Environmental Management | Mirvac Minimum Requirements

1. Purpose & Scope

The purpose of this document is to assist staff with preventing pollution and eliminating, or minimising, the risk of harm to the environment, as a result of Mirvac's activities, so far as is reasonably practicable.

This document applies to all workplaces under the management or control of a Mirvac entity.

2. Minimum Requirements

Mirvac personnel and Service Providers must have processes in place to ensure compliance with:

- the Critical Controls (refer Section 3);
- relevant Forms (refer Section 4);
- all relevant Legislation, Codes of Practice and Standards (refer Section 7); and
- product guidelines for installation, use or maintenance from the Original Equipment Manufacturer.

3. Critical Controls

- **Risk Assessment:** Environmental risk management must be informed by the Hierarchy of Controls, with preference given to elimination first and then substitution, isolation engineering controls – refer Section 9. Hierarchy of Controls Triangle. A risk assessment must be undertaken before acquisition, construction, operation or demolition of an asset or on a worksite, such assessment to include:
  - determination of environmental aspects and impacts of associated activities;
  - stakeholder analysis to identify external and internal environmental issues;
  - compliance and reporting objectives;
  - a site assessment to identify potential risks to the environment, health and safety and determining control measures needed before construction or work begins. This includes the determination of the presence of any potential contamination on the site;
  - ongoing management of work, activities and environmental impacts on the site, including site fill, waste, emissions and discharges;
  - management of environmental aspects, impacts and risks (for the life of the project, construction, asset; product or waste); and
  - management measures to be implemented to mitigate linked source, receptor, and exposure pathways.

  Those environmental aspects, impacts, hazards and risks must be included within the Risk and Opportunity Register.

  The Risk and Opportunity Register must also include:
  - the controls to be implemented in relation to the identified environmental aspects, impacts, hazards and risks;
  - appropriate reporting and verification processes (including regulatory or local authorities);
  - contingencies and emergency response where controls may not be effective, including spill response; and
  - reporting, communication and complaint resolution.

- **Incident Investigation**: Business Units must have a process in place to identify environmental incidents and determine the required level of incident investigation required.

  The following incidents are reportable to the relevant authorities:

  <u>NSW and QLD:</u>

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Document Maintained by: MC
Last Revised Date: 12.07.18
Version: V1
Document Number: HSE:GR:MC:3.1.8:MMR:0154

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- pollution incident causing or threatening material harm to the environment
- event or change in condition of contaminated land likely to cause material harm to the environment.
- Additionally, a licence or authority may also contain a reporting obligation requiring the reporting of, for example, non-compliance with a condition of the licence or authority, and, in NSW, a person whose activities have contaminated land must also report under the *Contaminated Land Management Act 1997*, regardless of whether there has been a particular, reportable incident.

VIC:

If your licence contains condition 'G2 Licence non-compliance and notification' you must immediately notify EPA of non-compliance with any condition of your licence. This condition aims to ensure that EPA is aware of any potential negative environmental impacts and can respond appropriately. To show compliance with this condition you must, as a minimum, notify EPA at the earliest possible moment after you become aware of:

- any discharge to air, water or land that is not covered in your licence
- an imminent threat to the environment or human health
- a situation that may affect or generate complaints from neighbours
- any other breach of your licence obligations.

WA:

- Discharges of waste likely to cause pollution or environmental harm
- Known or suspected contaminated sites

- **Air Quality:** The creation and emission of gases, pollutants, dust and other suspended particulates including the release of fumes or odours from a Mirvac workplace must be minimised and comply with legislative requirements. The impact of activities on indoor/outdoor air quality at the workplace must be considered, and where identified as a risk, controls implemented.

- **Habitat and Conservation:** Areas of environmental sensitivity must be identified and protected from potential environment impacts associated with Mirvac activities.

  These may include:

  - plant communities, areas of protected or threatened flora species, or single trees to be preserved;
  - protected and endangered fauna habitats or species;
  - Aboriginal or European heritage to be preserved; and
  - waterways or other wetlands.

  Control measures to minimise the potential risks and environment impacts to flora and fauna habitats or other areas of conservation must, where relevant, include:

  - sedimentation or contamination control measures to be erected throughout the workplace as works progress, e.g. swales, filter strips, sedimentation ponds or other booms or barriers.
  - induction of Mirvac personnel and Service Providers (contractors and suppliers) on any habitat and conservation rules for the workplace.
  - for construction work, no materials, vehicles or equipment must be placed temporarily or permanently, within the drip-line of any flora (tree) to be retained with protective fencing or other barriers installed.
  - storm water inlets to be protected during construction activities, e.g. concrete pumping.

