

Pollution Solutions

SAND, GRAVEL, STONE QUARRIERS AND PROCESSORS

JULY 2000



Operator's Environmental Guide for Environmentally Relevant Activities

- 20 – Extracting rock or other materials
- 22 – Screening materials with a design capacity of less than 5000 tonnes per year

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EXPLANATORY NOTES FOR OPERATOR'S ENVIRONMENTAL GUIDE (OEG)

Purpose of the OEG

The *Environmental Protection Act 1994* states 'A person must not carry out an activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the "general environmental duty")'. This clause applies to all persons in Queensland.

Under the *Environmental Protection Act 1994* and *Integrated Planning Act 1997* Local Government licenses and approves businesses that have the potential to cause environmental harm – Environmentally Relevant Activities (ERAs). Extractive and screening industries with a design capacity of less than 5000 tonnes per year are level 2 ERAs listed in the *Environmental Protection Regulation 1998*.

All ERAs must have a development permit and/or an environmental authority (approval) which lists the conditions of operation to prevent pollution. However, setting these conditions is only part of the story. Businesses should know how to meet these conditions (compliance) and to go beyond (best practice).

This Operator's Environmental Guide (OEG) - *Pollution Solutions For Sand, Gravel, Stone Quarrying and Processing* - has been developed to assist you to achieve your general environmental duty as above. That is, to achieve compliance with the *Environmental Protection Act 1994* and progress towards best practice environmental management.

The OEG was developed jointly by Brisbane City Council and representatives of the sand, gravel, stone quarriers and processors industry.

Limitations of the OEG

Council has written this OEG as a guide only. It does not form part of the approval conditions. Complying with this document does not necessarily exempt the licensee from prosecution or ensure compliance with the *Environmental Protection Act 1994*, Regulation and Policies (Air, Water, Noise and Interim Waste).

Approvals may contain conditions that vary from the requirements of the OEG. These are often included because of site specific requirements or because of the nature of the activity. Whether your operational performance meets the conditions of your development permit and/or environmental authority (approval) will be the main determinant of compliance.

The control measures in the OEG are recommendations only. It remains the responsibility of each operator and employee of the business to satisfy the general environmental duty applicable to that business. The operator should carefully consider the information in this OEG and put in place measures that help to achieve this objective.

This OEG represents accepted industry practice at the time of issue and is therefore subject to change. Please note the date recorded on the front.



How to use the OEG

This OEG is based on three central concepts. These are explained below and each operational process is defined according to these concepts.

Environmental Outcomes

are outcomes, or goals, Council considers important to achieve if the environment is to be protected.

The Environmental Outcomes are highlighted in bold text. You should try to satisfy the general environmental duty. The environmental outcomes in the OEG, however, do not ensure that this duty is achieved and should be considered in conjunction with your development permit and/or approval conditions.

Compliance

means the control measures that Council recommends as the minimum required to meet the environmental objective your industry.

In some cases, a number of compliance control measures may be listed for one process. In these cases, an operator is advised to aim for the control measure or combination of control measures that is most likely to achieve the environmental outcome for that process.

Alternatively, you may be able to meet an environmental outcome in a way that is not listed in this OEG. It is recommended that in these instances the alternatives be discussed with a Council Officer prior to implementation.

Although this guide lists some solutions, Council encourages operators to develop alternative ideas or innovations that are consistent with the environmental outcomes and other relevant requirements.



Best practice

means the control measures that are considered to be above the minimum requirements. They are not compulsory. Best practice incorporates concepts such as cleaner production, waste minimisation, recycling and reuse. Use of best practice control measures may help to improve industry standards and progress towards best practice in the industry. Best practice measures are marked with a  in the text.

In some cases, a business may be required to use a best practice control measure, rather than compliance, if an authorised officer believes that it is necessary to achieve an environmental outcome.

The best practice options listed are not fully inclusive; they only indicate what options may be available. Other best practice options not listed in this OEG may be used.

Importantly, this OEG takes into account changing industry standards, technology improvements, and scientific knowledge and community expectations.



ENVIRONMENTAL DUTY

Develop environmental commitment and sound environmental performance

- Develop a commitment to being good neighbours to prevent or minimise pollution.
- Ensure all staff are aware of the development permit and/or approval conditions and the relevant methods and procedures contained in this OEG.



