

2016

Surface Exploration Drilling Guideline



Guideline for the minimum requirements and expectations for all surface exploration drilling equipment, procedures and personnel.

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*To ensure that you have the latest version of this guideline refer to The Bullion Group website
www.thebulliongroup.com.au*

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INTRODUCTION

1. Context and Purpose

Exploration Drilling has traditionally been considered inherently a hazardous activity and which has the potential to cause significant injury to workers, damage to the environment and/or equipment.

The author of this standard has written this document with the knowledge that every site the drill rig operator works at will have differing standards and expectations. The drill rig companies' owner and sites Health Safety and Environment (HSE) standards and procedures will take precedence over all and part of the guideline. However in saying this, this document will go a long way in assisting in formulating the basic industry guideline.

This document has been created as a contribution to the drilling industry and is not for resale in whole or in part thereof.

The author welcomes your comments/feedback/photo evidence, and if you would like to contribute any ideas regarding this guideline, please email the author on: admin@thebulliongroup.com.au.

Mackay Safety Consultants (a division of The Bullion Group) is available to audit your business to help achieve compliance with this guideline. For more information, contact (07) 4944 1272 or www.thebulliongroup.com.au.

Company Background

The Bullion Group (TBG) is the parent company of four Queensland businesses and offers a range of safety and project coordination services. The Bullion Group stable consists of:



- **Mackay Safety**
(provision of safety advisors, auditing services and risk management).



- **Universal Services International**
(small project management, provision of operators and equipment).



- **Procedures Online**
(online procedures / forms etc. for businesses).



- **4PS Software**
(software to manage: People; Plant; Process; and Procedure).

Our list of clients, ranging from small businesses to major mining and engineering corporations are testament to the success of our professional and timely delivery of skills, products and services. It is our first-hand knowledge of the mining and engineering industries along with a solid reputation that ensures our quality service, client satisfaction and business success.

2. Disclaimer

This document is a guideline only and cannot replace a quality risk assessment and implementation of standards and guidelines of each drilling company and/or client.

Use of this document shall in no way hold the author liable for any injury, damage, loss, environmental harm, financial cost and/or equipment damage incurred, or potentially incurred, howsoever arising.

The user of this document shall complete a quality risk assessment that is facilitated by a competent Risk Management Facilitator (minimum 5 years' experience) and Management of Change process prior to the use or introduction of all or part of this guideline.

By using this document the user acknowledges that it holds all responsibility for the implementation of any content or information set out in this document.

The author of the drilling guideline has suggested various named products but in no way recommends any product over alternative products and recommends that companies research items to determine the most suitable product applicable to their operational risks.

3. Scope

This guideline shall not limit technological advances, current and future to the improvement of the health and safety of drill rigs and ultimately provides a workplace free of injury and equipment damage.

This guideline should be used to determine the companies and clients' minimum requirements and expectations for all surface exploration drilling equipment, procedures and personnel. This guideline can be used in its entirety or part in establishing compliance of drilling companies.

Types / Methods of Drilling

This guideline attempts to address the following types / methods of drilling but it may be able to be used as determined by the user of the document in other areas;

- Rotatory air;
- Mud for open hole chip;
- Conventional and wireline coring;
- Reverse Circulation (RC).

The underlying methodology in the creation of this guideline is based upon the principals of the 'Nertney Wheel' (Bullock M.G. 1979) to achieve Safe Production:



Principles

Safe Work Practices;

- Risk and Management records;
- Documented methods and procedures (Safe Work Method Statements - SWMS's);
- Standard Operating Procedures (SOP's);
- Work Plans;

Competent People:

- Training / competence – internal & external;
- Employee records;
- Experience, selection, and motivation;
- Roles and responsibilities;
- Behaviour;
- Fitness for Duty;

Fit for Purpose Equipment;

- Maintenance records;
- The right tools, materials, machinery;
- Special equipment;
- Warning devices.

