

Best Management Practice

Catchpit protection

Issued by Auckland Council, July 2015

If you have any questions about this procedures sheet contact Auckland Council on 09 301 0101.

1. When should I use this BMP?

Use this Best Management Practice (BMP) as a guide when installing catchpit protection.

Most work sites occur in areas where there are surrounding stormwater catchpits, or direct pathways (e.g. roadside kerb and channels) to catchpits.

You should install catchpit protection as a form of secondary control when undertaking works to prevent contaminants entering the stormwater system.

2. What's the aim?

That stormwater systems must only drain rain

There are many types of activities that occur on construction sites. These activities pose environmental risks, and can result in discharges of contaminants to receiving environments and adverse effects on natural habitats, eco-systems and communities.

Catchpit protection will help you to reduce the environmental risk of your site and activities by intercepting and containing contaminated run off, or filtering sediment laden water before it enters the stormwater system.

Catchpit protection is only to be used as a form of secondary control.

Always implement appropriate best management site practices and primary environmental controls to prevent problems from first occurring and minimise the amount of contaminants that you have to manage and the potential risks of discharges from your site.

3. Catchpit protection – what are you trying to achieve?

There is no one solution to catchpit protection

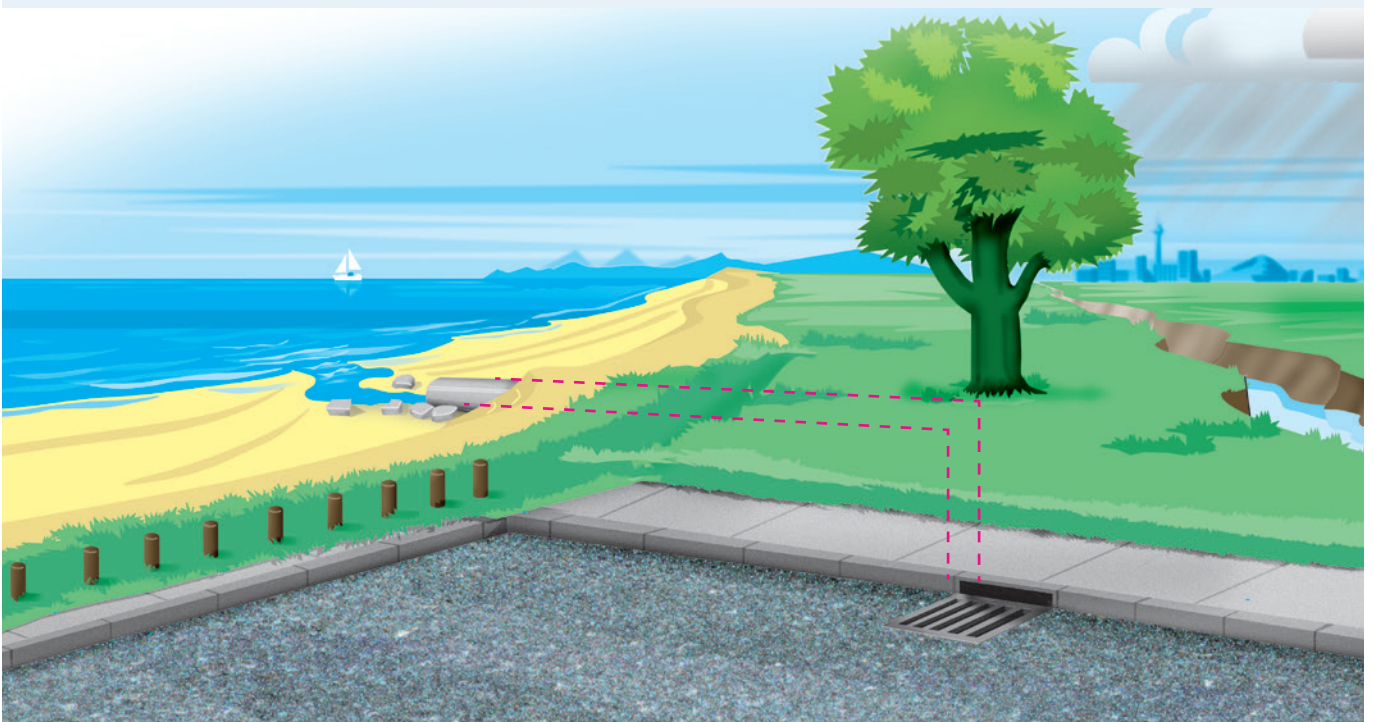
There are many methods, materials and devices that can be used to protect catchpits, these include:

- filter cloth (geotextile) wrapping
- sandbags, bunds, sand socks
- filter bunds, socks and logs
- proprietary devices such as witches hats, filter inserts, filter bags, drain mats, drain plugs etc.

The solution that you choose will need to form part of your wider site management practices and environmental controls.

Firstly consider what you need to achieve. Do you need to completely block the catchpit, for instance when you are surface cutting? Or do you need to allow water to pass through, filtering and trapping sediment?

Once you have worked out what you need your catchpit protection to achieve, consider the following points to work out which method of protection is the most appropriate for your site and activities.



Specific methods:

This section presents a number of common approaches that can be quickly and easily implemented to provide effective catchpit protection.

It is important to note that these examples are to be used only as a guide. Always remember to consider 'Section 5 – Catchpit Protection Key Points to Consider', to work out which method, or combination of methods, is the most appropriate for your site and activities.

• Sandbags or sand filled socks

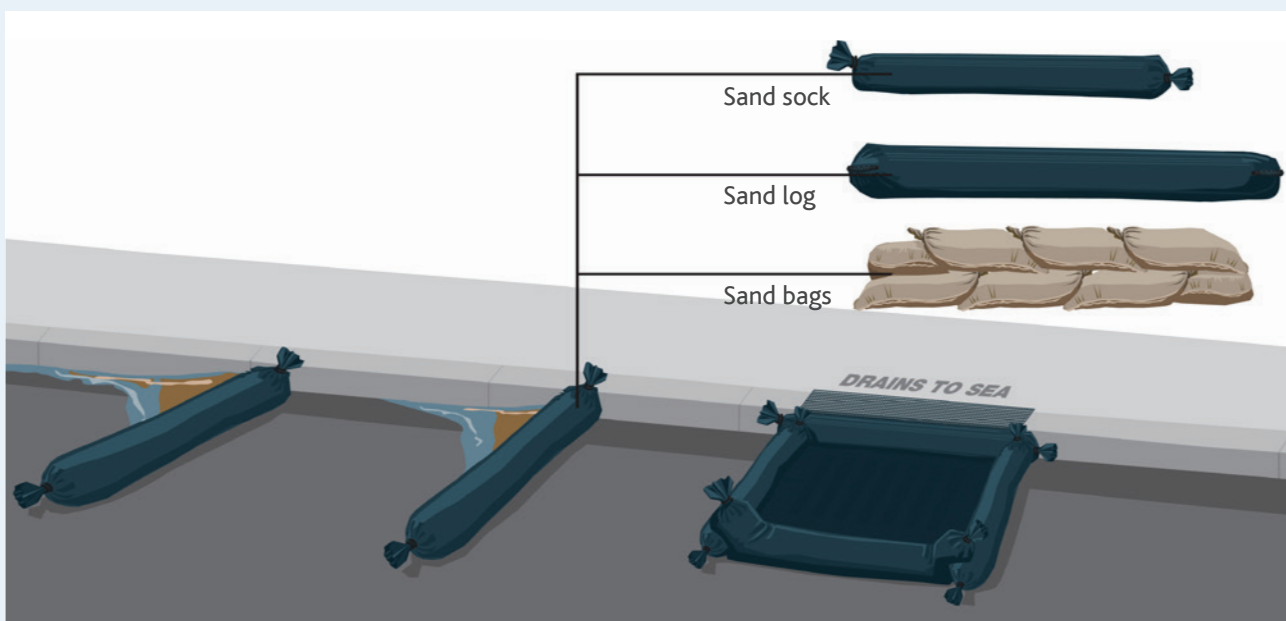
- Identify pathways to catchpits. Often multiple catchpits will need to be protected.
- Place sand bags, sand filled socks or logs in stages upslope of the catchpit. The number of controls used will depend on the amount of water that you are seeking to contain and the steepness of the area.
- Ensure that water does not run under the controls. This can be an issue on rough chip sealed roads.