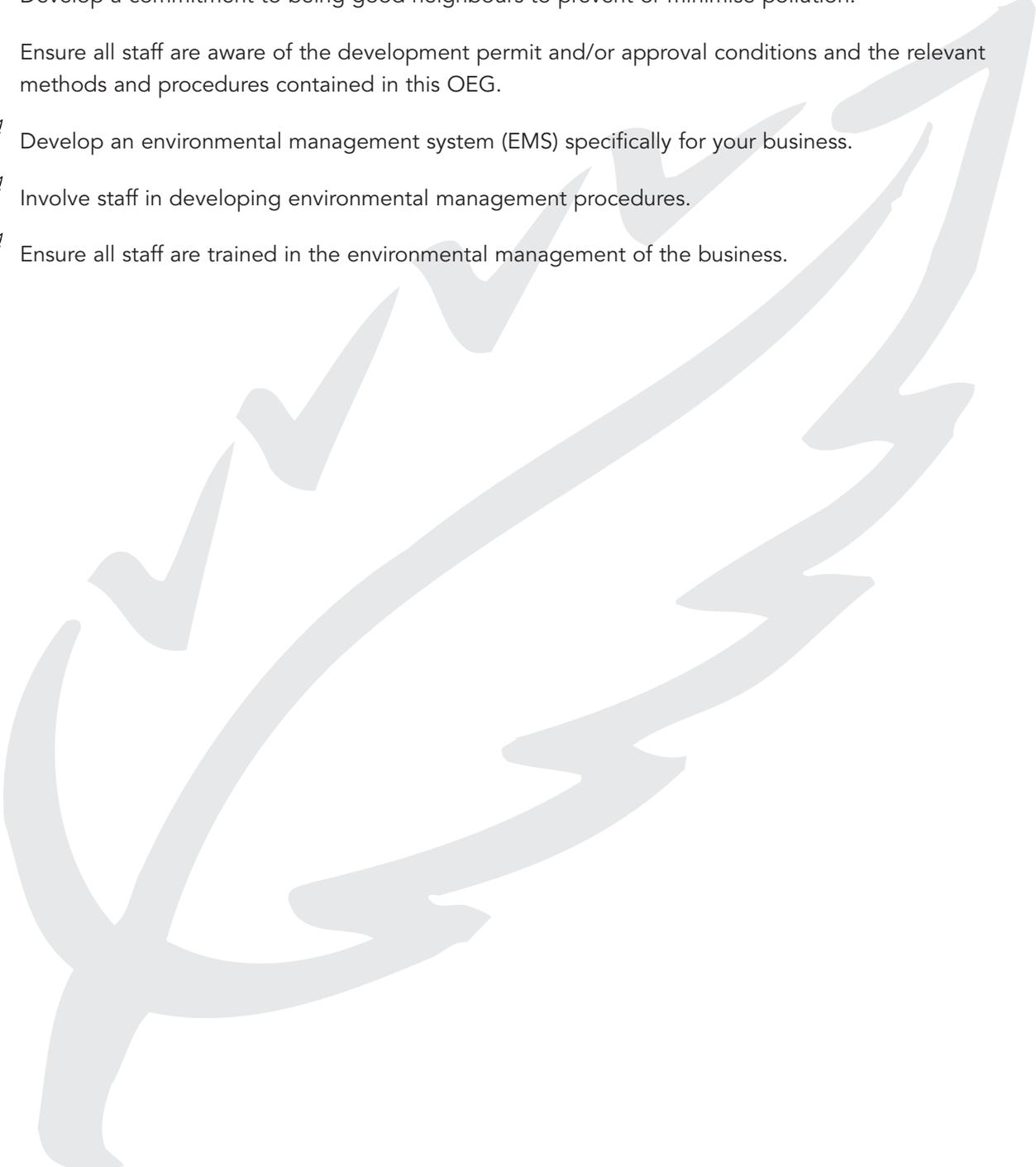
Develop an environmental management system (EMS) specifically for your business.



Involve staff in developing environmental management procedures.



Ensure all staff are trained in the environmental management of the business.



ENVIRONMENTAL MANAGEMENT

Implement environmental policies and practices

- The object of the *Environmental Protection Act 1994* is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).

Environmental Management Program (EMP)

Achieve compliance for non-conforming activities

- Operators who are currently unable to comply with the requirements of approval conditions and the OEG may be required to submit an EMP for approval.
- An EMP is a binding agreement between your business and Council that sets out the areas where your business needs to improve to achieve compliance, and the time frame to achieve them. This allows you to operate your business although you may not fully comply, as long as Council has a firm arrangement with you to rectify problem areas in a mutually agreed time.

