

Waste Management Plan v1

ENV-PLA-006



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1 Introduction

Mawsons quarrying and concrete plant operations reuse and recycle the majority of waste that they produce. Waste management is an integral aspect of Mawsons Environmental Management System and risk management framework which ensure that all wastes are stored, handled, and disposed of in accordance with legislative requirements, and in a manner that minimises environmental impact. This plan has been prepared in accordance with relevant legislative requirements and associated standards and guidelines.

2 Purpose and Objectives

The purpose of the Waste Management plan is to describe the wastes generated at Mawsons quarries and concrete plants and management processes that provide for minimisation and appropriate storage, handling, and disposal, in accordance with legislative obligations and industry best practice.

The objectives of the Waste Management Plan are to:

- Minimise the volume of waste disposed to landfill through reducing resource consumption, segregating different waste materials, and reusing or recycling where possible.
- Minimise potential impacts to land and water through poor or improper waste management practices, including potential contamination associated with hazardous wastes.
- Provide clear guidance to Site Managers and Operators regarding appropriate management processes for the different types of waste that may be generated.

3 Definitions

Waste: matter that is discarded, rejected, abandoned, unwanted or surplus, irrespective of any potential use or value.

Industrial Waste: waste arising from commercial, industrial, or trade activities, or from laboratories.

Priority Waste: Refers to waste generated from commercial or industrial sources that are potentially hazardous to humans or the environment and require a higher level of control, or are important in terms of resource efficiency (EP Act S.138).

Recyclable Waste: Refers to materials which can be removed from site and processed for reuse in a different form. Several types of recyclable waste are generated on site, including scrap metal, paper, cardboard, glass, aluminium cans, plastic bottles, poly pipe, batteries, E-waste, cable reels and timber pallets.

General Waste: Non-hazardous and non-recyclable wastes, such as waste generated in kitchens, offices, workshops and crib rooms.

Reusable: Refers to materials that can be used again in the same or a different form.

4 Activities

4.1 Wastes from Quarrying

- Topsoil and overburden removed to expose valuable quarry products.
- Excess groundwater or surface run-off water removed from quarry pit
- Wastewater from washing stones or extracting sand
- Acid sulfate soil
- Oils, oily rags, and parts from equipment maintenance
- Office and lunchroom wastes, including paper, plastic, printer cartridges, packaging, and food scraps.

4.2 Concrete Plant Wastes

- Excess wet concrete
- Excess dry concrete
- Wastewater from rinsing out agitators
- Wastewater from washing trucks
- Wastewater from washing or rinsing plant
- Stormwater contaminated with dust and/or cement
- Oils, oily rags, and parts from equipment maintenance
- Office and lunchroom wastes, including paper, plastic, printer cartridges, packaging, food scraps, and sewage.

5 Existing Environment

Mawsons quarries are generally located in rural areas and concrete plants in rural or industrial areas, with low residential density. Some of Mawsons sites are near significant waterways, and some have residential neighbours reasonably close by.

Site specific waste management maps will show the natural and physical environments where activities are conducted, and include sensitive receptors, waste storage locations, and other waste management controls.

6 Potential Environmental Impacts

Potential impacts from improper waste management include the following:

- Contamination of land
- Groundwater contamination
- Surface water pollution
- Contamination of air (e.g. odour)
- Biodiversity disturbance or degradation
- Altered visual amenity
- Noncompliance with legislative obligations, including license/authorisation conditions
- Unnecessary resource consumption
- Unnecessary use of landfill space

7 Legislative Context

Legislation, regulatory standards, and guidance materials applicable to the management of waste are described in the following sub-sections.

7.1 Commonwealth Legislation

7.1.1 Australian Code for the Transport of Dangerous Goods by Road & Rail

The Australian Code for the Transport of Dangerous Goods by Road and Rail, Edition 7.7, 2020 (ADG Code) is not legislation but is called up in State legislation and, as a result, effectively becomes a legislative compliance obligation.

The ADG Code provides a national system for the transport of dangerous goods, including classification, labelling, packaging, and documentation requirements. It also provides requirements for stowage and segregation.