• Catchpit bunding or blocking

Catchpit bunding or blocking can be used when there is a requirement to completely isolate the catchpit. This may be when undertaking high risk activities such as surface cutting or cement stabilising.

Remember that catchpit bunding or blocking prevents any water from entering the catchpit. Water may flow on to a downstream catchpit or cause flooding during rainfall events. Bunding or blocking should only be implemented as a short-term / temporary solution.

- Also place sand filled socks or logs immediately around the catchpit.
- Ensure that the back entry to the catchpit is protected – place sand filled socks or logs across the front of the back entry.
- Remove ponded water, and dispose of appropriately.
- Remove controls as soon as possible, or before heavy rain.



• Drain mat

- Identify pathways to catchpits. Often multiple catchpits will need to be protected.
- Place a drain mat over the catchpit grate.
- Ensure that water does not run under the mat. Consider placing sandbags or sand socks on the drain mat to weigh down the edges.

- Ensure that the back entry to the catchpit is protected – place sand filled socks or logs across the front of the back entry.
- Remove ponded water, and dispose of appropriately.
- Remove controls as soon as possible, or before heavy rain.

• Catchpit filtering

The most common form of catchpit protection is catchpit filtering – where water passes through a number of controls and sediment is filtered and trapped.

Catchpit filtering should always be used in conjunction with best management site practices and primary environmental controls.

Catchpit filtering is only appropriate for sediment control.

Typical filter materials **will not** remove contaminants such as hydrocarbons (fuels and oils) or reduce the alkalinity of water that has come in to contact with concrete fines, dust, wastewater or washings.

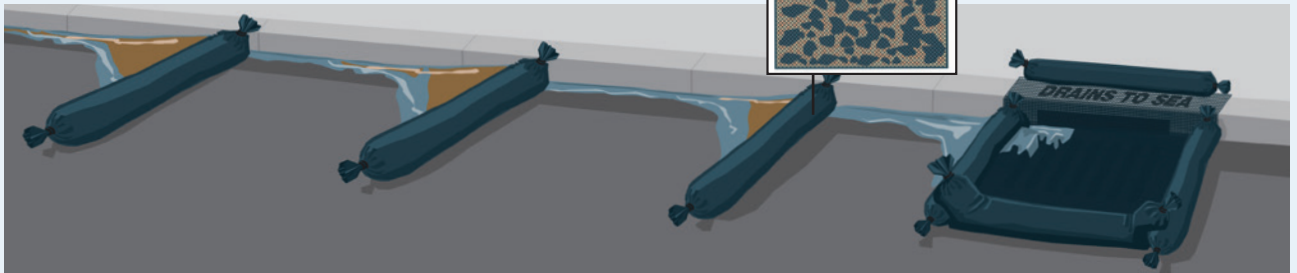
Filter cloth used in the following methods must be of a suitable geotextile product, preferably non-woven needle punched. Geotextiles will allow water to pass while importantly trapping sediments.

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• Filter cloth (geotextile) with filter socks

- Identify pathways to catchpits. Often multiple catchpits will need to be protected.
- Use two people to completely lift off the catchpit grate.
- Lay filter cloth material over the catchpit opening and fold across the back entry and up onto the pavement.
- Allow plenty of overlap of the filter cloth around the grate and back entry.
- Use two people to place the grate back into place. Place carefully into the hinged slots.
- Place filter socks around the edges of the filter cloth, to anchor the cloth in place, prevent the cloth folding up and to act as a filter.