Environmental Management System (EMS)

Maintain compliance with approval conditions and implement best practices



Develop an EMS to ensure environmental performance and compliance with licence conditions and the OEG. An EMS provides a systematic method for meeting environmental outcomes, licence conditions and the ways or procedures for meeting and exceeding compliance. It allows for:

- better practices
- monitoring of, and reporting on, performance
- training of staff
- keeping of relevant records
- complaint response
- emergency and incident response.



Plan to protect your environment and reduce your business risks.



An EMS addresses noise, air quality, waste and any other relevant environmental issues associated with processes that could reasonably pose a significant risk to the environment, if not appropriately controlled, monitored and/or managed.

- For low risk activities, the EMS should be kept concise with control measures, checklists and records (e.g. development permit, waste disposal) maintained.
- In higher risk activities, licence conditions and procedures generally require more detail in an EMS. In some cases, preparation by an environmental consultant is recommended.
- The basic objectives are to increase business performance and reduce environmental risks through good management practices. Key components in the EMS include:
 - monitoring and reporting
 - records
 - training of employees
 - complaint response
 - emergency and incident responses.



PROCESSES AND MANAGEMENT FOR SAND, GRAVEL, STONE QUARRIERS AND PROCESSORS

Pre-approval Administration

- Develop and submit an environmental management plan.
- Check whether the site is subject to any Vegetation Protection Orders (VPOs):
 - where a VPO exists, approval to clear the area must be obtained from Council before any work commences.

Operational Specifications

Prevent environmental nuisance outside normal working hours

- Extraction or filling to only take place between the hours of 7:00 am and 6:00 pm excluding Sundays and Public Holidays.
- You must obtain approval from Council prior to undertaking any extraction on a Sunday or public holiday.

Protect public and workers' health and safety

- Prior to the commencement of extraction, surround the site with a secure barrier which:
 - cannot be climbed through
 - is difficult to climb over
 - has access which can be readily secured
 - displays warning signs clearly notifying of the danger and nature of the site
 - is located at least 2 metres from the edge of the extractive area.

Land Management

Ensure that the disturbed areas are kept to a minimum

- The maximum area disturbed and not being rehabilitated at one time is to be three hectares or less.

Topsoil Utilisation

Store initial topsoil for rehabilitation

- The extraction path must be stripped of topsoil for a maximum of one hectare ahead of extractions.
- The topsoil must be immediately reused or stored in 2 metres high windrows for less than six months. It should be spread over all disturbed ground as a rooting medium for the revegetation process.



Erosion Prevention

Prevent erosion

- The maximum slope on all re-formed material will be 1:6. This slope may be reduced to 1:4 with a maximum slope length of 30 metres.
- Roads and tracks must be constructed along ridgelines. Construct inclined diversion banks, 0.4m high x 1m wide x 0.25% grade along inclines.

Landform Management

Ensure proper landform management

- All backfilled excavations must be overfilled to allow for settlement.
- All re-shaped disturbed land must be similar in form to surrounding undisturbed land.

Physical Integrity of Watercourses

Protect the physical integrity of watercourses

- Carry out extraction in a way that will not change the course of creeks, rivers or channels. There should be no damage to the bed or banks of the watercourse or interference with the flow of water in any watercourse.
- All vegetation along the creek side zone must be retained.
- Where a road or track crosses a watercourse, care must be taken to minimise erosion and disturbance of banks. Material placed in the creek for fording or bridging should be removed at the end of operations.

Water Management

Protect creek vegetation

- The following activities are forbidden in the watercourses or in the creek side zone:
 - extraction
 - processing of materials.



Prevent silt pollution

- Never release wash or wastewater into the watercourse or creek side zone.
- Provide a diversion system to ensure that any nearby watercourses do not flow onto the site. This diversion system must also ensure that any water in the sediment ponds cannot flow directly into a watercourse without completing its course through the system.
- Install stormwater treatment silt traps where necessary to prevent material entering watercourses or stormwater drains.
- Divert stormwater runoff from all disturbed areas into sediment basins.

Prevent water pollution

- Never release oil, grease, solvents or other such contaminants to waters. Such wastes must be collected and stored for either recycling or for disposal through a licensed waste removalist.
- A suspended solids level will be set by the approval conditions; the levels vary depending on the watercourse or land area discharged to. Any wash water discharge from the sedimentation ponds must be within the levels set in the approval.
- Discharge of wastewater from sedimentation ponds must not increase receiving water turbidity by more than 10% over 'background' levels. *Monitor turbidity levels upstream and downstream of operations.*
- Cover the contents of the silt traps and revegetate in accordance with the site rehabilitation plan.