Controlled Work Environment;

- Physical location and interactions with other processes;
 - Emergency requirements
- Supervision and Management;
 - Right procedure(s) for the task
 - Competent people for the task
- Observations, Inspections and Audits;
- Managed:
 - Work schedules;
 - Communication;
 - Cooperation;
 - Work locations.

Note: This document loosely follows the format of the principals above. As principals are interlinked in some cases, the information has been detailed under the most appropriate principal for ease of use of the reader.

4. Application

The Surface Exploration Drilling Guideline should apply to all surface exploration drill rigs. Where uncertainties exist, a formal risk assessment and change management should be completed to determine the suitability of equipment in undertaking the drilling operation.

5. Our Aim

Our aim is to assist industry to provide incident and injury free workplaces.

6. Our Goal

It is to assist the industry to design a drill rig that prevents workplace injuries, environmental harm and damage to equipment. This will be achieved through technology for automation of the drilling process.

7. Definitions

Drillers Assistant – Drillers Offsider

SSE – Senior Site Executive

SWL – Safe Working Load

SWMS – Standard Work Method Statements (including SWI, Drill Procedures, SWP etc.)

OEM - Original Equipment Manufacturer

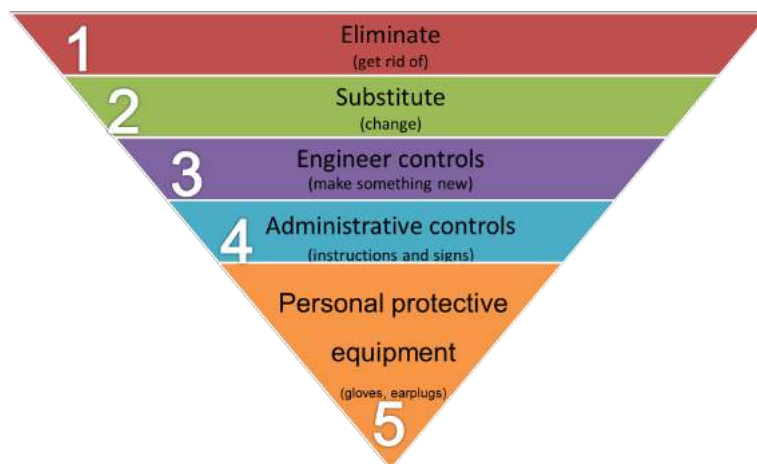
Hazardous Chemicals – Previously known as Hazardous Substances

SDS – Safety Data Sheet (previously known as MSDS)

RC – Reverse Circulation

8. Use of this Guideline

When using this document the user should apply the Hierarchy of Control process for managing the risk.



“Just because you always did it that way, doesn't make it right.”

Health and Safety is a cross-disciplinary area concerned with protecting the safety, health and welfare of workers engaged in work or employment. The goal of all health and safety programs should be to foster a safe work environment. As a secondary effect, it may also protect co-workers, family members, employers, customers, suppliers, nearby communities, and other members of the public who are impacted by the workplace environment.

It is necessary that a set of safe, or standard, work procedures (SWMS's) is implemented for every workplace device and process. These procedures should be regularly updated and made available to all staff via training sessions.

SAFE WORK PRACTICES

1. Legal Compliance

Legal compliance is the identification, assessment and review of the numerous laws, rules and regulations a company is subjected to for its operations. Whilst generally it is not expected for the company to be a legal expert it must know what the requirements are, when they change and when to seek advice from the relevant expert.

The company should have a legal compliance register to ensure it has considered what laws, rules and regulations applicable and how it meets its obligations.

2. Risk Management

Risk management is the identification, assessment, and prioritization of risks (defined in ISO 31000 as the effect of uncertainty on objectives, whether positive or negative) followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.

For Risk Management use ISO 31000 Risk Management Principles. The following is an example of how to apply this process.