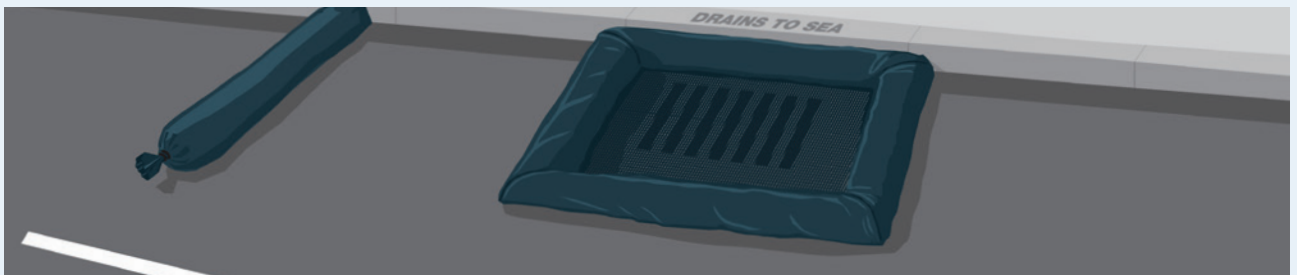
- Consider placing a series of filter socks or logs upslope of the catchpit to act as filter dams for steep sites, larger amounts of water or water containing concentrated amounts of sediment.
- Consider leaving a gap between filter socks at the front face to act as a high flow by-pass during rainfall events.
- If there is difficulty in protecting the back entry of the catchpit, place a filter sock or log across the entry.
- Place sand bags or sand filled socks on the cloth overlap on the footpath to anchor it in place.



• Purpose built filter cloth with built in gravel around perimeter to act as primary filter

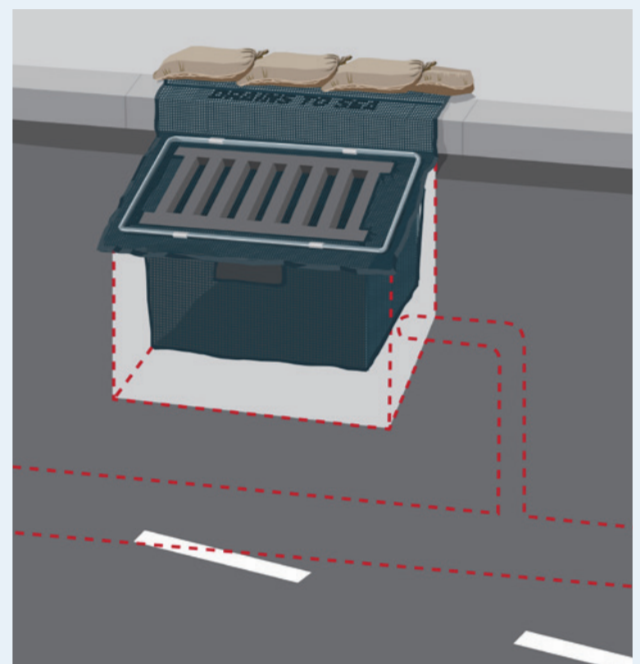
- Identify pathways to catchpits. Often multiple catchpits will need to be protected.
- Place the device over the top of the catchpit grate.

- Ensure that the device lays flat and water can not pass under the device.
- If back entry is not protected place a filter sock or log across the entry.



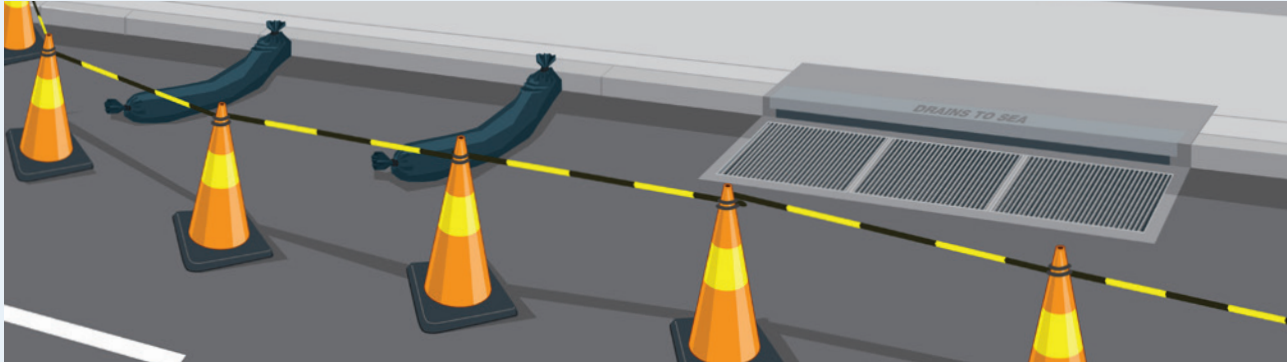
• Purpose built filter cloth with filter insert and frame