Protect watercourses and other properties

- Establish control procedures to ensure that sediment from the site is not deposited in adjacent properties, drains or watercourses.

Prevent spillages / overflows

- Ensure that operational procedures are in place to prevent spillages and overflows from sediment ponds and dams.
- Sources of information on control measures:
 - Soil Erosion and Sediment Control – Engineering Guidelines for Queensland Construction Sites June 1996.
Contact: The Institute of Engineers – Queensland Division
447 Upper Edward Street
Brisbane Qld 4000
Phone 3832 3749



Site Rehabilitation

Ensure the site is returned as closely as possible to its original state or alternatively to an approved state of public amenity

- Rehabilitate the site during and on completion of extractive activities with "Clean Fill" as defined in the Town Plan (i.e. naturally occurring clay, sand or soil; or bricks; crushed rock, concrete or masonry free from contamination).
- Revegetate all disturbed areas after operations cease on each area:
 - maintain each area until the vegetation cover is fully re-established.
- No waste materials are to be imported onto the site unless it is licensed as a disposal facility under the *Environmental Protection Act (1994)*.
- Where not specified in a development approval, prepare and submit to Council for approval a proposed site rehabilitation plan at least 18 months before the closure of the site. The plan must include consideration of and designs for the following applicable requirements:
 - after use options (including most likely or preferred option)
 - conceptual design for after use infrastructure
 - proposed final surface contours
 - capping materials to be used (e.g. clay rich soil, sandy soil)
 - drainage system
 - provision for irrigation measures to promote vegetation growth
 - anticipated period of after care.
- Use top soil for the final surface of fill. Slope, drain and vegetate the surface to minimise erosion, infiltration and to prevent stormwater ponding.
- The final layer of compacted earth must be 0.5 metres or more in depth and cover the entire fill area.
- Prior to the completion of the after care program undertake an environmental audit to ensure that the fill is stable and non-polluting. The audit is to certify that:
 - the fill poses no threat to groundwater quality
 - the fill surface is stable with acceptable surface water drainage
 - documentation that all functions in the after care plan have been adequately completed.



STORAGE OF POTENTIAL CONTAMINANTS

Minimise accidental spills and prevent contamination of soil, stormwater, ground-water and/or air



- Store chemicals and other materials that may contaminate soil, stormwater, groundwater and/or air in a manner that prevents or minimises the impact of any accidental spills or releases. This means:
 - potential liquid contaminants stored in a secure, covered area away from through traffic. Such contaminants may include disinfectants, fuels, oils, detergents, poisons, cleaning solvents, alkaline or acidic solutions;
 - storage areas provided in an impervious bunded area or compound to contain any leakage or spillage. The capacity of the compound shall be at least the capacity of the largest tank or package in the compound (Bunding may not be required where the storage is inside a workshop or similar area and the operator can demonstrate that any spills will not escape the area and contaminate stormwater or surrounding ground.); and
 - where dangerous goods (as defined by the ADG Code) are stored in quantities in excess of minor storage (refer to the Note below), the capacity of the compound shall comply with the requirements of the relevant legislation, Australian Standard and/or Code of Practice.

Relevant Australian Standards may include:

- AS 1940 *The storage and handling of flammable and combustible liquids*
- AS 2022 *Anhydrous ammonia – Storage and handling anhydrous ammonia*
- AS 2714 *The storage and handling of hazardous chemicals - Class 5.2 substances (organic peroxides)*
- AS 3780 *The storage and handling of corrosive substances*
- AS 3833 *The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers*
- AS 4081 *The storage, handling and transport of liquid and liquefied polyfunctional isocyanates*
- AS 4326 *The storage and handling of oxidising agents*
- AS 4452 *The storage and handling of toxic substances*

Note: Storage of materials in excess of minor storage quantities may require approval, licensing and full compliance with the above standards. Contact the Council or the relevant dangerous goods administering authority for further information.

- Storage must be:
 - away from any heating or ignition sources
 - provided with adequate natural or mechanical ventilation relevant to the nature of the substance and its use.



Reduce volatile emissions

- Store volatile liquids (e.g. solvents, thinners) in closed containers that are kept closed when not in use. This will avoid unnecessary exposure of volatile liquids.
- Keep Material Safety Data Sheets (MSDS) for all hazardous substances used or stored on site. In case of an emergency an MSDS is the most effective means of assessing risk.