- **Acid Sulphate Soils:** The potential presence of acid sulphate soils must be tested for prior to undertaking excavation activities in coastal areas where iron sulphide sediments are suspected. Potential acid sulphate soils can be identified using the field test for peroxide oxidised pH (pHFOX), and confirmed by laboratory analyses. Core samples must be obtained with as little disturbance of the soil profile as possible.

  If potential acid sulphate soils or actual acid sulphate soils are identified at a construction or development site, control and monitoring activities are included in the Risk and Opportunity Register

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for the project. A site specific management plan must be developed using the Acid Sulphate Soils Management Plan Template or equivalent in consultation with an environmental service provider, which includes handling and storage (stockpiling) and removal.

The plan must include an appropriate management strategy to prevent or limit the creation of actual acid sulphate soil; or where they arise neutralise the soils for re-use; or ensure correct off-site disposal to a licensed waste facility.

Those working on the site with the potential to expose such soils must be provided with appropriate training / knowledge of the potential environmental impacts caused by any potential exposure.

- **Asbestos Containing Materials (ACM):** Where there is a potential or confirmed identification of ACM products at a construction or development work area the Asbestos Management MMR must be referenced and complied with. Please also refer to the waste disposal obligations below.

- **Water Quality:** Sites must manage discharge/runoff of sediments and other pollutants to a water way or water body in accordance with any legislation, Codes and Standards, consent or approval authority. Considerations must include water quality of any run-off or other discharge (e.g. dewatering), hydrology and flooding particularly during wet weather and the stability of stockpiles and project terrain.

  Monitoring of discharge must be undertaken in accordance with Local Government, and legislative requirements, Standards and Codes and achieve:
  - site specific requirements for the water;
  - requirements of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality;
  - local / legislative requirements.

  In addition, Mirvac specific requirements must also be achieved:
  - a pH in a range of 6.5 to 8.5 - a measure of acidity or alkalinity of the water;
  - a Turbidity range of <50 NtU (Nephelometric Turbidity Units) or no more than 10% higher than the turbidity in the receiving water - a measure of water clarity and how much light is able to penetrate through a column of water;
  - suspended solids not exceeding 50 parts per million;
  - no visible litter or other floatable materials such as foams or scums;
  - no visible film of oil, grease and petrochemical products or odours from such products at the point of entry; and
  - use a flocculant such as Alum, added to the water in order to remove suspended sediment, bacteria and other elements by settling them out.

  Where discharge is to occur into environmentally sensitive areas, e.g. marine ecosystems, monitoring must be undertaken by an independent Service Provider accredited by the National Association of Testing Authorities (NATA). Monitoring records must be retained at the site using the Water Quality Register.

- **Noise and Vibration:** Noise and vibration must be controlled in accordance with any legislation, Codes and Standards, consent or approval authority including during working hours for construction or a development.

  Construction managers must review work practices at the approval stage through the D.O.O.R. and Risk & Opportunity Register processes and apply appropriate controls. They must also consult with and notify the community and any impacted stakeholders, on potential noise and vibration impacts. All workplace personnel must be appropriately trained in noise and vibration management – as a minimum including the content in Appendix 2.

  Whenever a 'sensitive receiver' is identified in relation to a proposed workplace, background noise monitoring should be initiated prior to any works starting.

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As a minimum the following standards must apply:

- working hours, noise levels and vibration levels as specified by any legislation, Codes and Standards, consent or approval authority;
- the maximum noise level emitted from any plant, equipment or process in operation (as measured over a 15 minute period) must not exceed those detailed in Appendix 1;
- reversing alarms must not exceed background noise level by more than 10 dB(A);
- working hours for a development must not exceed any limits within any legislation, Codes and Standards, consent or approval authority. Where no limits are specified, then working hours for a development must not exceed:
  - [background + 5dB(A)] for workplaces with a duration of more than 26 weeks;
  - [background + 10 dB(A)] for a duration of 4 – 26 weeks; and
  - [background + 20 dB(A)] for a duration of less than 4 weeks.

Community contact in relation to noise or other issues at a Mirvac workplace must be recorded on the Community Contact Notification and actioned with 48 hours of the contact. Completed registers must be forwarded to the Business Unit HSE Manager.

- **Spill Management:** Where the potential for a spill(s) is identified in the Risk Assessment, appropriate spill kit(s) must be provided and signposted. Spill kits must be inspected at maximum monthly intervals and following any spill response.

  Basic spill kits come in wheelie bins or satchels and typically contain:

  - bags containing bulk absorbent granular material to soak up minor spills;
  - booms to contain larger liquid spills;
  - absorbent pads to contain minor spot spills;
  - drain covers or seals to stop the spill getting into the storm water system;
  - personal protective equipment (PPE) like protective gloves and eyewear; and
  - containers or bags in which to place collected spill and clean-up materials.

