

Dust suppression on unsealed roads

Dusty roads – the problem

Dust is an ongoing nuisance for people who live close to unsealed roads. The dust generated by vehicle traffic can have a wide variety of effects including;

- Landing on roofs and contaminating drinking water,
- Causing health problems for people with breathing disorders,
- Covering gardens and household property.

Used (waste) oil has traditionally been the main dust suppression method as it was plentiful, relatively easy to apply and cheap. However, in recent years concerns have been raised about the effects of using used oil for dust suppression because of its potential effects on human health and the environment.

What's wrong with used oil?

Even clean off-the-shelf engine oil contains additives (such as zinc compounds). During its use in engines, it becomes contaminated with the byproducts of combustion and metals from engine wear and tear. These contaminants can include cancer-causing polycyclic aromatic hydrocarbons (PAHs) and metals such as aluminium, cadmium, chromium, lead and copper.

When used oil is applied to roads, these contaminants bind to dust particles and can then be washed off roads by rain or blown into the air. Some of the used oil may also simply evaporate into the air. Humans may ingest these harmful materials through drinking contaminated water or breathing in contaminated air or dust.

A nationwide Ministry for the Environment study in 1997 concluded that the environmental and health risks of applying used oil to roads as a dust suppressant are too great and that the practice should be strongly discouraged.

The Regional Water and Soil Plan for Northland now **prohibits** the use of waste oil for dust suppression. However, there is a range of alternatives available.

Alternative dust suppression agents

Sealing or paving

Sealing is the most effective method of dust suppression available. However, at a cost of approximately \$150,000 per kilometre, sealing is very expensive.

Most District Councils have annual programmes that extend the length of sealed roads in a district.

Roads are prioritised for sealing based on, among other things, vehicle counts.

Chemical suppressants

1. Lignin sulphonates

This byproduct of the pulp and paper industry is currently marketed as 'Dustex', which is available from Orica Chemnet. The manufacturer can be contacted on (0800) 222 277 and the person to talk to is Amanda Walles.

It is recommended that the product be applied by an experienced applicator using the appropriate equipment.

2. Bituminous emulsions, i.e. Slowbreak and Spraymul-AQ55

These are based on the same material that is used to seal roads but they are less permanent. Slowbreak can be purchased from Bitumix or through various roading contractors. Spraymul-AQ55 can be purchased from Shell (NZ) Limited, phone (0800) 474 355.

It is recommended that these products be applied by an experienced applicator using the appropriate equipment.

The following list contains some companies that can supply and apply these products:



Econ Products

Phone: (09) 438 5984

Contacts: Phil Tombs (0274) 931 862
or Paul Wilson (09) 4260300 or (0274) 390 351

Fulton Hogan

Phone: (09) 470 0700

Contact: Dave Mataira

McBreen Jenkins Construction Limited

Phone: (021) 457 163

Contact: Jim Clark

Works Infrastructure

Phone: (09) 435 1734

Contact: Gary McCarrison (027) 493 2234
or Roger Douglas

Water

Water is the cheapest form of dust suppression but is generally only suitable for short-term dust reduction. Its period of effectiveness is dependent on traffic volumes and weather but can vary between 30 minutes to 12 hours. Regular light watering is more effective than less frequent heavy watering.

If the water to be used on the road is to be extracted from a river or lake then you need to talk to the Regional Council.



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Do you need a resource consent?

1. Water

Water can be applied as a dust suppressant without a resource consent. However, a consent may be required for the taking of water from a river or lake for application on roads. It is advisable that you talk to the Consents Department at the Regional Council.

2. Unused or uncontaminated (virgin) oils

It is illegal to apply unused or virgin petroleum based oil to roads without a resource consent. People may apply to the Regional Council for a resource consent to apply virgin oil to roads. Applications to apply virgin oil to roads will be considered on a case-by-case basis. These oils will either have to be specifically formulated for dust suppression or be vegetable based and not contain any additives such as are commonly found in "off the shelf" engine oils.

3. Bituminous emulsions (such as 'Slowbreak', 'Spraymul-AQ55', 'Dustgrip')

A resource consent is required for the application of bitumen-based products. They must be applied by an experienced operator because if applied incorrectly, these products may enter roadside drains and pollute fresh water supplies. Aquatic ecosystems may be adversely affected.

4. Lignin sulphate-based products

These are very unlikely to cause any adverse effects on the environment so the Regional Council does not require resource consent for their application. However, please phone the Northland Regional Council Waste Management Team Leader Jerry Nelson or Air Quality Team Leader Paul Baynham on 0800 002 004 if you are using these materials. The Regional Council is collecting information on their effectiveness.

Northland Regional Council Offices

Opua Office

Unit 10, Opua Marine Park, Opua 0200.
Telephone: 09 402 7516 Facsimile: 09 402 7510

Kaitaia Office

192 Commerce Street, Kaitaia 0410.
Telephone: 09 408 6600 Facsimile: 09 408 6601

Dargaville Office

61B Victoria Street, Dargaville 0310.
Telephone: 09 439 3300 Facsimile: 09 439 3301

Main Office

36 Water St, Whangarei.
Private Bag 9021, Whangarei 0140.
Telephone: 09 438 4639 Facsimile: 09 438 0012

Email: mailroom@nrc.govt.nz

Freephone: 0800 002 004

24/7 Environmental Hotline: 0800 504 639

Website: www.nrc.govt.nz



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