CAUTION!: Some classes of materials may react dangerously if mixed or stored together. Incompatible materials must be segregated to minimise the possibility of any reaction. Read and follow all directions on labels. Refer to the material's Material Safety Data Sheet (MSDS) or contact the manufacturer for further information.

Respond promptly to spills and leaks

- Keep clean-up equipment, absorbent materials, and any materials for neutralising or decontaminating spills on the premises. Staff are to be adequately trained in the use of these materials.
- Immediately take action to clean-up spills or leaks. Contaminated materials are not to be reused and must be appropriately contained and packaged for transport for either recycling or disposal by a licensed waste operator.

Minimise chemical risks



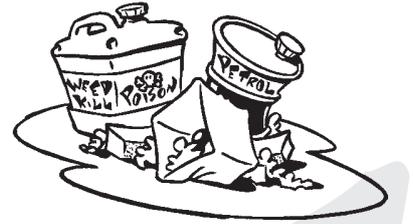
- Fit containers of chemicals (e.g. solvents) with taps to enable pumping instead of pouring.
- Position trays under chemical container taps to catch any spillage or drips. Ensure the tray's material is compatible with the chemical.



WASTE MANAGEMENT

Reduce waste of material resources and landfill space

- Minimise all wastes produced by site activities.



Recycle and reduce waste disposal costs



Disposal of wastes should be viewed as the last option in environmental management strategies. The life of material resources may be extended by recovery, reuse and recycling.



Implement a waste recycling (reuse) system for non-hazardous solid wastes using separate containers for individual waste streams (refer to Solid Wastes section).

- Clearly label waste containers and locate them in convenient areas to encourage use. Mixing wastes may make them unsuitable for reuse or recycling.

Protect soil, stormwater and groundwater quality

- Store solid wastes undercover so contaminants cannot be washed to stormwater by rain.
- Never dispose of waste on site.



Use wet/dry vacuum cleaners with dust filters for general cleaning of floors instead of sweeping and hosing with water.

Prevent landfill hazards

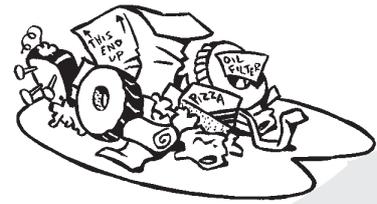
- Material put into industrial bins will generally go to landfill. Do not dispose of gas cylinders, asbestos-containing materials or synthetic-mineral fibres into an industrial bin; instead wastes should be disposed through a licensed waste removalist.
- Only place solid inert waste in industrial bins.

Protect air quality

- Incinerating waste on site is prohibited.



SOLID WASTES



Hazardous Wastes (regulated)

Prevent contamination of landfill, soil and water

- Regulated wastes are those that have been identified as unsafe for municipal or refuse landfill disposal. These wastes are listed in Schedule 7 of the *Environmental Protection Regulation 1998* (refer to Appendix 2) and must be disposed through a licensed waste removalist.
- Keep proof of proper disposal of hazardous wastes for presentation to Council officers. Proof of appropriate disposal includes:
 - hazardous waste disposal facility docket
 - waste manifest documents
 - licensed waste transport receipts.

Non-hazardous Wastes

Conserve material resources, landfill space and reduce waste disposal costs



The following solid wastes are recyclable. They should be collected in separate containers for disposal at a waste recycling and reprocessing facility:

- clean cardboard
- aluminium cans, drink bottles
- plastics
- steel drums, drained steel cans
- metal parts
- rags (can be laundered and reused)
- batteries
- tyres.

Ensure appropriate disposal of non-recyclable solid wastes

- Always dispose of non-recyclable solid waste at a licensed general waste disposal facility e.g. local government service or approved waste removalist.

Prevent contamination of landfill and groundwater with hazardous wastes

- Empty all containers or vessels containing oils, solvents, and other chemicals or potential contaminants before disposing via the industrial bins.

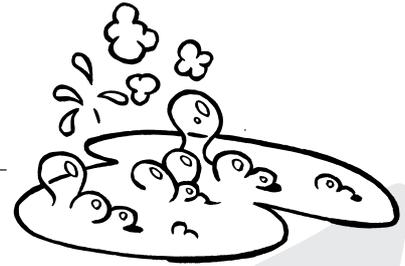
Prevent air contamination by harmful dusts

- Bag floor sweepings and other dusty wastes before disposing via the industrial bins.
- Only transport general solid waste in your own vehicle or by a licensed waste transporter.



