsoil away from the vegetation and topsoil.
- Existing vegetation is to be carefully placed outside of alignment and placed back over the backfilled trench.

DECANTING EARTH BUND

Page 106-112 from GD05



- Sizing and Calculations TBC with detailed design.

TURKEY NEST

Image - Enviroscope



- Turkey nests should be constructed utilising sandbags wrapped in geotextile material with the dimensions of 2000 x 1500 x 500 mm (L x W x H). The geotextile should consist of non-woven needle-punched geotextiles and manufactured from the extrusion of polymer fibres which are then laid down on a manufacturing 'bed'. They are then needle punched to entangle the threads, resulting in a permeable, yet dimensionally stable product which provides filtration.
- Hay and straw bales to be avoided to prevent the spread of exotic seeds to the site.
- Ensure geofabric lining is appropriately secured.
- To be cleaned out once 20% capacity reached.

SPLASH CROSSING

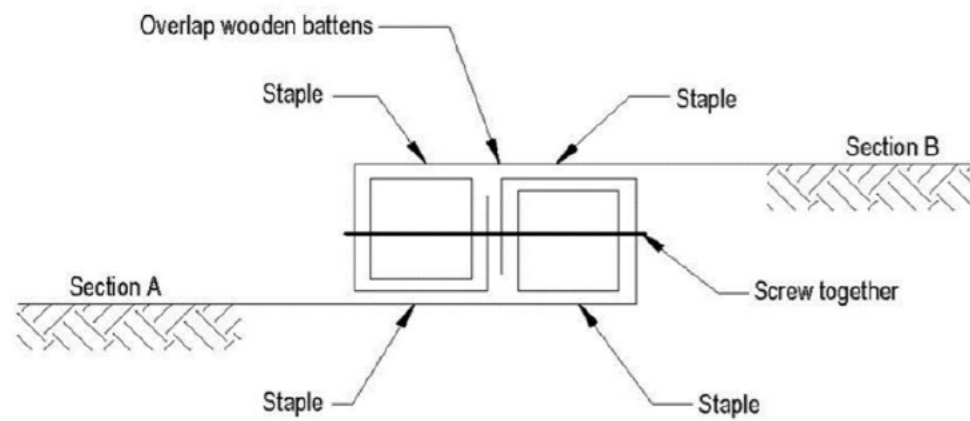
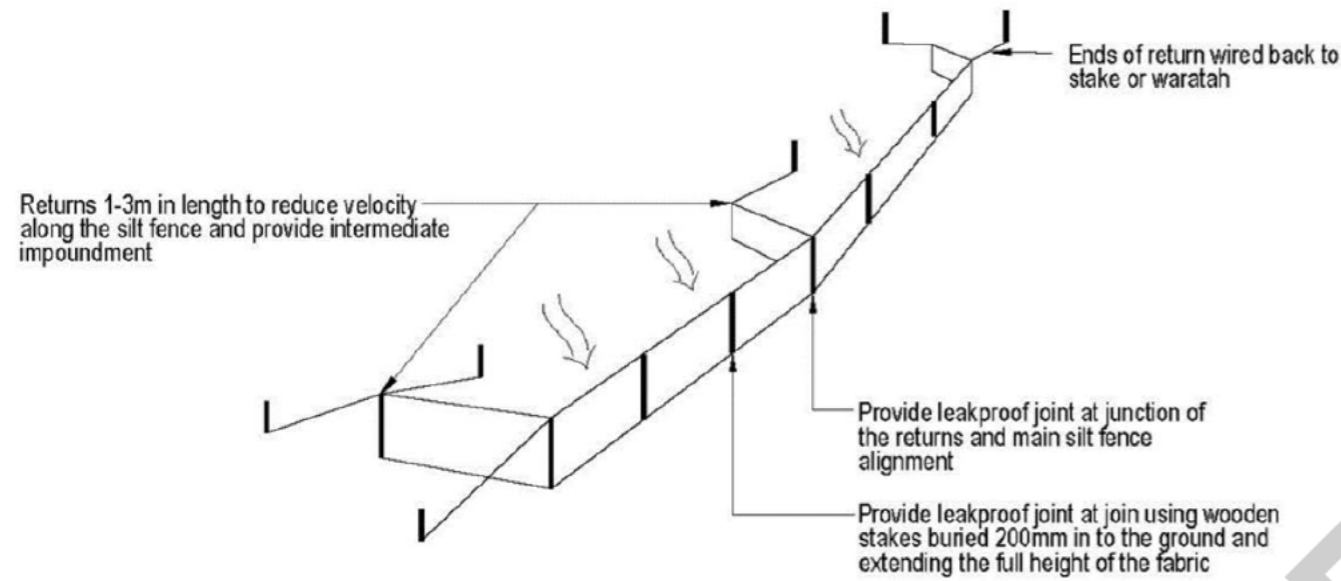
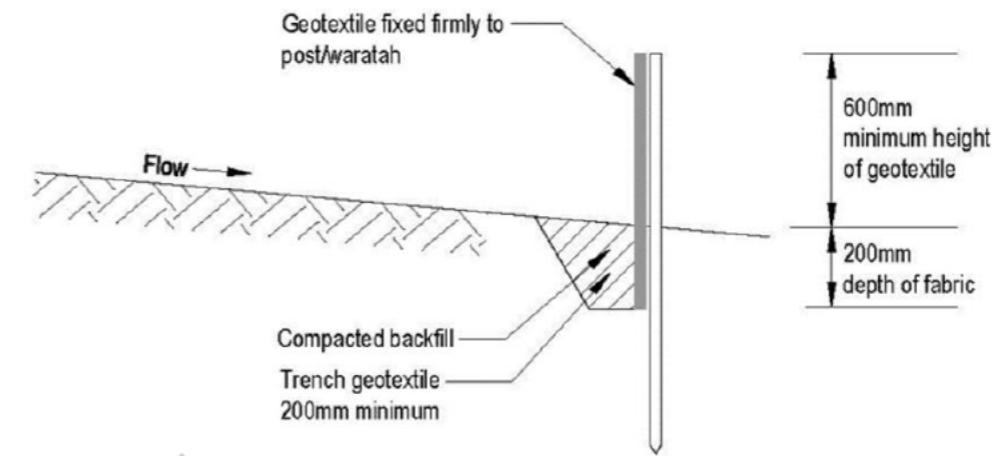
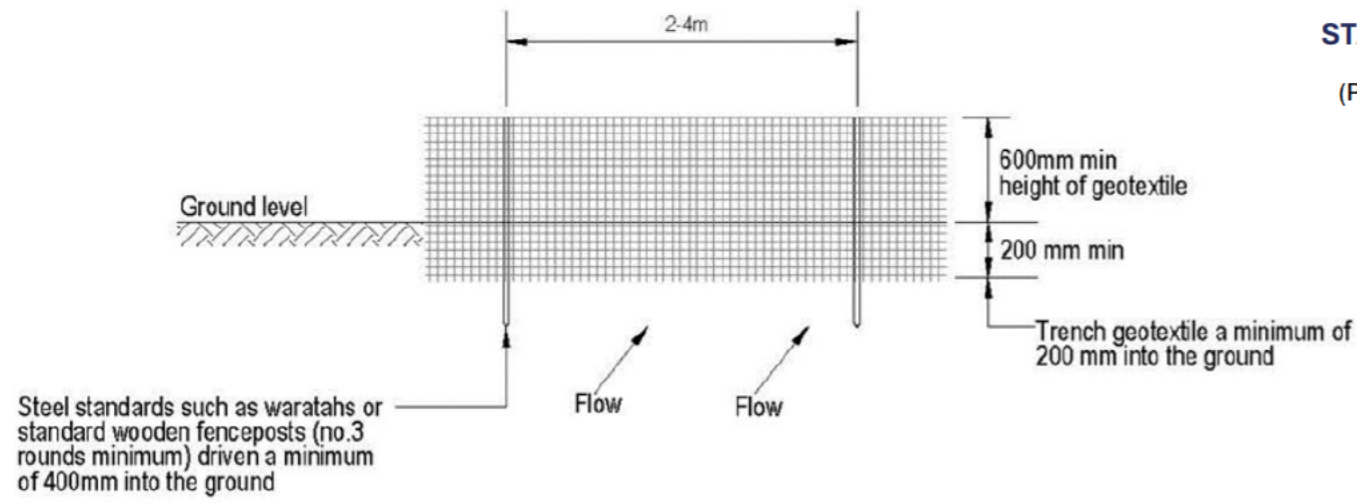
Image - Stantec