- **Spoil:** Where spoil is identified, environment barriers must be provided to retain stockpiles or other disturbed earth or to protect overhead or adjacent flora. Identification of hazardous soils (e.g. Acid Sulphate Soils or groundwater contamination) or hazardous materials e.g. asbestos, must be a consideration for all bulk excavation and trenching. Spoil and other bulk loads removed from the workplace must be covered and this requirement must be outlined in the workplace induction.

- **Waste:** Waste generated at the workplace must be avoided or recycled wherever practicable in accordance with the waste management hierarchy detailed in the HSE Risk Management Procedure. Waste targets are >95% diversion of waste from landfill by recycling, reuse, design or other methods.

  A waste management plan using the Waste Management Plan Template or equivalent must be developed for each site.

  The use of materials that are fully recycled or include post-consumer recycled material in production will be considered, wherever practicable, in design stages and into operation of the site. This will consider as a minimum:

  - reducing and reusing products and materials used;
  - alternative products containing recycled material, which conform to the design specification that could be utilised in the works in place of more traditional materials;
  - alternative products with less environmental impact;
  - low emission or low off-gassing products e.g. for paint (and water based / acrylic paints);
  - handling or use of products (e.g. oil based enamel finishes) off site or in a dedicated area ;
  - waste streams which can be recycled and will be actively managed as part of a waste reduction plan;
  - separation bins for workplace waste streams;

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- reuse of material generated (including such material as top soil).

Washout areas must be minimised with water recycling for these activities. There must be dedicated paint wash out areas with specific controls in place to prevent paint wash off onto the ground nearby.

NOTE: Paint sludge must be disposed of by a licensed waste contractor.

Aqueous waste cannot be disposed of as general waste.

Disposal of any waste must be undertaken in accordance with specific legislative requirements, which vary from by State or region of operation. There may also be particular requirements regarding the transportation and disposal of hazardous waste, referred to as prescribed waste in some States, including Asbestos, Lead, Polychlorinated Biphenyls (PCB), Synthetic Mineral Fibre or Paint Sludge (Aqueous Waste). For example, in NSW, the transportation of hazardous waste must be tracked. Copies of all tipping/disposal documentation must be retained at the workplace.

4. Mirvac Forms

Checklists and Permits are to be completed and then authorised by Mirvac representative prior to work
Water Quality Register – Register of water discharge monitoring records retained at the site.
Acid Sulphate Soils Management Plan Template – A site specific management plan in consultation with an environmental service provider.
Community Contact Notification – Record of community contact in relation to noise or other issues at a workplace, forwarded to the Division HSE Manager when completed.
Waste Management Plan Template – for use to develop a waste management plan

5. Roles and Responsibilities

The Mirvac Workplace Manager of each workplace over which Mirvac has control is responsible to ensure workers at the site are aware of and adhere to the performance requirements of this document and responsible to ensure workers are equipped with adequate tools, training, competency and licensing to undertake the work.

6. Training and Competency

Minimum Training Requirements for Environmental Management	
Type of Activity	**Required Training**
Environmental Incident Investigation Level 1,2 incidents	Basic Incident Investigation Training
Environmental Incident Investigation Level 3,4 incidents	Proprietary incident Investigation Training – ICAM, Tap Root
All Mirvac employees	Environmental Awareness Training (LOTO – This Changes Everything)
Independent experts conducting environmental monitoring activities	Degree qualification in relevant field and experience in conducting the relevant environmental monitoring

7. Relevant Legislation, Codes of Practice and Standards

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NSW:	Contaminated Land Management Act 1997 (NSW) Protection of the Environment Operations Act 1997 (NSW) Protection of the Environment Operations (General) Regulation 2009 (NSW) Protection of the Environment Operations (Clean Air) Regulation 2010 (NSW)
Vic:	Environment Protection Act 1970 (Vic) Environment Protection Act 2017 (Vic) Environment Protection (Residential Noise) Regulations 2008 (Vic) Environment Protection (Industrial Waste Resource) Regulations 2009 (Vic)
Qld:	Environmental Protection Act 1994 (Qld) Environmental Protection Regulation 2008 (Qld) Environmental Protection (Water) Policy 2009 (Qld) Environmental Protection (Noise) Policy 2008 (Qld)
ACT:	Environment Protection Act 1997 (ACT) Environment Protection Regulation 2005 (ACT)
WA:	Environmental Protection Act 1986 (WA) Environmental Protection Regulations 1987 (WA) Environmental Protection (Noise) Regulations 1997 (WA) Environmental Protection (Abrasive Blasting) Regulations 1998 (WA)
Dept of Agriculture and Water Resources - Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000	
Dept of Transport NSW- Concrete Washout: Guideline 3TP-SD-112/2.0	
Dept of Environment & Conservation NSW - Assessing Vibration: Technical guideline 2006	
EPA Vic - Environmental Guidelines for Major Construction Sites 1996	
EPA Vic - State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1	
EPA Vic – Acid sulphate soil and rock: Information Bulletin 2009	
Work Safe Vic – Contaminated construction sites - Construction and utilities: Industry standard 2017	
Department of Environment and Climate Change NSW - Interim Construction Noise Guideline 2009	
EPA Vic – Bunding: Guideline – Publication 347.1 – 2015	
AS 4976: *The removal and disposal of underground petroleum storage tanks*	
AS 2436: *Guide to noise and vibration control on construction, demolition and maintenance sites*	