LIQUID WASTES

Non-sewerable Wastes (regulated)



Prevent contamination of landfill, soil and water

- Non-sewerable (regulated) wastes are those that have been identified as unsafe for sewer disposal. These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 1998* (refer to Appendix 2) and must be disposed of by a licensed waste removalist.
- Keep proof of proper disposal of non-sewerable wastes for presentation to Council officers upon request. Proof of appropriate disposal includes:
 - hazardous waste disposal facility docket
 - waste manifest docket
 - licensed waste transport receipts.



Separate out recyclable liquid wastes for collection by a licensed waste removalist. Recyclable liquid wastes include solvents, thinners, waste oil, brake fluid and coolant.

Sewerable Wastes

Ensure compliance with approval conditions (Trade Waste Permit)

- Obtain a Trade Waste Permit from Council prior to discharge of any trade waste to the sewer. The permit establishes the discharge conditions for the waste.
- Water-miscible solutions are generally accepted under a Trade Waste Permit. This may include dilute organic wastes.
- As a guideline the minimum treatment required for discharge to sewer is an oil/silt interceptor trap.
- Washdown waters must either be directed to the sewerage system under the conditions of the Trade Waste Permit, or collected for recycling or disposal by a licensed waste removalist.

Prevent contamination of landfill, soil and water

- Sewerable wastes, including contents of portable toilets, must be removed from the site and disposed of to a sewer treatment plant or approved septic system.



On-site treatment and reuse of wastewater (e.g. washdown waters) can be used to replace or reduce disposal of wastewater to sewer. The systems of treatment and nature of reuse must not cause pollution or be hazardous to persons (refer to Appendix 3).



STORMWATER MANAGEMENT

Prevent contamination of soil, stormwater and local watercourses

Stormwater flows untreated to your local creek or waterbody.

- Prevent stormwater from entering or leaving work areas where it may become contaminated with grease, oils, chemicals, particulates or solvents.
 - Cover and bund such areas where necessary to avoid the incursion of stormwater and prevent hazardous and trade wastes from contaminating the surrounding soil and stormwater system.
- Prevent wastewater containing contaminants (such as detergents used for cleaning areas) from contaminating stormwater or the ground. Do not hose workshop floor, vehicles or machinery parts on to the surrounding soil or into stormwater drains.
- Store wastes undercover so that contaminants cannot be washed to stormwater by rain.



Avoid sewerage system overload

- Do not direct stormwater to the sewerage system. It is an offence under the *Sewerage and Water Supply Act 1949*.
- Regularly check the condition of erosion control measures, dams, storage tanks, bunds and liners.
- Contain any contaminated stormwater (e.g. holding tank) and:
 - dispose by a licensed waste removalist
 - treat on-site to an appropriate standard for discharge
 - treat on-site for recycling or reuse (refer to Appendix 3).

CAUTION!: *Contaminating stormwater and other Queensland waters may result in an 'on the spot' fine or prosecution under the Environmental Protection Act 1994.*

The Environmental Protection (Water) Policy 1997 prohibits the discharge of 'certain things' into a roadside gutter, stormwater or a water, or to a place where it could be reasonably expected to move or to be washed into a roadside gutter, stormwater or a water. Discharges to stormwater must comply with the Environmental Protection (Water) Policy 1997.



AIRBORNE WASTES



Dust Control

Minimise dust emissions and potential contaminants from exposed surfaces

- Specify speed limits on exposed road surfaces (<40km/hr).
- Regularly water unsealed roads (clean water @ 1-2L/m²). This will prevent dust nuisance from traffic.
- Erect barriers to discourage vehicles on unsealed areas.
- Seal, turf or cover exposed sites with a dust suppressant to minimise airborne dust. Suppressants include:
 - compacted road base
 - aggregate
 - organic dust-binding agents.
- Never use waste oil or other contaminants on dirt roads as dust suppressant or weed killer. This may lead to the site being notifiable under the *Environmental Protection Act 1994*.

Maintain and protect local and regional air quality, soil and waters

- Control dust generation so that particles do not move off-site. Dusts may also contain hazardous materials and contaminate air, soil and waters.
- Immediately clean up material spilt on traffic areas before vehicle movement can move it.
- Regularly collect and place in a sealed bag any floor sweepings, dust, powder waste or absorbent clean up materials, before disposing in a covered waste bin.
- Cover truckloads of materials or product during transport if there is a possibility dust may be emitted.
- Regularly water outside stockpiles to keep down dust emissions. Do this in conjunction with an appropriate catchment and treatment system to contain runoff and leached water from sprinklers.
- Enclose stockpiles with walls on at least three sides at all times. Stockpile height must be at least 0.5metres below the tops of the walls and at least 0.5metres inside the open ends of the enclosures.
- Cover stockpiles during long production runs.