- Splash crossings will be rock lined using site won rock and mimic the existing bed of water bodies they intersect.
- Splash crossings maintain hydrological continuity, reduce blockage risk, and minimise long-term maintenance requirements in alpine conditions

STANDARD SILT FENCE

(Page 112-119 from GD05)

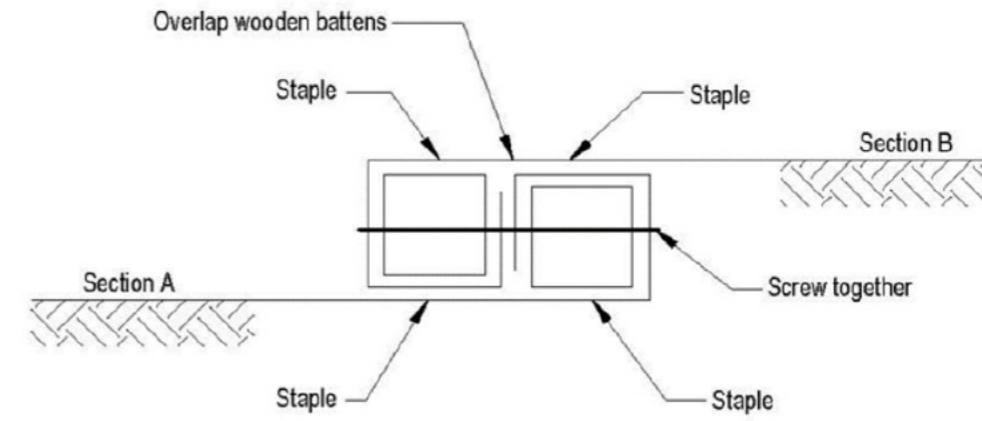
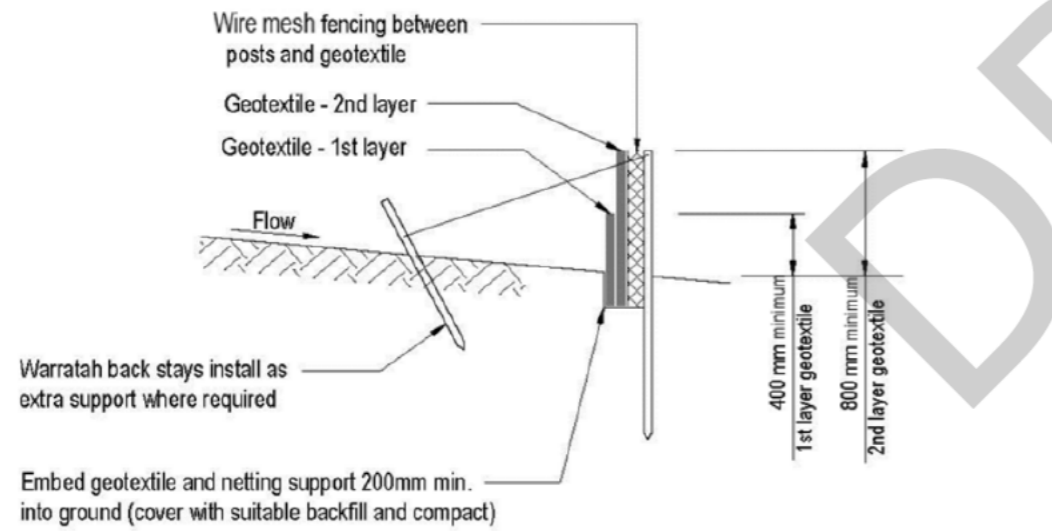
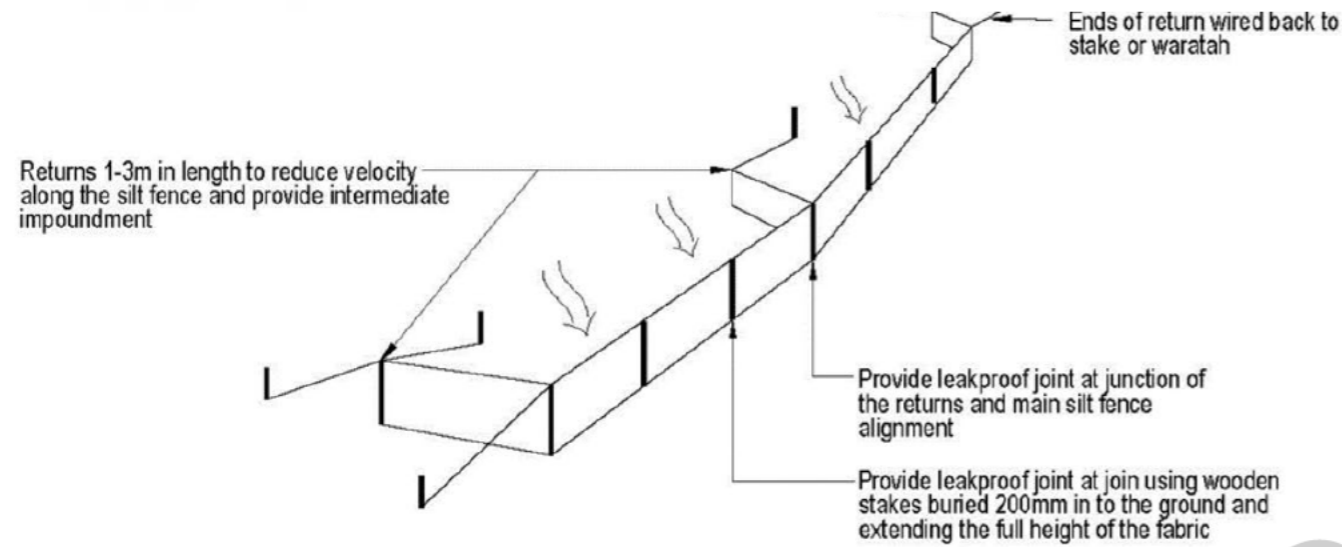
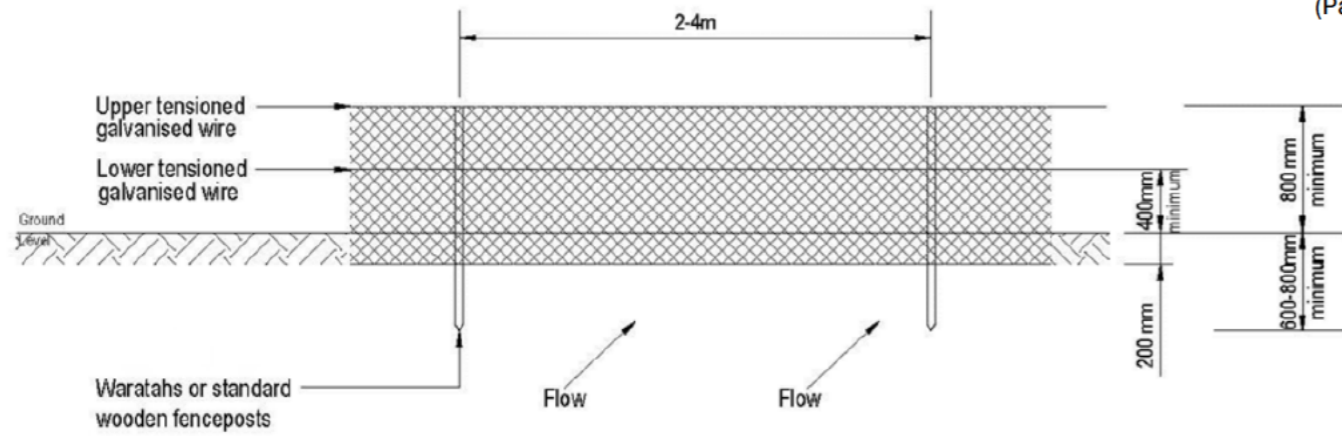