3. Drilling Activities Risk Management

A risk management approach should be used for all drilling activities. As with all risk management it should be facilitated by a competent Risk Management Facilitator (minimum 5 years' experience), a cross section of the workforce, which could be the companies' safety committee representatives, members of the management team, personnel who would be considered content experts and experienced personnel for the tasks be included in the risk assessment relevant to the level of risk.

- I. Prior to the commencement of any drilling program, a pre-program risk assessment should be completed and a project specific Health & Safety Management Manual developed.
- II. The drilling company should develop Operational Risk Assessments to ensure all hazards are identified, applicable controls are put in place and the risk assessed, and where required, put further controls in place (note some clients may ask for the residual risk to be assessed). The aim is to ensure workplace hazards are maintained at an acceptable / tolerable level of risk. Acceptable / tolerable levels of risk should be determined by your company Risk Management Procedure.
- III. The drilling company, importers and OEM (Original Equipment Manufacturers) should develop an equipment risk assessment that considers operability and maintainability by identifying all of the tasks that will be performed by the piece of equipment. Assessment tools such as Operability and Maintainability Assessment Tool (OMAT) available free from the Minerals Industry Safety & Health Centre (MISCH) could be used, www.mishc.uq.edu.au (under the EMERST tab) that could assist in the development of these reviews. OEM's should supply these types of assessments at the purchase of equipment.
- IV. The drilling company should develop task based risk assessments to identify routine tasks from the operational risk assessment.
- V. From the routine task risk assessments, the company should develop Standard Work Method Statements (SWMS) that will form part of the companies Health & Safety Management Manual. The SWMSs should be reviewed by the workforce key senior personal prior to the introduction into the workplace to ensure relevance, appropriate content is logical and in a sequential order. www.proceduresonline.com.au for a full list of drilling SWMSs.
- VI. The SWMSs should be then developed into a training document with the applicable level of training material, presentations with theoretical and where applicable practical assessments for roll out into the workforce.

4. HSE Management Manual

The drilling company should develop a Health & Safety Management Manual for all aspects of the companies' activities. AS 4801 Occupational health and safety management systems could be used as reference material for developing the manual.

The drilling company should follow and comply with the companies own Health & Safety Management Manual unless otherwise specified by the client and/or the applicable state/national legislation for whichever takes precedent.

5. Operators Manuals

Drill rig equipment should be accompanied by an operator's manual and it should be readily available on site at all times. Importers / OEM's should supply operator's manuals during delivery of equipment.

6. HSE Consultation

The drilling company should involve its workforce in all health and safety matters as this can be key to achieving an injury free workplace. Consultation enables the company to share health, safety and environmental (HSE) information and to take employees' views into account, before making decisions. Through consultation, the company can improve hazard awareness and respond to H&S issues experienced by employees.

The company promotes a team approach to health and safety management by involving employees in addressing potential problems before they escalate and affect business.

Communication tools include information posted on notice boards, meetings, risk assessments, newsletters and other forums where appropriate. Consultation with external stakeholder parties on HSE matters may also occur where required.

7. Toolbox Meetings

A formalised Toolbox Meeting should be regularly held, at least once per week, and an example of items that could be covered is as follows;

- Hazards and risks that have been identified;
- Incidents and near misses;
- Scope of work for the shift/ week;
- Supervisor directions;
- Statutory, incident, safety alert reports;
- Safety performance;
- Events that will impact on the operations;
- Reviews of registers / training matrixes; and
- General business.

Toolbox meeting minutes should capture who attended, a place to sign off against, a place to assign actions and stature, and a method of distribution to ensure all workers have access to the minutes.

8. Incident Investigation

All incidents should be investigated with the aim of ensuring a future occurrence of a similar incident is avoided. An effective investigation should include:

- Formal approach based on company procedures and policies;
- Relevant investigation team and facilitator;
- “No blame” approach;
- Clearly details the scenario (using witness statements, measurements, photos, etc.);
- Identifies contributing factors and root causes; and
- Suggests suitable and effective new controls.

