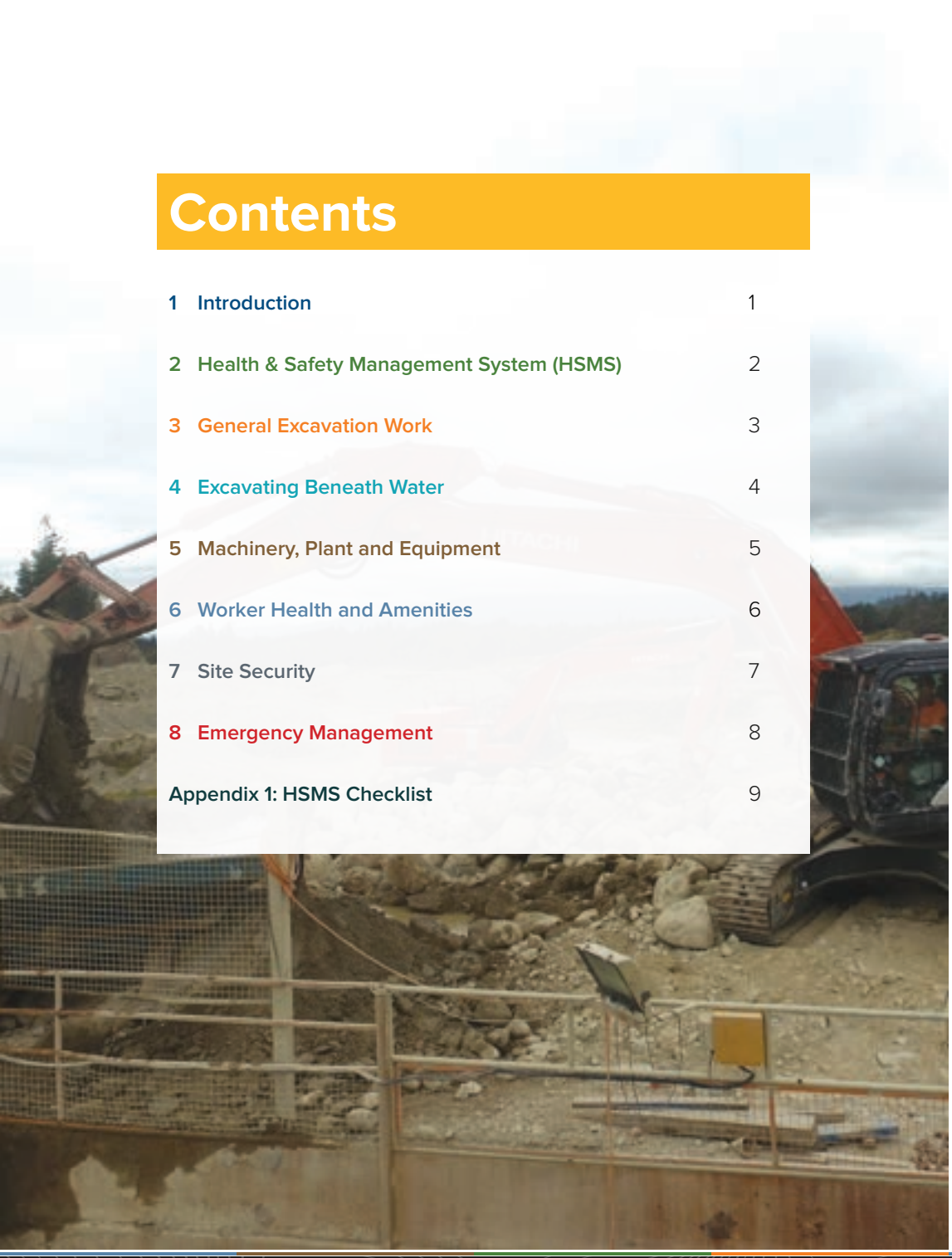
Safe Operation in Alluvial Gold Mines

MinEx

Health and Safety in NZ extractives

Contents



1 Introduction

Alluvial gold mines contain health and safety risks. If something goes wrong, workers can be seriously and/or fatally injured.

Duty holders who have a role in managing the hazards at alluvial gold mines include owners or persons conducting a business or undertaking (PCBUs), suppliers of equipment and installers of plant.

Workers, including contractors and other persons at the workplace also have duties under the Health and Safety at Work Act, such as the duty to take reasonable care for their own health and safety at the workplace.

The intent of this booklet is to provide you with ways to recognise and manage hazards, and reduce risks associated with your alluvial gold mine.

For more detail on any of the content of this booklet refer to the Alluvial Gold Code of Practice on the MinEx website at: https://minex.org.nz/regulations-and-guidelines/resources/code-of-practice-templates/Alluvial-Gold-Code-of-Practice.pdf

2 Health & Safety Management System

A health and safety management system (HSMS) will provide the structure, organisation and paperwork needed to reduce health and safety risks at an alluvial gold mine. It will also help with decisions around what safety controls to use.

The size of the plan must be proportionate to the size of your site. This means having a plan that is easy to implement and manage, that meets your legislative requirements.

The site manager must eliminate risks so far as is reasonably practicable. If elimination is not reasonably practicable, the risk must be minimised, so far as is reasonably practicable. When developing your HSMS it is important to involve all workers in the process of identifying hazards and implementing controls to manage them.