7.2 Victorian Legislation

7.2.1 Mineral Resources (Sustainable Development) Act 1990

Quarries are required to have a Work Authority issued under the Mineral Resources (Sustainable Development) Act 1990 (MRSDA). A Work Authority can only be granted following approval of a Work Plan developed in compliance with the requirements of the MRSDA, which include identification and minimisation of risks to the environment, the public, land, property, or infrastructure in the vicinity of the activity.

7.2.2 The Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2019

The Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2019 (MRSD(EI) Regs) prescribe the information required in Work Plans (R.8). This information includes a general description of quarry operations relating to waste disposal methods and facilities.

7.2.3 Environment Protection Act 2017

Quarries and concrete plants must comply with the Environment Protection Act 2017 (EP Act). The EP Act imposes a number of Duties that provide for protection of human health and the environment, from the harmful effects of pollution and waste.

The Duties that are particularly relevant to management of waste are:

1. The General Environmental Duty (GED), which requires operators to understand the risks associated with their activities and minimise them as far as reasonably practicable.
2. Duty of person depositing industrial waste, requiring confirmation that the receiver is authorised to receive the waste being deposited.
3. Duty of person managing priority waste, requiring classification, safe storage, and provision of information to transporters.
4. Duty to investigate alternatives to disposal of priority waste, by taking all reasonable steps to identify and assess alternatives to disposal.

The EP Act also contains duties relating to incidents and contamination that may be caused by waste. These are addressed in site-specific environmental management plans.

To meet the obligation to minimise risks as far as reasonably practicable, relevant guidelines and industry standards must be considered. A list of EPA guidelines relevant to the types of waste that Mawsons sites may produce are provided in Appendix A.

7.2.4 Environment Protection Regulations 2021

The Environment Protection Regulations 2021 (EP Regs) provide detailed requirements for classification of industrial waste. Industrial waste is any waste arising from commercial, industrial or trade activities, or from laboratories.

Under the EP Regs a person disposing of industrial waste must classify that waste in accordance with the EP Regs to determine applicable code or codes and whether it is also a priority waste.

Specific clauses require all reasonable steps to be taken to ensure that septic systems are operated so as not to pose a risk of harm to human health or the environment.

7.2.5 Publication 1827.2 Waste Classification Assessment Protocol 2020

EPA Victoria Publication 1827.2 *Waste Classification Assessment Protocol* 2020 is called up by the EP Regs and, therefore, compliance with the Protocol becomes a legislative requirement. This means that waste produced during the course of Mawsons quarrying activities must be classified in accordance with the Protocol.

7.2.6 Preparation of Work Plans and Work Plan Variations: Guideline for Extractive Industry Projects 2020

The Department of Jobs, Precincts and Regions publication *Preparation of Work Plans and Work Plan Variations: Guideline for Extractive Industry Projects* 2020 provides guidance on risk treatments for “rubbish or industrial wastes (as defined by EPA)”. To comply with the GED, this guidance should be considered when determining risk minimisation measures for waste.

7.2.7 Dangerous Goods Act 1985

The objectives of the Dangerous Goods Act include:

- to promote the safety of persons and property in relation to the manufacture, storage, transport, transfer, sale and use of dangerous goods and the import of explosives into Victoria.
- to ensure adequate precautions are taken in the storage and handling of dangerous goods and incidents are reported to relevant parties.
- to provide for sharing of information, allocation of responsibilities, and licensing.

7.2.8 Dangerous Goods (Storage and Handling) Regulations 2012

The Dangerous Goods (Storage and Handling) Regulations sets out specific duties of an occupier of a premises where dangerous goods are stored and handled. These duties include:

- consulting with workers and providing information, training, and supervision
- identification of hazards and control of risks
- preparedness for incidents and emergencies, response, and notification

7.3 NSW Legislation

7.3.1 Protection of the Environment Operations Act 1997

The Protection of the Environment (Operations) (POEO) Act provides for the licensing of quarries (extractive industries), with conditions relating to waste management. It establishes offences for pollution and harm to the environment and imposes a duty to notify relevant authorities of pollution incidents. The POEO Act requires that waste is deposited at a facility that can lawfully accept the waste.

7.3.2 Protection of the Environment Operations (Waste) Regulation 2014

The POEO (Waste) Regulations provide for tracking of potentially harmful wastes, including obligations on the consignor to have the required documentation and ensure that the receiving facility can lawfully accept the waste. The POEO (Waste) Regulation also limits the distances over which waste can be transported.

