

Pollution Solutions

MOTOR SERVICE INDUSTRIES

JULY 2000



Operator's Environmental Guide for Environmentally Relevant Activities 28 & 65

- Motor Vehicle Workshop (including mobile operations)
 - Spray Painting and Panel Beating
- Motor Racing (non-international races)

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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 (ERA). Motor vehicle repairs (including mobile operations) and spray painting / panel beating are level 1 ERAs and motor racing is a level 2 ERA listed in the *Environmental Protection Regulation 1998*.

All ERAs must have a development permit and/or an environmental authority (a licence - for level 1 ERAs or an approval for level 2 ERAs) 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 Motor Service Industries* has been developed to assist the motor vehicle industries to achieve their 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 the Brisbane City Council and representatives of the motor servicing, smash repair and motor racing industries.

Limitations of the OEG

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

Approvals or licences may contain conditions which may vary from the requirements in 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 (licence or 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 may help to achieve this objective.

This OEG represents accepted motor servicing, smash repair and motor racing 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 the outcomes, or goals that Council considers important to be achieved 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 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 outcome for the motor service industries.

In some cases, a number of compliance control measures may be listed for one process. In these cases you are 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 manner 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 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 some of the options 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 and to preventing or minimising pollution.
- Ensure all staff are aware of the development permit and/or licence conditions and the relevant methods and procedures contained in this OEG.



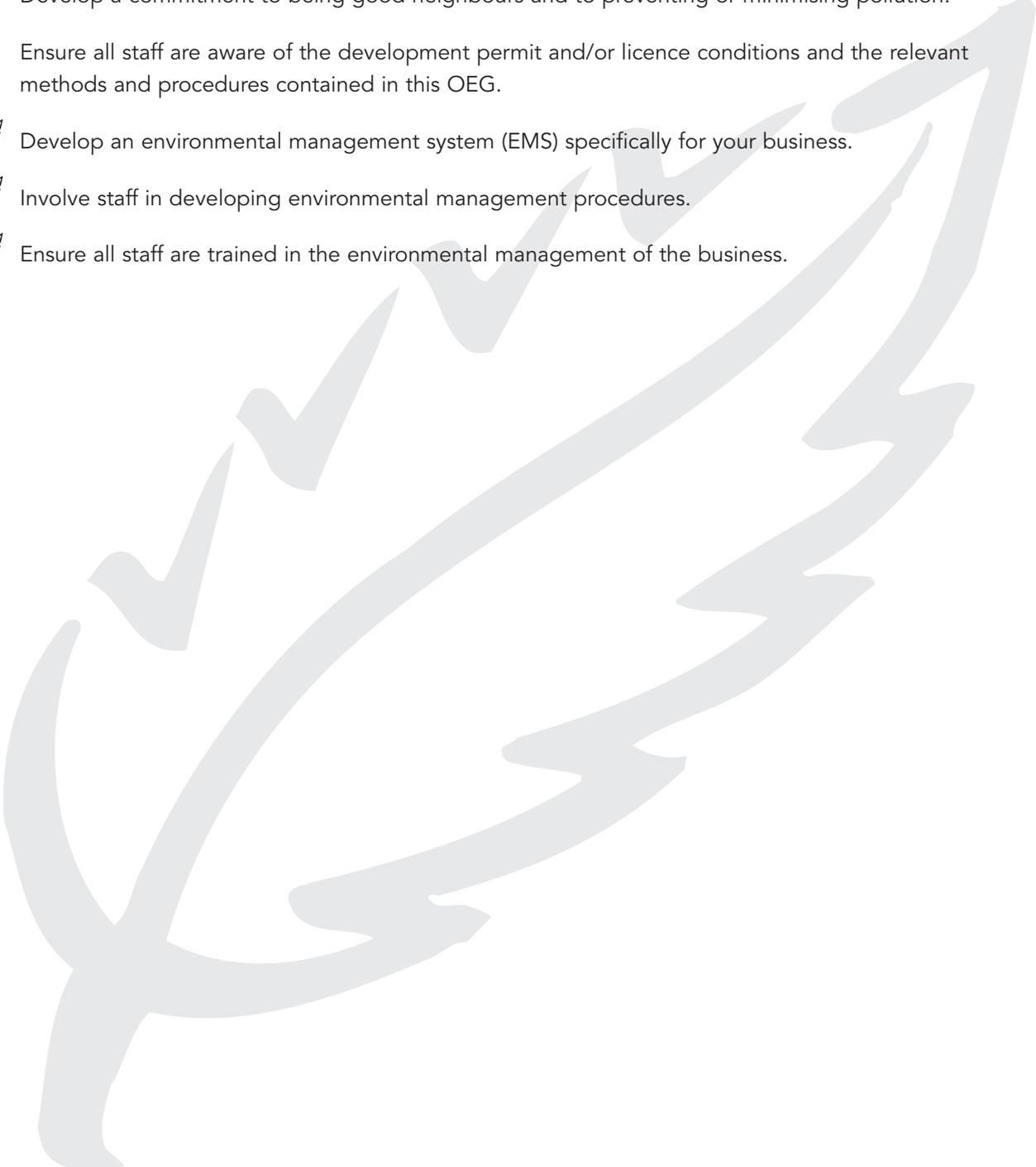
Develop an environmental management system (EMS) specifically for your business.