9. Permit to Work

Permits may be required to carry out hazardous works including but not limited to; working at heights, hot work, confined space, permit to dig etc., these permits will require the work to be risk assessed and permits issued. Note that some clients may require their permit system to be adhered to.

10. Working Alone

The company should have a procedure in place for working alone. The procedure should include sign in and out boards including a location map, routine call in checks and personal locator equipment all of which should be tied into the emergency response procedure.

Personnel locator equipment for working alone should have functions that include location information determined by a GPS receiver, two-way inbound and outbound status, text messaging, and emergency/alert notifications (see example of ‘Working Alone Personal Tracker’ Appendix 5).

11. Equipment Registers

The drilling company should maintain equipment registers for all equipment on site that requires routine inspections. The registers should list as a minimum the item / equipment number, date of inspection, next due date and be supported by documentation (inspection certificates, inspection invoices).

The following example list should be considered but not be limited to:

- Lifting equipment (ropes, sheaves, sheave block, certified anchor points and lifting devices (casing lifting clamps / overshot lifting device);
- Lifting equipment that is subject to wear and frequent replacement (eg. shackles, eyebolts) need only be colour coded to confirm compliance with inspection requirements and not needed to be included in the equipment register.
- Mast / A-frame / critical lifting path inspections;
- Emergency equipment (fire, first aid, rescue, environmental);
- Gas monitors;
- Engineered certified equipment;

- High pressure air hoses;
- Hose restraints and anchor points;
- Electrical equipment including generators and electrical safety switches;
- Flashback arrestors;
- Work at heights equipment;
- Lightning detectors;
- Eyewash units;
- First aid kits;
- Pressure vessels and Pressure Relief Valve (PRV); and
- Saver sub.

12. Chemical Registers

The drilling company should maintain a chemical and hazardous chemicals register for all substances on site. The registers should list as a minimum:

- List chemicals held;
- The chemical or hazardous substance name;
- UN number;
- Issue date of SDS (SDS should be no more than 5 years old from review date);
- Quantity of chemical held on site;
- Location of storage;
- All chemicals should be supported by a SDS; and
- Hazardous chemicals should be supported by risk assessments.

Note: SDS folders should have each SDS labeled / numbered and have a referenced index page. Most clients would expect that any chemicals being brought to site would be submitted for prior approval.

13. Pre-Operational Inspections

A daily pre-start inspection should be carried out on all drill rig equipment prior to operating to ensure that the equipment is safe to use. The operator prior to the commencement of work should perform the inspection

An example of what a pre-start inspection checklist, with *inspection categories*, could include but not be limited to:

- Inspections are to be recorded
 - Equipment identification / registration;
 - Speedo / hour readings;
 - Inspected by whom; and
 - Dated and time.
- Inspections to categories 1. operational and critical safety components (with do not operate);
 - Brakes;
 - Steering;
 - Seat belts;
 - Tyre / wheels;
 - Exhaust; and

- Safety devices (interlocks, warning alarms).
- Inspections to categories 2. Operational and safety components (only operate after consultation with supervisor and or maintenance personnel);
 - Under bonnet;
 - Lights;
 - Safety equipment;
 - Glass;
 - Communication (two-way); and
 - Compliance stockers.
- Inspections to categories 3. general components;
 - Body;
 - Instruments;
 - Cargo;
 - Access and egress;
 - Pre-start; and
 - Mirrors / windscreen.
- Prestart books should be unique to the piece of equipment, with one (1) book being used at any one time for the piece of equipment;
- Be duplicable copies; and
- Copies sent to the maintenance department.

Note: Routine inspections and monitoring should continue on equipment during operational times as well.

14. Pinch Points

All equipment should have a pinch point register completed.

15. RC Blow Down

The drilling company should have a formal procedure for managing the hazard to prevent drill crews being exposed to unplanned movement by the sample hose when performing maintenance, repairs or replacement of components in the sampling system. The procedure should include the switching off and isolation for the compressed air system (booster and air compressor/s).