7.3.3 Waste Avoidance and Resource Recovery Act 2001

The Waste Avoidance and Resource Recovery (WARR) Act promotes waste avoidance and resource recovery. It provides for the development of Waste Strategies which may contain responsibilities for industry.

7.3.4 Dangerous Goods (Road and Rail Transport) Regulation 2014

The Dangerous Goods (Road and Rail Transport) Regulation provides that a person must not consign dangerous goods for transport if there is a special provision that applies to the transport of those goods. These regulations also establish responsibilities for consignors in relation to labelling and placarding of dangerous goods for transport, the adequacy of vehicles to be used for transport, suitability of stowage and segregation, documentation, and emergency management.

7.3.5 NSW EPA Guidelines

NSW EPA has published a number of documents that provide guidance on the management of waste. A list of relevant publications is provided in Appendix A.

7.4 Site-Specific Licences and Authorities

Mawsons Quarries in NSW are licensed under the POEO Act and regulated by the EPA. These licences typically include a condition that requires that handling of waste generated by the activity is carried out in a competent manner. In Victoria, quarries are required to be authorised under the MRSD Act and comply with approved Work Plans.

8 Management Controls

To manage the effective reduction, reuse, and recycling of waste, materials need to be separated at the source of use, prior to disposal. Appropriate segregation of waste streams facilitates reuse and recycling and improves the quantification of waste types and volumes, allowing potential waste management improvements to be identified. Segregated waste will be disposed of in designated bins or stored in appropriately marked containment bays located across the site. Effective collection and disposal of waste items can then occur.

In Victoria and NSW environmental legislation defines waste as matter that is released into the environment or matter that is unwanted, amongst other things. Whilst excess materials from some quarrying and concrete processes are considered wastes in relation to those processes, for example overburden or wash-waters, they are generally reused on site and, as such, don't meet the legislative definition of waste.

Waste that is to be disposed of must be classified in accordance with guidance provided by the Environment Protection Authorities (Victoria and NSW), and disposed of at appropriately licensed facilities.

8.1 Management Controls – Quarries

A schematic of waste management at concrete plants is provided as Appendix B.

8.1.1 Topsoil and Overburden

Topsoil and overburden are stockpiled on site for reuse in quarry rehabilitation.

8.1.2 Dewatering

Groundwater and surface run-off that are removed from quarry pits by dewatering are generally managed on site. Dewater is pumped from the quarry pit to a holding dam and reused in processing plants. If volumes in holding dams build up and the site is licensed or authorised to discharge to the environment, and water quality meets licence or Work Authority limits, water may be released from holding dams to surface waters or to land.

8.1.3 Process Wastewater

Wastewater from washing stones or extracting sand in processing plants is discharged to a settling pond or channel before being released to the holding dam for reuse or potential off-site discharge.

8.1.4 Acid sulfate soils

If acid sulfate soils are suspected they are left in situ, contained to prevent run-off, sampled and analysed to determine if they are acidic and managed in-situ to minimise exposure and prevent acid run-off.

8.1.5 Oils, oily rags, and parts

Wastes generated by maintenance of plant and equipment are considered generated by the maintenance contractor and removed from site by that contractor for appropriate disposal.

8.1.6 General Waste

Quarries generate small volumes of office and lunchroom waste and have a skip bin serviced by a commercial waste provider to dispose of it. Site Managers may take office recyclables to the local transfer station for recycling.

8.1.7 Septic Waste

Septic systems are serviced as needed to maintain the system in good working order. In Victoria, septic waste is classified as a Priority Waste under Schedule 5 of the EP Regs (Waste Code K410) and must be collected by a person who understands that it is a priority waste and the risks it presents to human health and the environment and has assessed alternatives to disposal.

8.2 Management Controls – Concrete Plants

A schematic of waste management at concrete plants is provided as Appendix C.

8.2.1 Wet Concrete

Excess wet concrete is laid down near the waste concrete bunker and allowed to dry. Once dry it is broken up and transferred to the waste concrete bunker by front-end loader.

8.2.2 Dry Concrete

Waste dry concrete is collected in the waste concrete bunker and when a truck load has accumulated is taken to the nearest quarry for crushing for reuse as aggregate for green concrete.