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 licence/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 licence conditions and implement best practices



Develop an EMS to ensure environmental performance and compliance with licence/approval 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 which 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.



MOTOR VEHICLE REPAIRS (PERMANENT AND MOBILE) PROCESSES AND MANAGEMENT

Mobile Vehicle Operations

Operators of mobile businesses have an equal responsibility to ensure that their operations do not cause pollution. All waste (liquid and solid) and wastewater from any mobile servicing, repairs or maintenance work must be collected and managed as described in this guide.

Although mobile operators must comply with the general requirements there are some additional requirements listed in the following sections.

For further information, including disposal advice, contact the Council.

Vehicle Servicing and Maintenance

Protect stormwater, groundwater and land from contamination

- Maintain impervious bunds around all stored oil (including waste oil) and solvent containers. Cover or roof any outside storage area.
 - Cover all stored oils (including waste oils) and solvents.
 - Place a drip tray under vehicles to catch spent oil, solvents or detergents.
 - Use suitable absorbent, including biodegradable agents, to clean up liquid spills (refer to Solid Wastes section).
 - Collect and store waste oil in appropriate enclosed containers for recycling. Contaminated oil is to be disposed via a licensed waste removalist.
 - Always drain used oil filters and collect oil for recycling.
-  Appoint a staff member to regularly monitor liquid level in containers to avoid any overflow and to detect leakage. A dipstick can be used for this purpose.

Mobile operations

- Use an impervious groundsheet or other waste container during any maintenance or repair of a vehicle.

Note: The groundsheet or waste container must be large enough to cover the whole component or system of the vehicle that is being worked on.

- Clean the used groundsheet or waste container using dry methods or in such a manner that does not contaminate stormwater or the ground.
- Use a waste oil collection tray during any oil change service to avoid oil spillage.



Minimise the risk of fire hazards

- Avoid the use of sawdust or other readily combustible absorbents to clean up flammable liquid spills.

Note: Oily and greasy rags and oil-soaked sawdust can spontaneously combust if stored in a confined space.

Protect the air from particles and gaseous emissions

- Never burn oily/greasy rags and paper, oil-soaked sawdust, plastics and rubber. Wrap and place waste materials in an industrial bin.

Mobile operations

- Collect and bag dust accumulated during the operation and dispose in an industrial waste bin.

Minimise waste and site contamination

- Store batteries that are damaged and/or unsuitable for reuse under cover and in a spill tray until a reputable recycler collects them.



Recycle waste oil filters and oil.

- Never place any containers or vessels containing residual oil and fluid in industrial waste bins unless drained and cleaned.

Mobile operations

- The following activities are **prohibited** in mobile operations unless the operator can demonstrate that all wastes generated during the operation can be collected and disposed of properly:
 - engine reconditioning (involving the removal of the engine)
 - removal of sump
 - removing and opening engine blocks
 - degreasing, cleaning or steam cleaning of engine or engine bay.

Parts Cleaning and Vehicle Washdown

Minimise VOC (Volatile Organic Compound) emissions into the atmosphere

- Volatile liquids such as hydrocarbon solvents:
 - must be stored in a covered container to prevent evaporation into the environment



should be pumped instead of poured



reuse or recycle solvent wherever possible



return solvents that are unsuitable for reuse by the operator to a reputable solvent recycler.



Prevent contamination of stormwater, waterways, groundwater or soil and damage to the sewerage system

Wastewater from vehicle washdown must not drain to stormwater.