Cover raw material with high dust generating potential in addition to using sidewalls.

- Any excessive dust generated by screening of materials needs to be controlled by wetting down, enclosures or water sprays.
- Cover sand and aggregates during long production intervals.

Smoke/Odour Emissions

Minimise smoke and odour emissions



Wood chip cleared vegetation

- Burn cleared vegetation utilising a pit burner only under the conditions of an approval from Council and a Fire Permit obtained before burning commences.



NOISE MANAGEMENT



Prevent nuisance and unreasonable noise

- The activity must not cause an 'unreasonable noise' as defined in the *Environmental Protection (Noise) Policy 1997*.
- Use the layout of the buildings and the natural topography as noise barriers where possible. Cost-effective landscaping improvements (e.g. fencing, mounds, and plants) can be used to reduce noise emissions and therefore noise complaints.
- It is best to avoid using extension telephone bells and public address systems. If they are considered necessary then keep them at the lowest possible audible level. Also ensure that music does not cause an annoyance to the neighbours.
- Ensure that silencers fitted to air compressors, pumps, fans and blowers and other noisy machinery are effective.
- Enclose or acoustically screen noisy equipment not complying with Environmental Protection (Noise) Policy 1997 to muffle noise. Such equipment or operations should be located away from noise sensitive land uses.
- Reduce structural-borne noise and vibration by mounting equipment on vibration isolating platforms, rubber mats, or by increasing the mass weight of equipment.
- Fit mechanical ventilation systems (e.g. air conditioners, fans) with noise-proof ducting and acoustically designed intake and exhaust openings.
- Ask for noise reduction devices when purchasing new plant and equipment.
- Close workshop windows and roller doors facing noise-sensitive premises and seal all unnecessary openings.
- Only operate heavy vehicles in daylight hours.
- Regularly maintain all equipment and vehicles and attend promptly to any loose parts, rattling covers, worn bearings and broken components. This should be addressed through a regular maintenance schedule and correct staff training.

Note: Premises causing ongoing noise problems may be required to introduce other noise control measures, including noise monitoring and reporting.

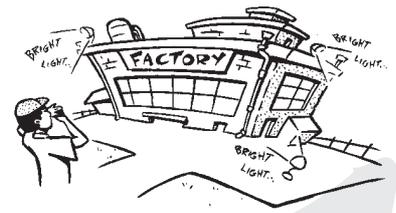
Operators should also be aware of the cumulative effects of noise levels on the receiving environment, and where practical, take appropriate steps to reduce noise levels from their operation, particularly before 7am and after 6pm.



VISUAL AMENITY

Prevent environmental nuisance and protect visual amenity

- Ensure that lighting of the premises for security or any other reason does not cause annoyance to the occupants of neighbouring residential areas.
- Control measures for lighting include:
 - design and layout of lights and reflective surfaces
 - brightness of lights/shading of lights
 - height of lights
 - hours of operation of lights.
- Signage is to be compatible with Council town planning requirements for amenity.
- Erect suitably planted earthen embankments and fences to screen extraction and fill areas from adjacent premises and public places.
- Maintain a vegetation buffer around the site to an approved distance from the site boundary.
- Retain native vegetation where possible and undertake new plantings where necessary.



APPENDIX 1 – DEFINITIONS

Bund

An impervious embankment or wall of brick, stone, concrete, or other approved material that may form part or all of the perimeter of a compound. For example, a bund may be used to contain spills from a fuel tank.

Environmental Harm

An adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value and includes environmental nuisance, *Environmental Protection Act 1994*.

Environmental Management Program (EMP)

A specific program that, when approved, achieves compliance with the *Environmental Protection Act 1994* for the matters dealt with by the program by:

- (a) reducing environmental harm
- (b) detailing the transition to an environmental standard.

Environmental Management System (EMS)

Is a systematic approach to managing the environmental aspects of an activity. As a minimum for the lower risk activities administered by Council, an EMS would entail documenting standard operating procedures for the aspects of the activity that may result in environmental harm or nuisance.

Environmental Nuisance

Any unreasonable interference or likely interference with an environmental value that is caused by noise, dust, odour, light, an unhealthy, offensive or unsightly condition because of contamination, or another way prescribed by regulation, *Environmental Protection Act 1994*.