PEOPLE

1. Recruitment

As with any industry and workplace it is important that the recruitment of personnel be suitable for the specific work, tasks to be performed and needs of the company. Notwithstanding the usual areas to consider (i.e. an individual's experience and training, roles and responsibilities), the following aspects should be considered:

- Ascertain an individual's motivation;
- Extended rosters (work hours per day and consecutive days per roster); and
- Work area locations (remoteness and potential working alone).

2. Training

The drilling company should develop Training Needs Analysis. An example of what should be included for the mining industry is as follows:

- Coal Board Medical (CBM);
- Drug and Alcohol Test;
- Driver's License;
- Industry Specific Induction (e.g. General Induction Queensland GIQ);
- Familiarisation for rig (site-specific induction);
- Company policies and procedures;
- Apply First Aid course; and
- Drilling competencies.

Note: all training should be to the national competency standards.

Some clients may expect that all training be refreshed at least 5 yearly unless otherwise defined on the competency certificate. Refresher periods maybe defined by applicable legislation.

At least two persons trained in HLTF301B, Apply First Aid (Senior) should be available at the drill sites with the preference of all persons to hold current training in First Aid.

All personnel should be trained in the use of portable fire extinguishers and how to use fire suppression units with refresher training every 12 to 24 months.

3. Personnel Training Matrix (Register)

The drilling company should maintain a personnel training matrix for all persons. The matrix should list as a minimum the employee name, training name, date of training and date of expiry. The training matrix should be supported by training records and note that some clients may require these records to be certified or be supported by sighting the original documents. Management system www.4ps.com.au

4. Fit for Work

The drilling company should ensure they have in place a formal procedure to detail the requirements of personnel to be 'fit for work'. The procedure should address the following as a minimum:

- Drug, Alcohol, Physical and Psychological stresses;
- Hours of Work;
- Journey Management.

5. Induction

The drilling company should develop a company induction package mapped against the relevant industry competency standards. Note that some clients may require the induction package to be assessed against the relevant competency standards which is by a Registered Training Organisation (RTO).

The following is an example of some competencies that the induction package should consider as applicable industry competency standards:

- RIICOM210A - Communicate Information in the Workplace
- RIIEHV201A - Identify & Assess Environmental & Heritage Concerns
- RIINHB201A - Load, Secure & Unload Drilling Equipment & Materials
- RIIOHS201A - Work Safely & Follow OHS Policies & Procedures
- RIISAM202A - Isolate & Access Plant

Additionally the induction could include the drilling companies SWMSs for the theory assessment. Examples of those procedures could be as follows however not limited to:

- Mobilisation and demobilisation to site;
- Isolation;
- Communication;
- Site setup;
- Connecting compressor lines;
- Running and tripping drill rods;
- Breaking out and making up of drill rods;
- General drilling; and
- Refueling equipment.

6. Equipment Familiarisation

All equipment should have a specific equipment familiarisation training package developed. Examples of equipment that should be considered to have training packages developed for are:

- Drill Rig;
- Grout Rig;
- Compressors;
- Medium trucks;
- Mud pumps;

- Sloops; and
- Equipment used for well control.

Examples of what the familiarisation should include:

- Start up;
- Shut down;
- Emergency shutdown;
- Pre-start inspections (how to check water and oil levels etc);
- Equipment setup (example connecting air hoses, water lines, jack up etc.); and
- Operational instruction.

Note that Importers / OEM's should consider supplying this documentation at delivery of the equipment.

7. Crew

All drill rigs should be crewed by a minimum of one (1) Driller and two (2) Drillers Assistants, unless risk assessment other wise states less or more workers. Additionally at least one Drillers Assistant should hold the relevant competency for Cert II in Drilling Operations.

8. Appointments

Some clients may formally appoint certain positions as listed in the Training Needs Analysis. For example these positions could include:

- Drillers;
- Supervisors; and
- Equipment operators.

9. Driving

Drilling companies should consider requiring persons that operate or drive vehicles hold additional national training competencies for the type of vehicle driven.