- Never discharge wastewater, or let it escape, to the stormwater drainage system or the surrounding land.
- Carry out any washing in a covered and impervious area. It must be adequately bunded and drained to a holding tank or the sewer through a trade waste approved treatment system (usually an oil/silt interceptor trap or separator). The traps can be installed above or below ground as permanent or mobile installations (eg. when premises are leased a mobile system may be preferred).
- Direct wastewater to the sewerage system under the conditions of a Trade Waste Permit.



For wastewater holding tanks, use quick-break degreasing compounds and detergents to reduce emulsification of oils and other hydrocarbons.

- Collect wastewater that is not reused, recycled or disposed of to sewer and dispose via a licensed waste removalist.
- Ensure ongoing maintenance of oil/silt interceptor trap/separator including the removal of sludge by a waste removalist.

Mobile operations

- Collect wastewater and other liquids from cleaning and dispose of properly. Liquid wastes must not spill, flow or drain on to the ground or to stormwater.

Prevent contamination of stormwater and minimise water usage

- In locations not serviced by Council sewerage system, collect the wastewater in a sump for either:
 - Disposal via a licensed liquid waste removalist
 - treatment and reuse (refer to Appendix 5).



Recycle and reuse wastewater from on site treatment systems in other areas of the operation. This will minimise water usage and the associated costs.

Minimise environmental harm from potentially harmful cleaning compounds



Use environmentally friendly cleaners and avoid chlorinated solvents such as 1,1,1 trichloroethane (TCA) and methylene chloride. Water-based cleaners (e.g. alkaline degreasers/detergents) are best.

Note: The solvent 1,1,1 trichloroethane is a controlled substance and must be reclaimed (see Schedule 2, Environment Protection Regulation 1998).



Where possible, clean parts with a brush rather than with solvents and aqueous degreasers such as alkaline or caustic soda.



Use water pressure cleaning where suitable.



Radiator Repairs

Prevent radiator coolant (such as glycols), heavy metals, sludges and contaminated water entering the waterways and surrounding ground

- Radiator coolant can be:
 - directed to the sewerage system under the conditions of a Trade Waste Permit
 - collected and disposed of via a licensed waste removalist
 - 🌿 stored separately in durable, enclosed containers and collected for recycling by a reputable recycler
 - 🌿 treated in the workshop and reused.
- Sludge from acid and alkaline baths must be collected for disposal via a licensed waste removalist
 - 🌿 Recycle solid wastes such as radiator cores and tanks.
- Dispose of caustic solutions that contain heavy metals/sludges from aqueous baths and radiator washings through:
 - a waste removalist
 - 🌿 neutralisation of caustic solutions, separation of oily sludges and reuse of process water.
- Dispose of non-hazardous solid wastes and hoses to an industrial bin.

Mobile operations

- Radiator coolant and other associated waste solutions must be collected and stored in:
 - appropriate enclosed containers before disposal to the sewerage system at a motor vehicle workshop, under the conditions of a Trade Waste Permit
 - 🌿 appropriate enclosed containers for collection via a licensed waste removalist
 - 🌿 appropriate enclosed containers for recycling.

Brake Fluid

Prevent brake fluid entering the stormwater system, contaminating the waterways and the ground

- Brake fluid can either be:
 - stored separately in appropriate enclosed containers in a controlled area and disposed of via a licensed waste removalist, or
 - 🌿 stored separately and collected for recycling and reuse



Spray Painting and Panel Beating

Protect humans and the environment from hazardous effects of spray painting and panel beating operations

- Refer to *Spray Painting and Panel Beating* section for details of acceptable practice for spray painting and panel beating in the motor vehicle repairs industry.

Abrasive Blasting

Prevent dust and particles escaping into the environment from abrasive blasting operations

- Never conduct abrasive blasting operations (particularly dry blasting) for motor vehicle repairs out in the open, where it may cause dust and noise nuisance to neighbouring premises and contaminate soil and stormwater.
- Refer to the latest Operator Environmental Guide – *Pollution Solutions for Abrasive Blasters* for details of acceptable practice for abrasive blasting in the motor vehicle repairs industry.