Slope steepness (%)	Slope length (m) (maximum)	Spacing of returns (m)	Silt fence length (m) (maximum)
Less than 2%	Unlimited	N/A	Unlimited
10%	40	60	300
10-20%	30	50	230
20-30%	20	40	150
33-50%	15	30	75
Greater than 50%	6	20	40

- Ensure the silt fence is 'keyed' into the ground to form a good seal at ground level to capture water and avoid undermining.
- Silt fences should be 600 mm above ground level and 200 mm below ground level.
- Supporting waratahs should be placed at 2-4 m intervals.
- Install silt fence returns at either end of the silt fence, projecting up-slope to a sufficient height to prevent outflanking.
- It is also important that silt fences are installed along the contour of the slope to prevent ponding of water in a concentrated area of the fence.

SUPER SILT FENCE

(Page 120-125 from GD05)



Slope steepness (%)	Slope length (m) (maximum)	Spacing of returns (m)	Silt fence length (m) (maximum)
0- 10%	Unlimited	60	Unlimited
10- 20%	60	50	450
20- 33%	30	40	300
33- 50%	30	30	150
Greater than 50%	15	20	75

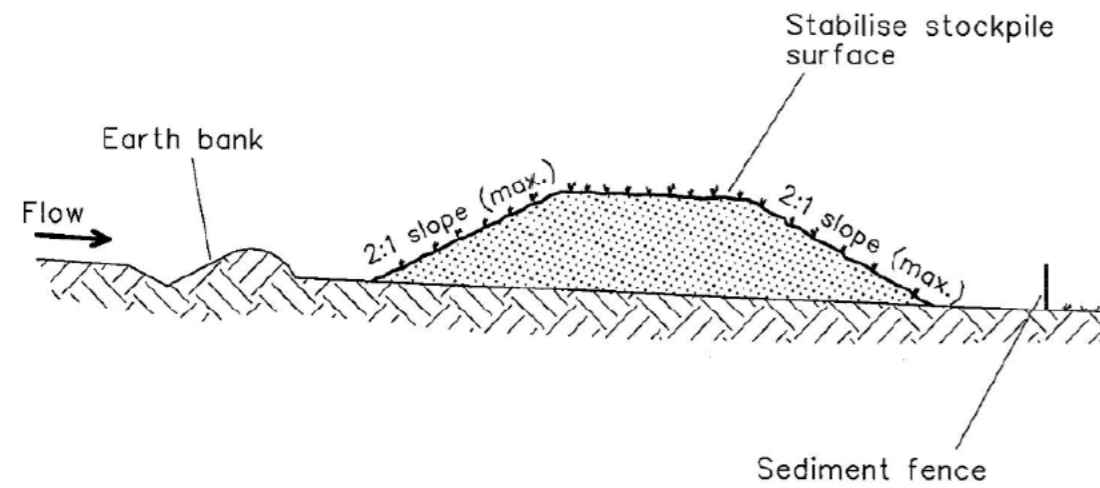
- The super silt fence should be 800 mm above ground level and a minimum of 200 mm below ground level.
- The anchoring of the silt fence should ensure stability and the double layered geotextile should provide for drop-out prior to any water filtering through the upper portions of the fabric.
- It is imperative that the front face of the fence follows the contour as close as possible to ensure the designed holding capacity is achieved and to avoid creating pressure points on the fence.
- Supporting waratahs should be placed at 2-4 m intervals.
- Returns will be installed as per the table above. Install silt fence returns at either end of the silt fence, projecting up-slope to a sufficient height to prevent outflanking
- Stays to be installed with silt fence to provide additional structural support.

TEMPORARY STOCKPILES

Image - GD05

COCONUT COIR LOGS

Page 126-130 from GD05



Slope steepness (%)	Slope length (m) (maximum)	Spacing of returns (m)
Less than 2%	100	N/A
2-10%	40	30
10-20%	30	25
20-33%	10	10
33-50%	5	10
Greater than 50%	2	5

- Temporary stockpiles should be a maximum height of two metres to mitigate wind effects and to preserve the quality of the topsoil as future planting media for revegetation.
- If the stockpile is to be left insitu for a period of 4 week or more a silt fence should be installed on the downslope side of the stockpile.