Examples of national competencies include, but are not limited to:

- RIIVEH201A – Operate a Light Vehicle (vehicles up to 4.5 tonne GVM, vehicles carrying up to 12 passengers);
- RIIVEH202A – Operate a Medium Vehicle (fuel and service vehicles, crane trucks (vehicle loading crane), table tops, highway tippers, water tankers, fire engines, explosive carriers, any 2-axle rigid vehicle, including truck and bus greater than 8 tonnes GVM);
- RIIVEH302A – Operate Multi-Combination Vehicle; and
- RIIVEH303A – Drive Heavy Combination Vehicle.

Note that some clients may require drilling company workers to hold these competencies.

10. Roles & Responsibilities

The drilling company should develop roles and responsibility for each role within their organisation. Examples of the roles and responsibilities should include but not be limited to:

- Health and safety;
- Key performance indicators;
- Key tasks;
- Level of authority;
- Competencies; and
- Skills and experience.

11. Supervisors

Drilling companies should consider training persons in supervisory roles in the following competencies listed below. Persons who should be considered as Supervisors could be Drill Supervisors and Drillers.

Examples of industry supervision competencies;

- RIIRIS301A - Apply Risk Management Processes;
- RIIOHS301A - Conduct Safety and Health Investigations;
- RIICOM301A - Communicate Information; and
- HLTFA301B - Apply First Aid (Senior).

Note: some clients may formally appoint supervisors. Some legislation may also require specified competencies and be formally appointed.

12. Driller

Persons who are responsible for operating drilling equipment should be assessed as competent against the relevant drilling competency standards (RII09 Resource and Infrastructure Industry Training Package).

All drillers should complete a Drill Rig Equipment Familiarisation prior to operating any drill rig.

Drilling companies should also consider training drill rig operators in lifting operations. An example of a national training competency is RIIHAN203A Conduct Lifting Operations.

For water bore drilling the drilling companies should review the relevant legislation applicable to the site.

13. Trainee Driller

Drilling companies should have a formalised training package in place for trainee drillers. The training package should include a training logbook that will be mapped against the relevant national industry competencies such as those listed for a Driller. The trainee driller should be placed under the training package prior to operating equipment and the log books should be available on site for review at all times.

Note that some clients may require a formal notification of the appointment of a trainee driller.

14. Drillers Assistant

Drilling companies should identify that inexperienced workers such as drillers have a higher risk of injury than any

other person on site.

Drilling companies should assess Drillers Assistants against the national training competency and develop a training package that is mapped against those competencies.

Inexperienced Drillers Assistants should be placed under training and issued with training logbook when the employee starts on site.

Note that some clients expect that the Drillers Assistants assessed as competent by 6 months.

The logbook should be available on site for review at all times.

15. Rod Loader Operators

The drilling company should develop a formalised training package for the use of the rod loader, which will include a theoretical and practical assessment.

EQUIPMENT

1. Compliance

To determine equipment compliance the author used his experience, risk assessments, incident reports, audits and inspections, various known industry standards from BHP Billiton, Anglo American Coal, Rio Tinto as well as items that may be from other industries that could logically suit drill rigs. The user must note that every client can be or is different, and with that may have varying expectation for what is listed.

Where compliance cannot be achieved or is decided to implement the example in this Guideline, the user must have regard to the disclaimer of liability set out in Clause 2 – Disclaimer in the Introduction applies to this document.

The user of this document shall complete a quality risk assessment facilitated by a competent Risk Management Facilitator (minimum 5 years' experience) and Management of Change process prior to the use or introduction of all or part of this guideline.

The user acknowledges that it is liable for the implementation of any content or information set out in this document.

2. Personal Protective Equipment

The drilling company should have a Personal Protective Equipment (PPE) procedure and training package that includes the use of various PPE.

The following are examples of PPE;

- Long Hi-Visibility day / night shirt;
- Long pants / jeans;
- Winter coat is to be Hi-Visibility day/ night;
- Safety glasses including prescription glasses;
- Steel capped work boots;
- Gloves and clip;
- Isolation locks;
- Hardhat; and
- Sunshade brims.