Automotive Air Conditioning

Prevent release of Chlorofluorocarbons (CFCs) and R12 gases to the environment (Schedule 2, 3, 4, 5, 8 and 9 Environmental Protection Regulation 1998)

- Only people with appropriate qualifications should handle air conditioning refrigerant gases and ozone-depleting substances. These should be handled in accordance with the '*Code of Practice for the Control of Chlorofluorocarbons from Motor Vehicle Air Conditioners*' and with the *Environmental Protection Regulation 1998* at all times.
- Always reclaim refrigerant gases rather than discharge to the atmosphere.



PANEL BEATING AND SPRAY PAINTING PROCESSES AND MANAGEMENT

Surface Cleaning and Preparation

The by-products of surface preparation (e.g. sanding and filling) and cleaning of vehicles and vehicle parts that have environmental risks include:

- fine dusts
- water runoff from washing
- dirty stormwater runoff from the use of open aprons
- noise from equipment, powered tools, compressors and even loud radios.

Prevent contamination of stormwater and minimise liquid trade wastes (wastewater), airborne dusts, water usage, labour and disposal costs

- Never discharge wastewater, or let it escape, to the stormwater drainage system or onto the surrounding land.
- Bund and roof work areas.
- Wet areas are to be impervious (e.g. concrete floors).
- Drain water runoff or drainage from rubdown, washing or wet sanding to a suitable sump, holding tank or the sewerage system via a trade waste approved interceptor.



Alternatively, pump washdown waters from a sump and treat (e.g. filtration, settling, aeration and chlorination) for reuse.

- A licensed waste removalist can also dispose of wastewater from a sump or holding tank. This is essential in any unsewered areas.



Use a wet sponge and a bucket to wet sand prepared surfaces. Then use a wet/dry vacuum cleaner with bag filter to collect the sludge and dust instead of sweeping and hosing down with water. Bag the dust or dried sludge before placing in the industrial bin for disposal to landfill.



Use tools connected to an efficient dust extraction system when dry sanding and grinding.

- Always conduct abrasive blasting, particularly dry blasting, in an enclosed booth or chamber.

Noise control

- Control loud mechanical noises (and vibration), power tools and compressors. These can disturb the neighbours during panel beating activities (refer to Noise Management section).

Minimise air emissions and oils in wastewater

- Surface and parts cleaning often requires the use of organic solvents, degreasers and detergents. Control the use of these to prevent solvent vapours and emulsified oils in wastewater.



- Collect solvents which are unsuitable for reuse in sealed containers for recycling either:
 - internally (if cost effective)
 - through a licensed solvent recycler.



Use 'quick-break' degreasing compounds and detergents to reduce the emulsification of oils and other hydrocarbons where it is necessary to clean oily or greasy parts. Check with your supplier on the availability of these products.

Spray Painting

Spray painting involves the use of liquid and solid formulations that consist of paints, lacquers, powder coatings, surface preparation products, removers, finishes, solvents and thinners.

Some paints consist of a base and separate hardener pack (two-pack paints e.g. polyurethanes). Paints or coatings may be baked or cured at elevated temperatures to increase drying or retention times for polymer coatings.

Environmental risks are related mainly to the volatile solvents and fine particles (e.g. pigments and resins) produced by spray painting.

Paint Mixing

Minimise solvent exposures

- Conduct paint mixing and batch preparation in a well-ventilated room.



Position a vapour extraction inlet to draw vapours away from the operator and connect to a filtered extraction system such as the spray booth ventilation system.

Spray Painting Guns

Reduce overspray wastes and air emissions

- Use efficient spray painting equipment (transfer efficiency > 65%) such as high volume low pressure (HVLP) spray guns and airless electrostatic spray guns. Their use will substantially reduce solvent VOCs emissions as well as paint use and operating costs.

Spray Painting Outside Workshop

Prevent air emissions

- **No** spray painting is permitted outside the workshop, other than touch-ups including scratches, small dents and stone chips. Where a touch-up is done it must not cause an environmental nuisance.

Note: Never spray paints containing isocyanates (e.g. some two-packs) and/or lead outside of a fully enclosed spray booth.



Spray Painting Inside Workshop

Prevent air emissions

- Spray painting is only permitted outside a fully enclosed spray booth for small jobs. That is if the application rate is < 1 litre/hour and the individual item being sprayed will require a maximum of 0.1 litre of paint. Always confine such spray painting activity to the workshop.
- Discharges or over-spray must not escape through workshop doorways and windows.
- In certain circumstances alternative control measures may be permitted subject to approval through your license conditions.