Your HSMS should contain:

- Company policy – Our commitment to keep workers safe
- How we will manage our hazards and risks
- How we report and investigate incidents and accidents
- What we do in an emergency
- Who is responsible for what
- How we communicate
- How we check, monitor and audit – To ensure our processes are working

3 General Excavation Work

Excavation work should be carefully planned before work starts so it can be carried out safely.

Before any excavation work is conducted, a check of ground conditions should be undertaken to determine all factors likely to affect ground stability, and any limitations that should be imposed on excavation design.

Edge protection, barriers, warning signs and other suitable controls should be placed around any water filled excavation to keep people away from hazardous zones. These controls should be moved as the excavation progresses and hazardous areas change.

4 Excavating Beneath Water

Excavation work beneath water, including cleaning out ponds, carries additional risks because there are hidden hazards in the water that are not always visible to the operator. Ensure that the following controls are in place:

- Tracks should face the excavation or be at no more than a 45° angle to the excavation, with track motors facing away from the face
- Make yourself aware of the nature of the ground and any hidden hazards and physical dimensions of the working bench
- Emergency procedures including:
  - No safety grills or bars on the front window
  - Seat belts not used when doing this task
  - Cabs have a glass hammer in the cab to break the glass in event of emergency
  - Availability of life vest
- Working area kept flat and clear of equipment or material to enable a rapid exit in the event of instability of the face

5 Machinery, Plant and Equipment

Plant includes machinery, equipment, appliances, containers, implements and tools, and any components or anything fitted or connected to those things. Plant includes items as diverse as lifts, cranes, machinery, conveyors, forklifts, vehicles, power tools and mobile plant.

In order to manage the risks associated with the use of plant and machinery, it is important to consider:

- The type of equipment to be used and how it is used
- The equipment is used in accordance with the original equipment manufacturers requirements
- All plant is isolated before commencing any maintenance works
- All workers are trained in the operation of equipment and in site isolation procedures
- Management of traffic on site
- How often inspections will be carried out including pre-starts and workplace inspections
- How lone workers will be managed or those working remotely

6 Worker Health and Amenities

Managing the health and wellbeing of your workers is an important part of being a good employer. Good worker health will increase productivity, reduce sick leave, improve staff morale and general worker wellbeing.

Legislation requires you to provide adequate amenities for workers and to determine whether there are hazards at your site that may have long-term effects on workers' health. If you have such hazards you are required to have a Worker Health Control Plan. A risk assessment of health hazards is required to identify what hazards are present and controls needed to manage these hazards.

Worker health involves both physical and mental health. There is potential for:

- Improper use of drugs and alcohol
- Fatigue from long hours including night shift
- Exposure to biological hazards
- Exposure to hazardous substances
- Manual handling
- Physical and psychological impairment
- Exposure to noise
- Exposure to extreme temperatures (hot and cold)
- Hazards associated with working alone

7 Site Security

It is good practice to keep the public well away from mines but where this is not possible, the following precautions should be considered:

- Controlled access to the site with a gate or barrier arm
- Signage on the gate to warn site is hazardous and no entry without permission
- Escort visitors and contractors while on site
- Induction of contractors
- RT communication between workers
- Security cameras

The precautions should be reviewed regularly and will form part of your workplace inspections.

8 Emergency Management

Potential emergency situations need to be identified and emergency plans prepared including emergency drills to ensure that the plans work.

For the plan to be effective it should be kept as simple as possible and proportionate to the size and nature of the operation. If the work is low risk, emergency plans don't need to be long or complicated. In higher risk, larger operations and operations that have principal hazards, more complex plans and resources may be required.

Emergency plans should include:

- Site location and contact details
- Emergency services details
- Emergency response procedures
- Communication processes
- First aid
- Evacuation procedures

Appendix 1

HSMS Checklist

The following checklist will assist in developing and maintaining your HSMS:

Item	Questions	Comments
Company Policy	Do you have a documented H&S Policy? Is it communicated to all workers and contractors?	
Communication	Has your HSMS been communicated to all workers? Do you have processes in place to communicate with workers?	
Training & Competency	Are all workers trained and assessed as competent to operate all plant and equipment? Are workers trained in safety systems and requirements? Do you have training records?	
Hazard Identification & Risk Management	Is there a process for identifying hazards and assessing the risk to workers?	
Workplace Inspections	Is there a process for regular workplace inspections including prestart checks on plant and equipment?	
Plant & Equipment	How do you ensure plant is well maintained and fit for purpose?	
Emergency Management	Does the site have an Emergency Response Plan? Are workers trained in the plan? Does the plan include provision for workers working alone?	
Amenities & Worker Health	Are adequate amenities provided for workers? Do you have a Worker Health Plan that identifies hazards to worker health and how they are managed?	
Accidents & Incidents	Do you have a process for reporting and investigating accidents and incidents?	
Audits & Checks	How do you ensure that your H&S processes and procedures are working?	

Useful resources:

MinEx - Alluvial Gold Code of Practice

https://www.minex.org.nz/regulations-and-guidelines/fact-sheets-booklets-and-cops/

WorkSafe - Guidance for Alluvial Mines and Quarries

https://worksafe.govt.nz/topic-and-industry/extractives/guidance-position-statements/health-and-safety-at-opencast-mines-alluvial-mines-and-quarries/

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