Additional PPE, such as dust masks, respirators, additional sun protection, should be worn as defined within the appropriate Australian / International standard.

Note that some clients may have additional expectation for PPE.

3. Signage

All drill rigs and associated equipment should have clear signage.

The following are examples of the items that may be labeled:

- Directional location, the signage is to be suitable for day or night (directional signage should list: example warning disturbing this sign will endanger lives);

- Restricted entry, signage for all site entry points that includes but is not limited to, contact crew prior to entry, PPE requirements, no smoking beyond this point, emergency contact numbers;
- Light vehicle parking area;
- Vehicle heights (mobile and modular equipment e.g. sloops) marked inside vehicles and clearly on modular equipment;
- Remote emergency stop and emergency stop buttons;
- Emergency equipment including but not limited to (fire extinguishers / fire suppression / trauma or first aid kits / snake bite kits / spill kits / eye wash);
- Mandatory PPE requirements for the area;
- No go zone, signs / witches hats;
- Isolation points, (main and starter);
- Jump start receptacles with voltage levels;
- Rig specification placard (should list ratings for tower / hold & pull back / haul & wire line / tool handling boom / maximum hydraulic pressure);
- Safe Working Limits (SWL) on Rated / certified equipment;
- Function of control and operator levers, hydraulic, air and water valves;
- Equipment operational instructions should be listed on all equipment (compressors, drill rigs, boosters etc);
- Safety equipment locations (PPE / Safety documentation); and
- All control levers and taps (hydraulic / air / water).

Note for Importers / OEMs that the labels should be in clear English.

4. First Aid

The drill company should have First Aids Kit appropriate to the level of risk and the applicable Australian Standards / Code of Practices. Examples of types of first aid kits for Drill rigs, support trucks and light vehicles are listed in Appendices 1 - 3.

Additional emergency equipment that drill companies may require at a Drill sites is an AED (Automatic External Defibrillator). If the drill company decides to have an AED it should be compliant with QAS (Queensland Ambulance Service) AED equipment and have personnel trained in its correct use.

5. Fire Fighting Equipment

Drilling companies should have a minimum of two (2) x 9 kg dry chemical fire extinguishers or one (1) x 9 kg dry chemical fire extinguisher plus a fire suppression unit fitted to the drive engine on drilling equipment.

If drill companies use fire suppression equipment it should be at least a manually activated system but it may be worth fitting an automatic system. Examples of places to fit fire suppression to are main and auxiliary engines on all drill rigs and air compressors. Fire suppression should be fitted as per the Australian Standards requirements.

All other associated drilling equipment should have at least a minimum of one (1) x 9 kg dry chemical fire extinguisher and more may be required relevant to risk.

A risk assessment to identify potential fire hazards is mandatory under some legislations.

Personnel should be trained in the correct use of firefighting equipment and how / when to use fire suppression.

6. Spill Kits

Drilling companies should have in place a spill kit capable of managing 200 litres spill on site.

Note that some clients may require that all engine/ hydraulically driven equipment be placed inside fixed or portable bunding / containment areas.

7. Emergency Shutdown Systems

Drilling companies should have an emergency shutdown device fitted to all combustion driven engines but it would be expected that small single or dual cylinder engines be excluded.

Items to consider for emergency shutdown devices:

- Drill rigs should have multipoint emergency shutdown devices (one located on either side of the rig and one located on the rig control panel);
- Air compressors should NOT have the emergency stop located next to the outlet;
- Drilling companies' should consider fitting a remote shutdown device to drilling and ancillary equipment combustion engines on site, located greater than 30 metres of the operating equipment. (All equipment must be able to be shut down from this location); and
- The emergency shutdown device / buttons should be clearly identifiable, labeled and accessible.

The remote device could be radio controlled or cable type that can be located at least 30 meters from the equipment. Note that some clients may not accept radio devices.