Spray Painting Booths

Control air emissions to meet air quality standards

- Install a spray painting booth with air emission controls for spray painting as defined in Appendix 1.

Ensure proper functioning of the spray booth

- Properly and regularly maintain filtering devices as per manufacturers' advice and specifications or as required for effective operation. Points to watch are:

Water Scrubber

- sprays must function correctly
- make-up water float level must be correct
- manometer must be fitted to indicate negative pressure between the entrainment and distribution plates
- follow suppliers' recommendations on addition of water and chemicals.

Dry (Fibre) Filter

- filter must fully cover support frame spaces
- dial gauge or manometer must be fitted to indicate static pressure drop and replacement of filters
- spare filters must be kept on the premises.

Ensure proper disposal of waste material

- Collect accumulated sludge from any wet scrubber systems for recycling, or dispose using a licensed waste removalist.
- Collect waste paints, thinners and solvents in covered containers either for recycling or for disposal through a licensed waste removalist.



Spray Equipment Cleaning

Minimise VOC emissions, the generation of hazardous wastes and labour costs

- Use a gun wash station or similarly effective equipment for the cleaning of spray equipment. Scrape the paint cups free of residual paint with a plastic spatula before cleaning equipment.
- Store all volatile solvents such as paint thinners and gun wash, in covered containers with taps to avoid the need to pour solvents.
- Store all contaminated and spent solvents used for cleaning equipment in sealed drums for:
 - disposal by a licenced waste removalist
 - 🌿 recycling via a reputable solvent recycler
 - 🌿 onsite recycling and reuse.

Note: The above control measures are the minimum requirements for spray painting operations. Under some circumstances such as large scale operations in sensitive areas and where complaints have arisen from the operation, more stringent standards may be applied, including modelling, evaluation and monitoring.



MOTOR RACING PROCESSES AND MANAGEMENT

Site Management

Overall site management is required for motor racing to manage the impacts from different activities including:

- excessive noise emissions from vehicles
- dust emissions from access roads, parking, transport and loading of vehicles (e.g. trailers), marshalling and racing
- pollution from motor vehicle maintenance
- human and environment risks from refuelling and storage of fuels

The details for acceptable practices for motor vehicle maintenance and repair are outlined in the preceding chapters (*Motor Vehicle Repairs [Permanent and Mobile] Processes and Management and Panel Beating and Spray Painting Processes and Management*). This includes details of spray painting booth requirements and acceptable surface preparation processes.

The following compliance measures are also required.

Vehicle Tune-Ups and Maintenance

Prevent the contamination of stormwater, soil and groundwater

- Always carry out vehicle maintenance and servicing, **including refuelling**, in a dedicated area. Any liquid spillages in such areas should be cleaned up immediately and otherwise prevented from contaminating stormwater or ground.
- Never tip waste oils, fuel and liquids down sinks and stormwater drains, nor pour onto the ground or into trenches.
- Provide and require participants to use a central point recycling facility for waste oils and coolants (this improves the economic viability of recycling).

Stormwater Management

Avoid sewerage system overload

- Install and maintain interceptor traps for stormwater runoff containing or likely to contain oils, silt or wastes from large open areas. Council approval for stormwater control is required.



In outdoor motor racing, include a *stormwater management plan* as a sub-plan in the site's environmental management system.



Noise Management

Prevent nuisance and unreasonable noise

- Ensure the set up of amplification equipment used at the event minimises the noise impact on residential premises. The operator should ensure that:
 - any presentation podium and associated speakers face away from nearby residential areas
 - all speakers are directed downwards.
- Conduct regular noise monitoring of events or activities and maintain records. Any noise complaints are to be investigated and recorded. Introduce noise controls when excessive noise has been shown.

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



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 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

- Maintain 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.
- Batteries must be stored undercover and in a spill tray. Return batteries unsuitable for reuse to a reputable battery recycler.

Storage Inside a Vehicle (mobile operators)

Prevent contamination of soil and water with hazardous chemicals

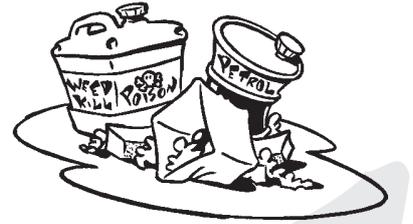
- All containers containing liquids or gases (e.g. refrigerant gas bottles) must be secured inside the van during transit. This will prevent them tipping or rolling over.
- Fit containers of chemicals (e.g. oil, solvents and detergents) with taps. Position metal trays under the taps to catch any drips. Immediately clean up any spills.
- The vehicle must be fully banded and sealed. This will prevent liquids from spilling from the vehicle.