8.2.3 Agitator Rinse-Out Wastewater

Agitators are rinsed out into wash out pits. In the wash out pits, solids settle on the bottom and water is drained off the top. The solids are allowed to dry out and then broken up and transferred by front-end loader to the waste concrete bunker. The water is pumped to recycled water storage tanks and used in the concrete production process.

8.2.4 Truck-Washing Wastewater

Wastewater from washing the outsides of agitator trucks is collected and pumped to recycled water storage tanks for use in concrete production.

8.2.5 Plant Cleaning Wastewater

Wastewater from rinsing or washing fixed plant is collected and pumped to recycled water storage tanks for use in concrete production.

8.2.6 Contaminated Stormwater

Sealed areas drain to the truck washing bay where water is collected for pumping to recycled water storage tanks for use in concrete production.

8.2.7 Maintenance Waste

Trucks are not serviced on site and consequently site does not generate oily waste. Plant maintenance contractors take any waste generated by their activities away with them.

8.2.8 General Waste

Concrete plants generate small volumes of office and lunchroom waste and have a skip bin serviced by a commercial waste provider to dispose of it.

8.2.9 Septic Waste

Septic systems are serviced as needed to maintain the system in good working order. In Victoria, septic waste is classified as a Priority Waste under Schedule 5 of the EP Regs (Waste Code K410) and must be collected by a person who understands that it is a priority waste and the risks it presents to human health and the environment and has assessed alternatives to disposal.

9 Monitoring

Site Managers monitor water for reuse at least weekly to prevent uncontrolled release.

Concrete Plant Managers monitor dry concrete waste storage daily to determine timing for trucking to quarries for reuse.

Mawsons Environmental Team will provide 6-monthly site inspections that include consideration of waste management and confirm that wastes other than water are being appropriately managed, including inspection of the septic system to assess the need for servicing.

10 Records

Records of septic system maintenance must be retained.

Records of any off-site release of water, in accordance with a licence or authorisation, must be retained, including results of analysis that demonstrate suitable quality.

Records of general waste services should be retained.

11 Roles and Responsibilities

Management of waste is ultimately the responsibility of the Site Manager.

Role	Responsibility
Quarry Manager	Identify waste reduction and recycling opportunities.
Concrete Plant Manager	Ensure waste management requirements are included in contractor agreements.
All employees	Undertake operational activities in a manner which minimises waste.
Environment & Compliance Manager	Provide technical support to Site Managers regarding waste management issues, including regulatory requirements. Provide a 6-monthly site inspection that considers waste management.

12 Training

It is important to provide training and further development of Site Managers and operational personnel to inform them of possible hazards associated with the waste, and measures in place to ensure waste is appropriately managed. This will be achieved through the company's induction program, and toolbox talks.

It is the responsibility of the Site Manager to ensure all quarry personnel undertake training to understand waste management, and for each site personnel to know their role(s) and responsibilities.

13 Review and Audit

Refinement of Mawsons waste management practices will be assessed routinely based on data collated by waste contractors.

This procedure will be reviewed and updated every five years or in response to significant changes to activities or legislative obligations.

14 Document History

Revision	Date	Amended By	Reason for Change
0	25/05/21	C Ward	Document Created
1	25/05/2022	Progressive Environmental	Review legislative obligations, include information relevant to concrete plants, update guidance on management of specific waste types.

Appendix A: Guidelines

EPA Victoria

Publication 1976 Guidance for owners & occupiers of land with an OWMS ≤5,000 litres on any day (including septic tank systems) 2021

Publication 1968 Guide to Classifying Industrial Waste 2021

Publication 1828.2 Waste Disposal Categories – Characteristics and Thresholds 2021

Publication 1872.2 Waste Classification Assessment Protocol 2021

Publication 655.1 *Acid Sulfate Soil and Rock* 2009

EPA NSW

Publication 0796 *Waste Classification Guidelines – Part 1: Classifying Waste* 2014

Publication 0559 Addendum to *Waste Classification Guidelines – Part 1: Classifying Waste* 2014

Publication 0798 *Waste Classification Guidelines – Part 1: Acid Sulfate Soils* 2014

Appendix B: Schematic of Concrete Plant Waste Management