- Coir logs should be placed within the DWDCs to reduce in-channel flow velocity and allow the capture of any residual sediment that infiltrates into 'clean' flows.
- Ensure coir logs are secured with waratahs and/or rope and pegs so that logs make firm contact with ground level, preventing water from flowing underneath.

REFUELING



- Locate the hardstand as far as practicably possible from waterways and concentrated flows.
- Ensure spill kit is located nearby.

CONCRETE WASHOUT PIT



- The concrete wash out pit consists of a plastic-lined bunded pit constructed with fill or straw bales.
- After concrete washout any water shall be left to evaporate.
- Curbed concrete is to be disposed of within the plastic sheet to a licensed facility.

SPILL KITS



- Spill kits should be located in the laydown area.
- Spill kits should be located in all of the plant on site.

WASTE



- Where possible, waste shall be segregated into labelled bins.
- Wastes on site will be suitably contained and prevented from escaping off site. This may include covering skip bins during high winds.
- Waste storage is not permitted in or near drainage paths.
- Waste will be removed from site when the bin is full.

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ENVIRONMENTAL SITE INDUCTION HANDOUT

Key Roles and Responsibilities

Roles	Responsibilities
Project Manager	<p>The Project Manager is responsible for the effective implementation of the CEMP and has overall responsibility for the environmental performance of the project. Duties include:</p> <ul style="list-style-type: none"> • Ensuring adequate resources are in place to implement the CEMP. • Ensuring all staff and sub-contractors operate within the guidelines of the CEMP. • Ensuring that a CEMP is prepared, and that environmental standards, processes and procedures meet relevant resource consent conditions. • Overseeing the successful implementation, monitoring and review of the CEMP. • Ensuring that inspections are carried out in accordance with the relevant CEMP. • Restricting or stopping any activity that has the potential to or has caused adverse environmental effects. • Providing notification and reporting Environmental Incidents to Council and other environmental reports as required by The Guidelines. • Delegating authority of the above responsibilities.
Environmental Representative	<p>The Environmental Representative supports the Project Manager in the day-to-day implementation of the CEMP. Duties include:</p> <ul style="list-style-type: none"> • Ensuring the installation of environmental controls as per the CEMP. • Undertaking environmental inspections. • Overseeing the maintenance and improvement of defective environmental control • Providing environmental instructions to all staff and sub-contractors. • Supporting the project leadership in attending to Environmental Incidents and Complaints. <p>The Environmental Representative shall be familiar with environmental risks associated with the project, the CEMP and best practice erosion and sediment control principles and practices.</p>
All staff and sub-contractors	<p>All staff and sub-contractors have a responsibility to undertake all activities in accordance with the requirements of this CEMP. This includes reporting any activity that has the potential to or has resulted in an Environmental Incident to the Project Manager or Environmental Representative.</p>

ENVIRONMENTAL RECEPTORS

Any work that disturbs the controls outlined on the ESCP must be reinstated before moving to the next task.

Environmentally sensitive receptors: Staff members working on the site, overland flow paths, wetlands, surrounding flora and fauna, and recreational users of the surrounding DOC land

ASSOCIATED RESOURCE CONSENTS

All resource consent conditions of TBC (issued by QLDC, CODC, & ORC) are important to comply with in order to avoid or mitigate adverse environmental effects.

The site CEMP has been prepared in response to all environmental-related conditions of consent and therefore provides directions for how compliance with these conditions will be achieved. Provided that the CEMP is followed, the project will at the same time comply with all conditions of consent.

SEQUENCING

The sequencing of works is a key component to ensure that the environmental effects of construction are appropriately managed. It is imperative that the sequencing outlined in **Section 2.0** of the CEMP is followed so that the site is stabilised in the most efficient manner.

All staff should be familiar with this sequence. Any potential change to that sequence need to be approved by the Project Manager, which will be discussed first with the Environmental Consultant.

KEY ENVIRONMENTAL MANAGEMENT MEASURES IN CEMP

Erosion and Sediment Control (Section 4.0 of CEMP)

- Direction provided in Erosion and Sediment Control Plan (ESCP) in **Appendix 1** Erosion and Sediment Control Plan of the CEMP
- Separation of clean and dirty water – the most important principle to ensure that the contributing catchment of dirty water that needs to be treated is as small as possible.
- Progressive stabilisation (vegetation) of disturbed areas will ensure that the extent and duration of exposed soil is minimised. Keep it covered!
- All controls to be checked immediately before storm events to ensure they are in good-working order.
- Erosion and sediment control devices to remain in place until site is stabilised (defined as 80% vegetative cover).

Water Quality Management (Section 5.0 of CEMP)

- Any water caught in the sediment devices to be re-used in dust suppression where possible and if required.
- Complete water quality monitoring and sampling as per resource consent requirements.
- Any observations of dirty water running offsite to be reported directly to the Project Manager.

Dust Management (Section 6.0 of CEMP)

- Dust suppression should occur on any exposed soil on unsealed roads.
- Avoid all unnecessary vegetation clearing that exposes soil and work should be conducted in stages as this can increase the impact from dust in the event of strong winds.
- During high wind events and dust suppression is becoming difficult works must cease until more favourable weather conditions.
- Constant vigilance should be maintained onsite to ensure that dust is appropriately managed and weekly monitoring should be completed to ensure that management measures are effective.