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 render 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.
- Put only solid inert waste in industrial bins.

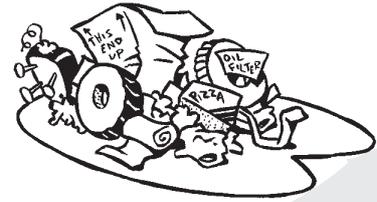
Protect air quality

- 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 3) and must be disposed through a licensed waste removalist.
- Keep proof of proper disposal of hazardous wastes for presentation to Council officers. Proof 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
- radiator cores and parts
- brake and clutch parts.

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, thinners, paints 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.

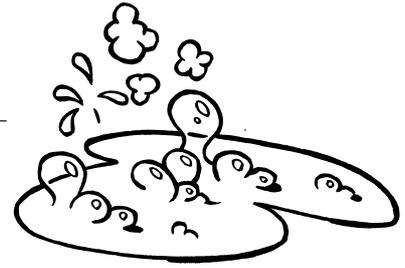


LIQUID WASTES

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 3) 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 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 licence conditions (Trade Waste Permit)

- Obtain a Trade Waste Permit from the 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 (e.g. oily waters).
- 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

- As a guideline the minimum treatment required for discharge to sewer is an oil/silt interceptor trap. For more information contact the Council.



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 5).



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 solvents and 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*.
- Contain any contaminated stormwater (e.g. holding tank) and:
 - dispose of by a licensed waste removalist
 -  treat on-site to an appropriate standard for discharge
 -  treat on-site for recycling or reuse (refer to Appendix 5).

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



Stack Emissions

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

- Emissions from this activity (e.g. dusts, solvents or odours) must comply with those outlined in the *Environmental Protection (Air) Policy 1997* or those prescribed by Council.
- Fit emissions stack with an effective rain protection device that does not impede the discharge of exhaust gases from the stack.
- Use air-dispersion modelling to determine:
 -  buffer distances between the activity and sensitive land
 -  optimum stack height and exit velocity.

Maintain air pollution control equipment

-  Examine and review the need for enhanced emission controls annually and if you receive complaints about performance.
- Regularly maintain any emission control equipment such as cyclones, baghouse filters or afterburners as per manufacturers' instructions.
- Immediately replace or repair any emission control equipment that is blocked, frayed, leaking or not functioning within specifications. Spare bags and filters must be kept on-site.

Ensure emissions are below prescribed Air Quality Limits

- Undertake regular monitoring, recording and reporting of air emissions to ensure compliance with the stack emission standards and ambient standards set in the *Environmental Protection (Air) Policy 1997*.
- Install monitoring ports in all stacks and other air emissions discharge points. Refer *AS 4323.1 (1995) - Stationary Source Emissions: Method 1: Selection of Sampling Positions*.
- Keep a register of all recorded emissions and air quality indicator levels measured and have it available for Council inspection.

Dust Control

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 (including spectator areas), dust, powder waste or absorbent clean up materials, before disposing in a covered waste bin.



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

Minimise dust emissions and potential contaminants from exposed surfaces

- Specify speed limits on exposed road surfaces (<40km/hr).
- Regularly water unsealed roads and racetracks (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.

Odour/Volatile Emissions

Reduce odour and volatile emissions to prevent environmental nuisance

- Maintain adequate ventilation and hygiene to reduce the generation of odour.
- Control any exhaust emissions from vehicles to prevent objectionable odours / fumes off-site.



Maintain good housekeeping and cleaning practices.



Use mechanical ventilation systems and activated carbon filters or scrubbers to prevent the release of any uncontrolled and objectionable odours from buildings (e.g. indoor stadium) or rooms.

- Volatile liquids (solvents):
 - must be stored in a covered container and kept cool to prevent evaporation into the environment
-  should be pumped instead of poured.



Avoid use of volatile and odorous solvents, cleaning chemicals or sprays.



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 implemented to reduce noise emissions and therefore noise complaints.
- It is best to avoid using extension telephone bells and public address systems but if they are considered necessary keep them at the lowest possible audible level. 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. Locate equipment or operations 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 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.