- Identify pathways to catchpits. Often multiple catchpits will need to be protected.
- Use two people to completely lift off the catchpit grate.
- Place the device into the catchpit chamber. Be careful not to allow it to fall into the chamber.
- Use two people to place the grate back into place. Place carefully into the hinged slots.
- Place frame over the top of the catchpit grate to anchor the filter cloth in place and to prevent the cloth from folding up.
- Place a filter sock around the catchpit, or a series of filter socks or logs upslope of the catchpit, to act as an additional filter for steep sites, larger amounts of water, or water containing concentrated amounts of sediment.
- If there is difficulty in protecting the back entry of the catchpit, place a filter sock or log across the entry.
- Place sand bags or sand filled socks on the cloth overlap on the footpath to anchor it in place.



• Series of filter logs

- Identify pathways to catchpits. Often multiple catchpits will need to be protected.
- Place a series of filter logs to act as filter dams in the kerb or channel upslope of the catchpit.
- Angle the filter logs to allow water to pool.
- Ensure that the height of the filter log is less than the kerb height to prevent overtopping and flood risks during rainfall.
- It may be necessary to weigh down filter logs with sand bags to prevent movement during rainfall – be careful not to create a bund.



4. Catchpit protection – key points to consider

When protecting catchpits, consider the following to work out which method of protection is most appropriate:

- The characteristics of the site – steeper sites typically result in faster flows of water which can overtop or flow past some methods of catchpit protection. Catchpit protection bunds or filters with a gap in the face may help to drain away higher stormwater flows.
- The location of the site and pathways to receiving environments – are there direct pathways to the receiving environment via impervious surfaces, kerb and channels and stormwater catchpits?
- The nature and scale and activities being conducted on site.
- The potential contaminants that you are trying to manage – for example, highly alkaline water contaminated by concrete products must be prevented from entering stormwater catchpits through measures that completely protect (block) the catchpit.
- Length of time on site – for example, consider using more permanent catchpit filter inserts if on site for longer durations.
- The type of catchpit to be protected – is it a standard design?
- Safety requirements, such as manpower on site, cycle and pedestrian use / access, traffic volumes, speed limits – for example, use barriers and cones to ensure public safety around work sites.
- Risk of damage caused by vehicles – some catchpit protection measures such as bunds or large sand socks may be easily damaged by passing traffic.
- Maintenance requirements – some catchpit protection methods may blind or block quickly and require regular maintenance, can the catchpit protection be easily and safely maintained?

5. General site management and environmental controls

Always try to reduce environmental risks and reliance on catchpit protection as secondary controls. Implement general and activity specific site management and environmental controls before, during and after works. The key points to remember are:

- Identify the potential risks and define how these can be mitigated or reduced through best management site practices and / or primary environmental controls.
- Identify a person who will be responsible for ensuring environmental practices and controls are followed and implemented.
- Put in place diversions (e.g. bunding, sandbags etc.) at stages uphill of the site to divert clean stormwater around the works. This will help to reduce the amount of contaminated water that you have to manage.

6. Implementing catchpit protection

This BMP provides general guidance on common practical approaches to catchpit protection. While the guidance provided is general, there are many points to consider when implementing a range of catchpit protection approaches and devices – these are presented below.

Due to the range of catchpit protection methods and products currently available, it is not possible to provide specific guidance on the implementation or installation procedures for each approach. Refer to manufacturer's installation instructions when available.