Noise and Vibration Management (Section 7.0 of CEMP)

- Noise producing works only be undertaken during the hours of 0730-1800 from Monday-Saturday and no works are to be undertaken on Sundays or public holidays.
- Particularly noisy work should be completed during the middle of the day during business hours.
- Noise dampening should occur when possible.
- Weekly site inspections should be undertaken by the Environmental Representative to ensure the strategies in place are effective.

Cultural Heritage Management (Section 8.0 of CEMP)

- If any artefacts are found, works must stop within 10 m of the discovery, and the site manager is to be notified immediately.
- The site manager must then secure the area and notify the Heritage New Zealand Regional Archaeologist, who will advise when works can begin again.

Vegetation Management (Section 9.0 of CEMP)

- Maintain vegetated surfaces as far as reasonably possible.
- Maintain protected or significant vegetation.
- Complete all land shaping and / or ecological restoration in accordance with approved plans.

Chemicals and Fuel Management (Section 10.0 of CEMP)

- Chemicals and fuels be stored and used so not to cause contamination of works areas and surrounding environment.

Waste Management (Section 11.0 of CEMP)

- Waste management on site will ensure waste is stored safely and in an organised manner until recycling, reuse or disposal.

Contaminated Land Management (Section 12.0 of CEMP)

- Prevent spread of contamination.
- Engage the Environmental Consultant (SQEP) to ensure that the site can be managed in accordance with statutory requirements (i.e., National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health).

ENVIRONMENTAL INCIDENTS

The procedure for managing environmental incidents is outlined in **Section 3.5** of the CEMP, however, these can be summarised as follows:

- Environmental incidents must be reported as soon as they occur, and the Project team must respond immediately to mitigate further environmental impacts.
- Investigation into the cause of the incident should be completed and a solution should be constructed to remediate the Environmental damage.
- The Project Manager must then notify the QLDC and ORC of the details of the incident within 12 hours of being made aware of the incident.

RAPID RESPONSE FOR STORM EVENTS

The procedure for rapid response to storm events is outlined in **Section 3.7** of the CEMP, however these can be summarised as follows:

- The Project Manager will observe and understand the **weather forecast** throughout the project to ensure appropriate preparation onsite.
- If a **significant storm** event is forecast all works should stop with an appropriate amount of time to inspect ESC devices and undertake any maintenance or site stabilisation required.
- The sediment controls should be in operating condition and fully functional.

During the storm event the site should be monitored to ensure the functioning of the ESC devices and maintained if required.

When storms are forecast it is crucial that tools are downed in time for the rapid response procedure to be implemented. This will help avoid environmental incident potential enforcement action and site shutdown.

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ENVIRONMENTAL SITE INDUCTION REGISTER

Name	Organisation	Date Inducted	Induction Delivered by	Signature

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WEEKLY ENVIRONMENTAL SITE INSPECTION FORM

Environmental Representative:

Date:

Item	Yes	No	Comment			
General						
Is the CEMP available onsite?	<input type="checkbox"/>	<input type="checkbox"/>				
Have any environmental incidents occurred during the week? If so, provide details	<input type="checkbox"/>	<input type="checkbox"/>	*If yes, complete environmental incident report.			
Complete description of weather for the upcoming week – circle applicable						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Are there any rain events forecasted for the coming week?	<input type="checkbox"/>	<input type="checkbox"/>				
Have pre rain event inspections been completed?	<input type="checkbox"/>	<input type="checkbox"/>				
Have post rain event inspections been completed?	<input type="checkbox"/>	<input type="checkbox"/>				
Water Quality						
Is water quality monitoring occurring when water is flowing across the site boundaries?	<input type="checkbox"/>	<input type="checkbox"/>	*If yes, complete water quality monitoring form			
Erosion and Sediment Control						
Are works contained within the construction boundary?	<input type="checkbox"/>	<input type="checkbox"/>				
Are completed areas being progressively stabilized?	<input type="checkbox"/>	<input type="checkbox"/>				
Is there any new evidence of erosion?	<input type="checkbox"/>	<input type="checkbox"/>				
Are erosion and sediment controls installed as per the ESCP?	<input type="checkbox"/>	<input type="checkbox"/>				
Is dirty water entering dirty water diversion channels during rain events?	<input type="checkbox"/>	<input type="checkbox"/>				
Do sediment controls have over 80% capacity?	<input type="checkbox"/>	<input type="checkbox"/>				
Cultural Heritage						
Have any finds of cultural significance been found?	<input type="checkbox"/>	<input type="checkbox"/>				
Noise and Vibration						
Have any complaints been received during the week?	<input type="checkbox"/>	<input type="checkbox"/>	*If yes, complete Complaints Register			
Are nearby sensitive receptors being notified before significant noise and/or vibration causing activities?	<input type="checkbox"/>	<input type="checkbox"/>				

