

# Pollution

## and the Auckland Region

### A guide for all works involving concrete, cement and lime

If you or your business works with concrete, lime or other cement based products, then it is important that you ensure that no land or water pollution results from your activities.



Remember: If you can't take the necessary steps to prevent pollution from your work practices, you shouldn't be in the business.

This booklet contains valuable information about our environment and the impact our daily activities are having on it. It explains the steps that we can all take to prevent pollution from occurring.

Keep it handy; show it to your workers, contractors and sub-contractors. We all have a part to play in ensuring that the environment is protected now and for future generations.

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Poor practice - exposing aggregate without any controls

# What effect can cement have?

Lime is a major component of cement and is found in all concrete products. It dissolves in water to produce an alkaline solution that will burn and kill fish, insects and plants. Water that comes into contact with unset concrete or concrete dust quickly increases in alkalinity and will be highly toxic to aquatic life.

Concrete wastewater has a pH of 12 -13 and is as toxic as oven cleaner or bleach. The pH of freshwater is 6-7. Concrete wastewater causes burns in a similar way to a strong acid. A single bucket of concrete wastewater will easily kill hundreds of fish.

Never allow concrete slurry or wastewater to enter the stormwater system.

## Native trout and eels with cement burns



## Eels up to 50 years old killed by cement wastewater

Concrete slurry and wastewater must be collected or diverted to grass or bare soil.

Sacking, felt cloth, weed mat, enviro-filters and haybales do not reduce the high pH of concrete wastewater. The filtered water will still be toxic even though it looks clear.

**Do not try to filter concrete wastewater to remove the toxicity.**

## Concrete Cutting:

- Make sure all dust is collected. Concrete dust left at a site may be washed by rain into the stormwater system. Check the cuts and the wider site for any dust before leaving.
- If wet cutting, use as little water as possible. Ensure you put slurry controls in place before you start work.
- Check that cuts have been fully washed out and that all slurry has been collected.

## Exposing Aggregate:

- Check the weather - don't lay concrete if rain is forecast.
- Put slurry controls in place before you start work.
- Check that the controls you have put in place can cope with the volume of wastewater produced.
- If you use an acid wash, make sure all wastewater is collected for treatment and disposal. Do not divert acidic wastewater to grass or bare soil areas.

## Concrete Pumping:

- Ensure a tarpaulin or sheet is placed under the pump to catch drips.
- If concrete truck chutes or other equipment are washed out into the pump hopper, do not discharge the water onto the street or into any drains.

Good practice - diversion and removal of concrete wastewater



## Delivery Trucks:

- Make sure all concrete chutes are washed out at home base or a designated area and that chute covers are used when driving.
- Report all spills to management immediately and ensure that no wastewater enters the stormwater system.
- Never wash out chutes onto driveways, or roads or into any drains.

## Washing Equipment:

- Wash all equipment used in concreting at a designated site, where wastewater can be contained for treatment and disposal.
- For small sites, wash equipment over a grassed or bare soil area.
- Do not wash any equipment where the wastewater may flow to overland streams or to the stormwater system.

## Lime Stabilisation:

- Clearly identify all water mains within the work area and ensure they are not damaged while the lime is being worked into the ground.
- Check the weather forecast. Never undertake lime stabilisation when rain is forecast.
- Have plans in place to prevent lime from reaching waterways when something goes wrong.
- Catchpit filters cannot filter high pH wastewater. Do not use catchpit filters as a treatment device for alkaline wastewater.
- Do not allow any runoff from lime stabilisation to enter the stormwater system.

# Slurry Controls

If you are concrete cutting, exposing aggregate, or undertaking lime stabilisation, you must have slurry/wastewater controls in place **BEFORE** you start work.



- Divert run-off using sandbags, soil or other materials, to a grassed area, pit or bare ground to soak in. Ensure that the area of grass/soil is big enough to deal with the volume of wastewater produced.



- Use a wetvac to remove wastewater.



- Use sandbags or soil to dam the kerb and channel. Make sure this seals well and that no wastewater seeps through.
- Use a wetvac, pump or sucker truck to remove wastewater as it builds up during the job. Ensure the wetvac or pump can cope with the volume of wastewater produced.
- Do not allow any slurry or wastewater to enter the stormwater system.

Do not try to filter concrete wastewater to remove the toxicity.



- Sacking, felt cloth, weed mat, enviro-filters and hay bales do not reduce the high pH of concrete wastewater. The filtered water will still be toxic even though it may look clear.

# Dilution is not the solution

- Never try to dilute concrete wastewater or slurry spills.
- It takes 100,000L of fresh water to dilute a bucket of concrete wastewater to a neutral pH.



- Sweep or shovel up all slurry for disposal. Do not leave slurry to be washed away or to set.



- If you discharge slurry/wastewater to grassed areas or bare soil, check that rain can not wash it to the stormwater system later.



# The Law

## The Polluter pays

Polluters can face an infringement fee of up to \$1000 or imprisonment for a maximum term of two years or a fine of up to \$200,000, with a further \$10,000 for each day the discharge continues.

**Land owners:** you are responsible for any work on your land. Make sure the contractor you hire knows how to do the job properly.

**Bosses:** you are responsible for the actions of your staff. Make sure you train them well and give them the proper tools for the job.

**Workers:** you must do the job properly. If you cause pollution, you could lose your job, get a fine or even go to jail.

Report all spills immediately to the 24hour pollution hotline: (09) 377 3107.



Over 250 eels killed by a cement wastewater spill

Any concrete wastewater that enters natural waterways will have a devastating effect.

# Notes:



Poor practice - cement slurry washed onto the street by rain from a concrete cutting site

# Remember

- Make sure that your contractors and staff know what to do to protect the environment.
- Check the weather forecast.
- Plan ahead and put controls in before starting work.
- Don't hose cement dust or slurry onto streets or down any drains.
- Never leave cement dust or slurry onsite where rain could wash it away.
- The polluter pays.
- Report all spills to the ARC Pollution Hotline **immediately**.

24 Hour Pollution Response Hotline  
(09) 377 3107