It is important to note that while the BMPs present a range of practical approaches, the methods / examples given are an information guide only. There are many ways of minimising risks and adverse effects of construction related activities. It is up to you to work out what is appropriate for the scale and nature of your activities, the site and type of contaminants.

Remember, the BMP methods / examples may not be complete or appropriate for all situations. The person doing or arranging the work remains solely responsible

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for making their own assessments and doing the work properly, safely and in compliance with all laws and regulations.

Key points to consider:

Common to a range of catchpit protection methods and products.

- Always make sure that catchpit protection can be safely implemented. Be aware of the health and safety risks of working in and around roads and do not install unless traffic can be managed safely.
- When installing catchpit protection be aware of the weather conditions and forecasts of heavy rain. Catchpit protection can often cause flooding.
- If heavy rain or storms are forecast, temporarily stabilise your site, make sure your primary environmental controls are in place and consider removing catchpit protection.
- Check the lay of the land and decide where any run-off is likely to go. Often multiple catchpits will need to be protected.
- Sweep the immediate area around the catchpit.
- Use two people to safely lift and remove the catchpit grate.
- Remove any loose material around the catchpit and hinged slot.
- All points where runoff can enter the catchpit must be protected.

7. Monitoring and maintenance

Working out and implementing the most appropriate method of catchpit protection is just the first step. You must now regularly inspect and maintain the catchpit protection controls, along with other site controls, that you have put in place.

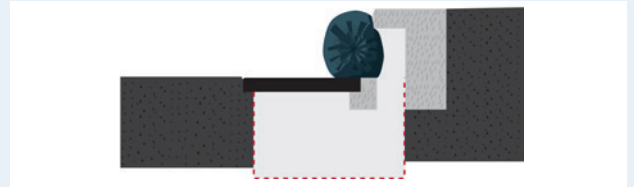
Have a plan for inspections and maintenance to:

- Regularly assess catchpit protection to make sure it is operating effectively. Daily inspections are recommended for passive controls. Inspect more frequently if you are utilising catchpit protection as an active control for high risk activities such as dewatering.
- Remember that products that rely on filtration can block very quickly with sediment.
- Undertake maintenance if catchpit protection is worn, broken or ripped.
- Regularly remove any accumulated sediment.
- Adjust practices or controls if they are not working efficiently.
- Once works are complete and the site is stabilised, remove catchpit protection, inspect stormwater

catchpits and remove any contamination associated with site works.

8. Tips

- Does the catchpit protection that you have implemented achieve its purpose?
- All points where runoff can enter the catchpit must be protected.



- Ensure that all gaps and holes are blocked between the kerb channel and catchpit protection.



- Inspect catchpit protection, along with primary environmental controls at least once a day to ensure they are working properly. Adjust practices if necessary.
- Remember that catchpit protection measures are to be used as secondary control devices only. Catchpit protection must only be used in conjunction with other best management site practices and primary environmental controls.

9. Useful links and information

- Go to aucklandcouncil.govt.nz and search for 'pollution', here you will find a range of helpful information and links to the range of pollution related resources and educational materials.
- Refer to the following Stormwater Unit BMPs
 - Dewatering
 - Trenching
 - Potentially contaminated sites
 - Spills and emergency management
 - General site management and housekeeping
 - Sediment and dust management
 - Concrete and asphalt
 - Directional drilling.

If a discharge occurs that has the potential to, or has entered the stormwater system or natural receiving environments, contact the Auckland Council 24 HOUR POLLUTION HOTLINE on 09 377 3107 immediately.



Find out more:

For access to this BMP and to find the other BMP information sheets, visit aucklandcouncil.govt.nz/stormwater

Important Notice: ©Auckland Council 2011. This Best Management Practice (BMP) sheet is an information guide only and is not technical or compliance advice. Its recommendations may not be complete or appropriate for all situations, and the person doing/arranging the work remains solely responsible for making their own assessments and doing the work properly, safely and in compliance with all laws and regulations.

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