8. Additional Information

Asbestos Management MMR
Incident Management Procedure
Waste Management Mission Statement
Plant, Equipment and Tools MMR

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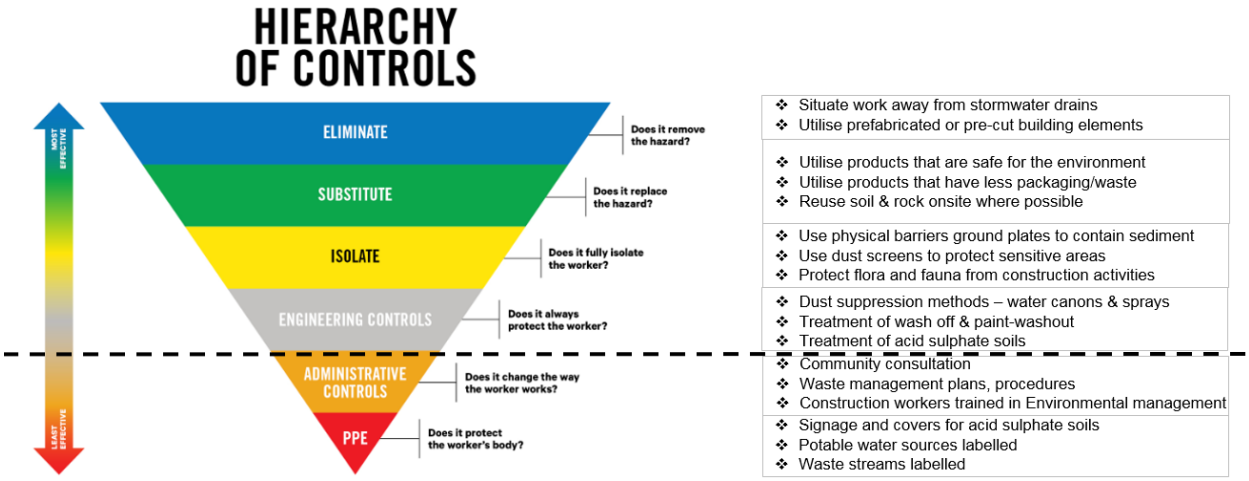
9. Hierarchy of Controls Triangle – Environmental Management



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10. Appendices

Appendix 1:

Maximum noise level emissions as measured at the sensitive receiver or nominated occupancy (neighbour or tenancy).	
ITEM	**MAXIMUM NOISE LEVEL**
air compressor	75 dB(A)
crane - mobile	85 dB(A)
crane - fixed	80 dB(A)
chain saws	85 dB(A)
concrete leveller	90 dB(A)
concrete pump	80 dB(A)
concrete saw	80 dB(A)
concrete vibrator	80 dB(A)
drill – air/pneumatic	85 dB(A)
earthmoving machinery	85 dB(A)
explosive power tool	85 dB(A)
generator - diesel	75 dB(A)
jack hammer	85 dB(A)
mechanical broom	80 dB(A)
portable hand tool	80 dB(A)
reversing alarm	90 dB(A)
rock drill	89 dB(A)
spraying machine	75 dB(A)
truck	90 dB(A)
welder	85 dB(A)

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Appendix 2:

Induction / training content to minimise noise related to planned works (construction or maintenance) or emergency works
Commercial radio not audible at boundaries
CB radio to be used with the truck cabin doors closed
No unnecessary loud voices
No foul language
Keep truck reversing to a minimum
Avoid slamming doors
Use noise reduction barriers where required
Trucks and plant not be left idling in streets or sites within close proximity to residential dwellings especially outside of normal working hours unless required to maintain electrical power
Minimise use of engine braking
Extra care to be taken to minimise noise while loading or unloading trucks with materials or equipment
Silencing equipment to be used at all times and under all circumstances
Periodic noise level checks will be carried out by an appropriately qualified Noise Monitoring Technician with calibrated equipment
Community members that will be impacted by planned works outside of normal working hours will be notified in advance of the works taking place

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