Environmental Value

- (a) A quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or
- (b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation, *Environmental Protection Act 1994*.

General Environmental Duty

A person must not carry out an activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm.

Material Safety Data Sheets (MSDS)

Information sheets on products that manufacturers are required to provide. They outline the composition, applications and precautions that need to be taken in using such products.

Regulated Liquid Wastes

Those wastes that have been identified as unsafe for sewer disposal due to their chemical nature (e.g. flammable). These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 1998*.

Regulated Solid Wastes

Those wastes that have been identified as unsafe for landfill disposal. These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 1998*.



Stormwater

Rainfall that runs off hard surfaces, such as roofs, roads and car parks, or off ground that has become saturated. Stormwater flows untreated to local creeks.

Trade Waste

Liquid wastes from any business, industry, trade or manufacturing process approved for sewer disposal other than domestic sewage.

Unreasonable Noise

An unreasonable noise is one which:

- (a) causes unlawful environmental harm because of:
 - its characteristics
 - its intrusiveness
 - the time at which it is made
 - where it can be heard
 - other noises ordinarily present at the place where it can be heard
- (b) is not declared to be reasonable in and Environmental Protection Policy.

VOCs (Volatile Organic Compounds)

Evaporated organic solvents e.g. hydrocarbons or alcohols, or unburnt liquid fuels, which are known or suspected to have environmental or health effects. Examples of VOCs include solvents, thinners, acrylic lacquers and fuels.



APPENDIX 2 – SCHEDULE 7 - REGULATED WASTES

Abattoir effluent	Heterocyclic organic compounds containing oxygen, nitrogen or sulphur	Petroleum tank sludges
Acids and acid solutions	Hydrocarbons (oxygen, nitrogen or sulphur)	Pharmaceutical substances
Adhesives (other than solid inert polymeric materials)	Industrial plant wash down waters	Phenolic compounds (other than solid inert polymeric materials)
Alkalis and alkaline solutions	Infectious substances	Phosphorus
Antimony	Inks	Pickling liquors
Arsenic	Inorganic cyanides and cyanide complexes	Polychlorinated biphenyls and related substances
Asbestos (all chemical forms)	Inorganic sulphur compounds	Polymeric lattices
Azides	Isocyanate compounds (other than solid inert polymeric materials)	Poultry processing wastes
Barium	Laboratory chemicals	Quarantine waste
Batteries	Lead	Reactive chemicals
Beryllium	Lime neutralised sludges	Reducing agents
Biocides	Lime sludges	Resins (other than solid inert polymeric materials)
Boiler blowdown sludge	Materials or equipment contaminated with infectious substances	Saline effluent and residues
Boron	Mercaptans	Selenium
Cadmium	Mercury and anything containing mercury	Silver compounds
Caustic solutions	Metal finishing effluent and residues	Solvent recovery residues
Chlorates	Methacrylate compounds (other than solid inert polymeric materials)	Surfactants
Chromium	Nickel	Tallow
Contaminated soils	Oil interceptor sludges	Tannery effluent and residues
Copper compounds	Oil water emulsions and mixtures	Tars and tarry residues
Cytotoxic wastes	Oils	Tellurium
Detergents	Organic solvents	Textile effluent and residues
Distillation residues	Oxidising agents	Thallium
Dyes	Ozone depleting substances	Timber preservative effluent and residues
Electroplating effluent and residues	Paint sludges and residues	Treatment tank sludges and residues (including sewage tank sludges and residues)
Filter backwash waters	Perchlorates	Tyres
Filter cake sludges and residues	Pesticides	Vanadium
Fish processing waste		Vegetable oils
Fly ash		Vehicle wash down waters
Food processing waste		Wool scouring effluent & residues
Grease interceptor trap effluent and residues		Zinc compounds

APPENDIX 3 – ON-SITE TREATMENT AND REUSE OF WASTEWATER OR STORMWATER

- a) The operator should consult with the Council regarding any system for the collection, treatment and reuse of wastewater (e.g. washdown waters) or stormwater that may be contaminated. This needs to be approved by Council to ensure the method and level of treatment is adequate and safe.
- b) It is generally necessary to test and monitor treated waters to demonstrate effectiveness of the system for Council approval.
- c) Consideration must be made of:
 - volumes to be treated
 - handling and storage
 - key contaminants
 - types of treatment
 - disposal of wastes (e.g. sludge)
 - safety and hygiene
 - testing and frequency.