Are works only occurring within the hours of operation?	<input type="checkbox"/>	<input type="checkbox"/>	
Dust			
Have any complaints been received during the week?	<input type="checkbox"/>	<input type="checkbox"/>	*If yes, complete Complaints Register
Have completed areas been revegetated or stabilised?	<input type="checkbox"/>	<input type="checkbox"/>	
Are works ceasing during high winds?	<input type="checkbox"/>	<input type="checkbox"/>	
Are only designated access points and haul routes being used?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the site access and surrounding roads swept clean of sediment?	<input type="checkbox"/>	<input type="checkbox"/>	
Vegetation			
Are vegetated surfaces being maintained as far as reasonably possible?	<input type="checkbox"/>	<input type="checkbox"/>	
Contaminated Soils			
Have any contaminants been uncovered during excavations?	<input type="checkbox"/>	<input type="checkbox"/>	
Chemicals and Fuels			
Are all hazardous substances on site stored, transported and used according to the safety data sheet requirements?	<input type="checkbox"/>	<input type="checkbox"/>	
Are vehicles and plant being refuelled in the refuelling bay?	<input type="checkbox"/>	<input type="checkbox"/>	
Is concrete washing being undertaken in the concrete wash-out pit?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an adequate supply of spill kits onsite? Have any used materials been replaced?	<input type="checkbox"/>	<input type="checkbox"/>	
Waste			
Is the site in a safe, clean and tidy?	<input type="checkbox"/>	<input type="checkbox"/>	
Are wastes segregated into labelled bins with lids?	<input type="checkbox"/>	<input type="checkbox"/>	
Are skip bins not overfilled?	<input type="checkbox"/>	<input type="checkbox"/>	
Is waste removed from open drains and drainage paths?	<input type="checkbox"/>	<input type="checkbox"/>	

Actions resulting from this inspection must be forwarded to the Project Manager. Any actions should be recorded in the Non-Conformance Register – **Appendix 8**.

Additional Comments:

Names and Signatures of inspection attendees:

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ENVIRONMENTAL INCIDENT REPORT FORM

Project Address:	Consent Number:
Brief Project Description?	

Instructions- Complete this form for all environmental incident that cause contaminants (including sediment) or environmental nuisance to leave the site. Be succinct, stick to known facts and do not make assumptions. Once completed submit to Queenstown Lakes District Council at RCMonitoring@qldc.govt.nz and Otago Regional Council at pollution@orc.govt.nz and compliance@orc.govt.nz. Call the QLDC Regulatory team immediately on 03 441 0499 and ORC's Pollution Hotline on 0800 800 033 for any serious or ongoing incidents that cannot be brought under immediate control.

Date and Time	Date: XX/XX/XX Time: XX:XX hours
Description? Provide a brief and factual description of what happened during the incident, include relevant details such as: <ul style="list-style-type: none"> • The activity being undertaken when the incident occurred • The estimated distance to nearest waterway (including stormwater and dry courses) • The estimated distance to the nearest sensitive receiver Sketches/diagrams/photos may be referenced and appended to this report to aid in the description of the incident.	
Exact Location of the incident	
Include address, landmark features, nearest tree, etc. Maps and plans can be attached.	
Quantity or volume of material escape or causing incident? (provide an estimate quantity)	
Who identified the incident?	Contractor <input type="checkbox"/> Council <input type="checkbox"/> Community <input type="checkbox"/> Other <input type="checkbox"/>

What immediate actions/control measures were taken to rectify or contain the incident?
What initial corrective action will be taken to prevent similar incidents recurring in the near future?

<p>Has the Queenstown Lakes District Council been notified? Yes <input type="checkbox"/> No <input type="checkbox"/> Will be notified <input type="checkbox"/></p> <p>Has the Otago Regional Council been notified? Yes <input type="checkbox"/> No <input type="checkbox"/> Will be notified <input type="checkbox"/></p>
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<p>Role of person making report: Project Manager / Site Supervisor / Environmental Representative / SQEP</p> <p>Name..... Signature.....</p> <p>Organisation..... Date.....</p> <p>Mobile phone number.....</p>
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APPENDIX 7 ENVIRONMENTAL COMPLAINTS REGISTER

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ENVIRONMENTAL NON-CONFORMANCE REGISTER

Ref Number	Date Observed	Found via (e.g., inspection, monitoring, complaint?)	Details of Non-conformance	Corrective Actions	Updated by	Close out Date

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APPENDIX 9 WATER QUALITY MONITORING RESULTS FORM

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WATER QUALITY MONITORING PLAN

Objectives and Sampling Scope

The primary objectives of this Water Quality Monitoring Plan are to:

- Demonstrate compliance with consented water quality limits (e.g., turbidity, TSS, pH).
- Establish baseline water quality of receiving environment (if required).
- Monitor discharges during earthworks to assess potential impacts on receiving environments.
- Inform adaptive management and corrective actions where needed.

Spatial Boundaries:

- **Upstream (Background) Site:** To establish baseline water quality.
- **Discharge Point(s):** At locations where site runoff enters the receiving environment.
- **Downstream Site(s):** To assess site impacts.