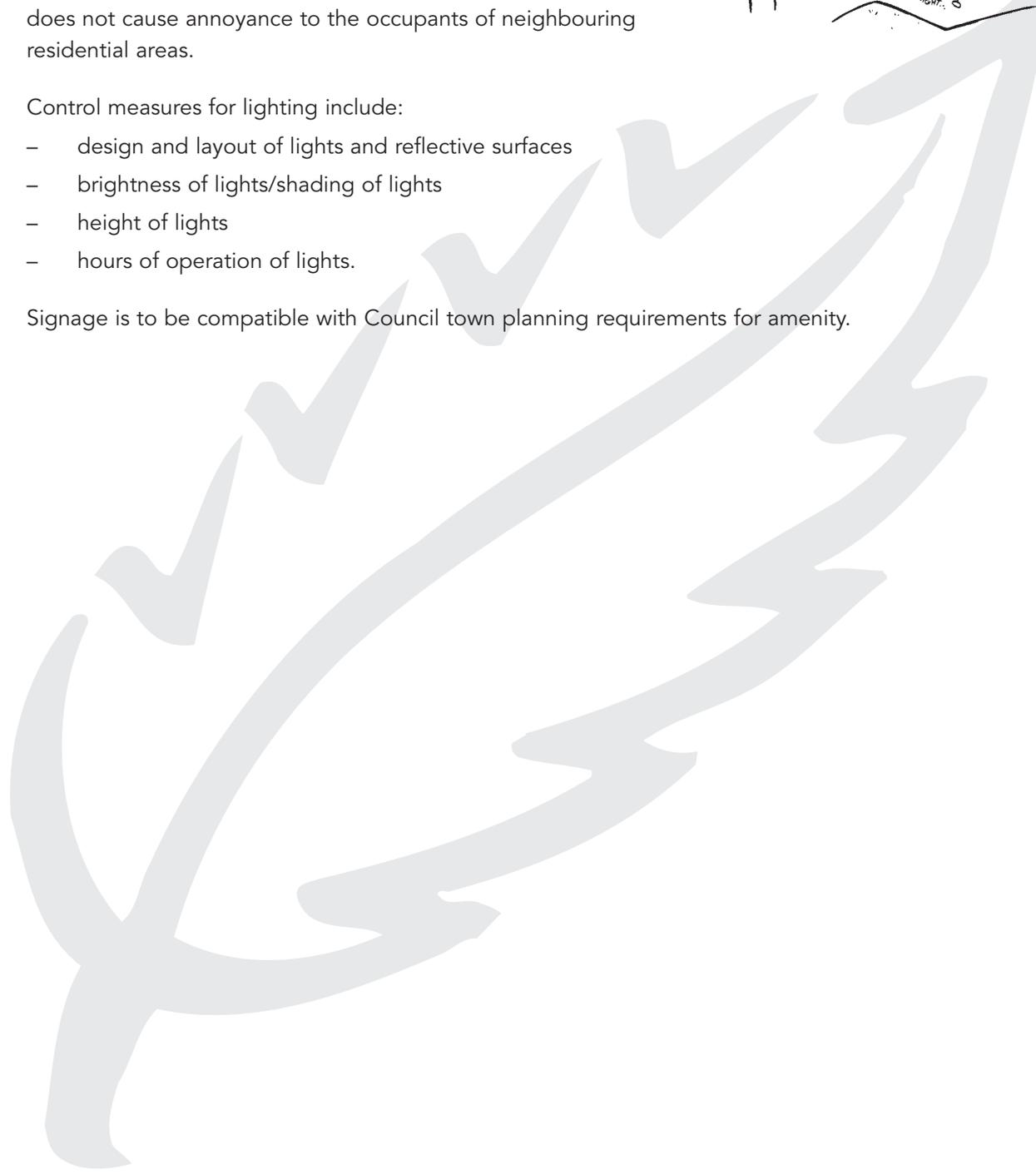
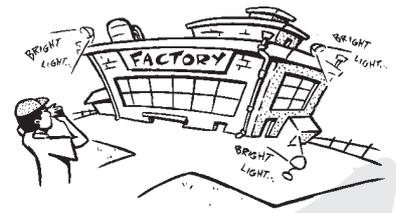
Operators should be aware of the cumulative effects of noise levels on the receiving environment, and where practical, take appropriate steps to reduce noise levels from their operation, particularly before 7am and after 6pm.



VISUAL AMENITY

Prevent environmental nuisance

- 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.



APPENDIX 1 – SPRAY BOOTH REQUIREMENTS

- Spray painting must be conducted in a fully enclosed booth that has an exhaust fan and a filtration system with a particle removal efficiency of at least 90%. The following table lists preferred filtration methods.

| APPLICATION RATE | FILTRATION SYSTEM | FILTRATION EFFICIENCY |
|---------------------|--|-----------------------|
| 0-4 litres per hour | Dry (fibre) filter, water scrubber | > 90% |
| > 4 litres per hour | Water scrubber, activated carbon adsorption & dry (fibre) filter | > 90% |

Overspray from large production can rapidly block dry filter pads, therefore where paint application rate is more than 4 litres/hour a water scrubber is the preferred filtration system.

- Exhaust gases must be discharged vertically through a stack with:
 - an internal diameter of not less than 0.5 metres and
 - either 8 metres high above the ground or 4 metres higher than the highest ridgeline of the surrounding buildings within 15 metres of the stack, whichever is higher.

Exit velocity of the exhaust gases must not be less than 10 metres per second. The stack must be fitted with an effective rain protection device that does not inhibit the vertical flow of gases.

A monitoring port must be installed at the exhaust stack. Refer to *Australian Standard AS4323.1 (1995) - Stationary Source Emissions. Method 1: Selection of Sampling Positions.*

The above conditions may be adjusted for particular circumstances if warranted by the risks involved. Large continuous spray painting operations and operations very close to sensitive areas may be required to install more advanced filtration system (e.g. activated carbon filter) to reduce the total volatile organic compound (VOCs) levels in the exhaust gases. These operations will be assessed on a case by case basis.

- For spray booth design requirements, refer to *Aust. Standard (AS/NZS 4114.1 and 4114.2:1995) for Spray Painting Booths* and check with the Queensland Division of Workplace Health and Safety.



APPENDIX 2 – POWDER COATING BOOTH REQUIREMENTS

Guidance on the construction of Spray Booths for Powder Coating should be taken from the specifications as detailed within AS 'Safe Application of Powder Coatings by Electrostatic Spraying'.

The design of the powder-coating booth should be such that airborne powder must not escape from the booth into the workplace. The following table lists general requirements:

| AVERAGE AIR VELOCITY THROUGH EACH BOOTH OPENING | STACK REQUIREMENTS | | FILTRATION EFFICIENCY |
|---|--|---------------|-----------------------|
| | HEIGHT | EXIT VELOCITY | |
| < 0.40 M/S | <ul style="list-style-type: none"> • 8 metres above the ground or • 4 metres above the highest ridgeline of the buildings (which ever is highest) | > 10 m/s | > 90% |

Where two or more spray guns operate simultaneously, the booth apertures through which the powder is sprayed should be located directly opposite each other and should not be located within 600 mm of each other when measured horizontally.

Exhausted air/powder coat mix collected within the spray booth should be removed from the booth through a filtration system. This filtration system should consist of a cyclone filter and/or a wet scrubber, textile or cartridge filter.

Exhausted air quality from stacks venting spray booths will be required to comply with the standards prescribed by the *Environmental Protection (Air) Policy 1997*.

Consideration must be given to hazards due to dust explosion and fire associated with the application of powder coating.

Consideration should be given to adjacent buildings and structures when designing exhaust stacks, to ensure that the dispersal of effluent does not adversely impact on the amenity of, or cause an environmental nuisance to persons occupying such buildings or structures.

A monitoring port is to be installed within the exhaust stack.

Spare filters should at all times be kept on site. Weekly inspections of the filtration system should be completed to ensure that the system is not leaking.

Leaks are to be repaired immediately and maintenance records kept by the operator. Filters should be wrapped in plastic bags prior to disposal to prevent escape of dust.

Booths should be positioned within the work area so as they are not affected by any air draughts flowing through the building, thereby potentially affecting the overspray capture efficiency within the booth.



APPENDIX 3 – 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) that are known or suspected to have environmental or health effects. Examples of VOCs include solvents, thinners, acrylic lacquers and fuels.



APPENDIX 4 – 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 5 – ON-SITE TREATMENT AND REUSE OF WASTEWATER OR STORMWATERS

- 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.