Frequency: When there is a discharge of water across the site boundary from a sediment retention pond or decanting earth bund, and where a Significant Rain Event occurs throughout the night, monitoring must be

Monitoring Trigger	Frequency
Rainfall Events (20 mm within a 12-hour period or a rain event that can generate overland flow, noting that this varies seasonally)	During or immediately post-event
Active Discharges	During each discharge
Routine Consent Monitoring (if required)	E.g., monthly or as specified
Complaint / Incident	Within 24 hours

undertaken the following morning by 8 am.

Sampling Design What to Sample:

Parameter	Method	Purpose
Turbidity	Field Meter (MTU/FNU)	Primary sediment indicator
Visual clarity	Clarity tube/secchi disk	Primary sediment indicator
Total Suspended Solids (TSS)	Laboratory analysis (mg/L)	E.g., monthly or as specified
pH	pH strips or pH meter	Within 24 hours
Optional (e.g. D.O, Metals, Hydrocarbons)	Lab analysis	If required by consented or if observed visually during inspections

Where to Sample

- Where water is flowing across the site boundaries.

How to Sample

Refer to the overview in the preceding pages. If in doubt, contact your site SQEP or local authority.

Reporting

- Monitoring results will be compiled into event-based inspection sheet (refer to table below) and compiled in the monthly reports (as required).
- Any exceedances will trigger immediate review, corrective action, and notification to [QLDC, ORC, CODC].
- Final summary reporting at project completion or as per resource consent requirements.

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WATER QUALITY SAMPLING

Select a Sampling Location	
<p>Sampling a discharge</p> <p>Collect sample where water crosses the site boundary or enters a sensitive receptor from a retention device. Always photograph the location you sample from.</p>	
<p>Sampling a waterway</p> <p>Collect sample from the centre of the flow and the top third of the water column where possible.</p>	
<p>Sampling a from a S diment Retention Device</p> <p>Collect sample from the discharge location, this is eit near the decanting arms, spillway, hose or the outlet pipe.</p>	

Collect a Water Sample

Taking a Water Sample

- Label container with site name, sampling location, date and time taken.
- Fill the container with water from the surface of your sampling location.

If you wade into the water to collect the sample, always collect the sample 'upstream' of where you're standing to avoid contamination by disturbed sediment.



Measure and Record Turbidity, Clarity and pH

Measuring Turbidity using a Turbidity meter

Fill the turbidity pottle with the sampled water. Wipe away any moisture on the outside of the pottle and insert it into the meter. Turn the meter on and once the standby value appears press read. Record the turbidity.

Contact EnviroSCOPE for turbidity monitoring if required.



Measuring Clarity using a field-testing Secchi disc

Lower the secchi disc into the water sample until you can no longer see the disc. Then lift the secchi disc up until the disc is just visible. Record the number where the water level sits.



Measuring pH using a pH meter

Submerge the probe of the pH meter into the water sample. Keep the probe in the water until the value on the meter is fixed. Record the pH value.

Measuring pH using pH strips

Dip a pH strip into the water sample for 1 second. Compare with the universal indicator paper and wait 5 seconds. Record the pH value.



DRAFT



HERITAGE NEW ZEALAND POUHERE TAONGA

Heritage New Zealand Pouhere Taonga Archaeological Discovery Protocol

Under the Heritage New Zealand Pouhere Taonga Act (2014) an archaeological site is defined as any place in New Zealand that was associated with human activity that occurred before 1900 and provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand. For pre-contact Maori sites this evidence may be in the form of bones, shells, charcoal, stones etc. In later sites of European/Chinese origin, artefacts such as bottle glass, crockery etc. may be found, or evidence of old foundations, wells, drains or similar structures. Burials/koiwi tangata may be found from any historic period.

In the event that an unidentified archaeological site is located during works, the following applies;

1. Work shall cease immediately at that place and within 20m around the site.
2. The contractor must shut down all machinery, secure the area, and advise the Site Manager.
3. The Site Manager shall secure the site and notify the Heritage New Zealand Regional Archaeologist. Further assessment by an archaeologist may be required.
4. If the site is of Maori origin, the Site Manager shall notify the Heritage New Zealand Regional Archaeologist and the appropriate iwi groups or kaitiaki representative of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met (Heritage New Zealand Pouhere Taonga Act Protected Objects Act).
5. If human remains (koiwi tangata) are uncovered the Site Manager shall advise the Heritage New Zealand Regional Archaeologist, NZ Police and the appropriate iwi groups or kaitiaki representative and the above process under 4 shall apply. Remains are not to be moved until such time as iwi and Heritage New Zealand have responded.
6. Works affecting the archaeological site and any human remains (koiwi tangata) shall not resume until Heritage New Zealand gives written approval for work to continue. Further assessment by an archaeologist may be required.
7. Where iwi so request, any information recorded as the result of the find such as a description of location and content, is to be provided for their records.
8. Heritage New Zealand will determine if an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014 is required for works to continue.

It is an offence under S87 of the *Heritage New Zealand Pouhere Taonga Act 2014* to modify or destroy an archaeological site without an authority from Heritage New Zealand irrespective of whether the works are permitted or a consent has been issued under the Resource Management Act.

Heritage New Zealand Regional archaeologist contact details: [REDACTED]

Regional Archaeologist Otago/Southland
Heritage New Zealand PO Box 5467
Dunedin

[REDACTED]
[REDACTED]
[REDACTED]