Additional fixed emergency stop device/s should be considered in various locations around the equipment relevant to risk.

Emergency stops should be checked as a minimum weekly, and recorded on pre-start inspections. Note that some sites may require emergency stops to be tested daily.

8. Communications

Drilling companies should ensure that it could maintain uninterrupted communications at their work sites at all times for emergency purposes.

Examples of additional communication methods are:

- Hand held radio (UHF);
- Fixed radios (UHF);
- Mobile phones;
- Satellite phones.

Note that some clients may require VHF radio systems.

9. Equipment Isolation

The drilling company should ensure that it has an Isolation procedure and that equipment is fitted with positive lockable isolation point/s that are easily accessible to operator, maintainers and effectively isolate equipment when a personal lock is fitted. The isolator should isolate the negative side the battery system as a minimum.

Examples of areas that can be fitted with positive lockable isolation point:

- Battery;
- Compressed air tanks for air starts; and
- Starter motor (some clients may require this).

10. Equipment Safeguarding

The drilling company / importer / OEM should have a process in place to prevent personnel coming into contact with any rotating, moving and/or hot parts from an intentional or unintentional action by personnel.

A way to prevent this is to install guarding to any moving part, rotating part and/or hot part that is exposed and within reach from any area that would be considered as a normal working area or a place where maintenance would be performed.

Example of areas that may require guarding:

- Fan belts and pulley;
- Foot clamps with and without a rod spinner fitted;
- Bottom pull down sheaves;
- Exposed rods under the foot clamp assembly;
- Exposed exhausts;
- Around the side and rear of drill rig masts;
- Interlocked table / rod rotation guard of significant size to prevent access to the rotating drill rods (In addition if the rod cage has any potential pinch points these must be enclosed); and
- Drill works and drive shafts;

Note: For interlocked table guards should be fitted with an interlock override indicator light to advise that device is off for breaking out rods where applicable.

The interlock operations would have two parts:

- a. Slow the rotation speed when operating at high RPM / speed or;
- b. Stop the rotation when operating at low RPM / speed.

11. Work Platforms/ Access

The drilling company should ensure that appropriate access and edge protection for performing inspections and maintenance on drill rigs and ancillary equipment. For Work platforms / Access points the drilling company should refer to Australian Standard AS/NZS 1657.

Examples of areas to consider fitting platforms / access points to:

- Checking and filling radiators on drill rig and compressor engines;
- Performing maintenance on drill rig and compressor engines;
- Working on around the drill rig deck;
- Working on around jack up modules / sloops;
- Edge protection 900mm above the highest part of the load without any gaps > 450mm (all sides);

- Rear edge protection for working off rear of rod trucks / trailers / sloops;
- Toe-boards / kick plates fitted to handrails which are above 2000 mm;
- The use of stairways rather than ladders should be considered; and
- Access to drill rig work platforms.

For improved handrail grip design see the attached website www.acusafe.com.au

12. Maintenance

The drilling company should maintain a maintenance system that tracks servicing and maintenance of equipment.

The system should provide detailed scheduled maintenance, the system should allow for fault reporting as well as documentation / recording of all service and maintenance activities performed. An example of one such system that can be used to track maintenance and servicing is the "4P System", visit www.thebulliongroup.com.au / www.4ps.com.au for more information.

Importers / OEMs should have a detailed maintenance schedule included with the delivery of equipment.

13. Annual Inspections

A system of periodic inspections should be in place for all drill rigs. A competent person will complete the annual inspections. Note that some clients may require the competent person to be an independent person. The inspections should include the schedule set by the Importer / OEM and the equipment critical items. As an example these items should include however not be limited to;

- Structure;
- Lifting;
- Braking;
- Hydraulics;
- Electrical; and
- Maintenance condition.

The Competent Person is defined as "A person who has acquired through training, qualification (tradesperson), experience or a combination of these, the knowledge and skills to do the task in a safe way, including knowledge of:

- i. relevant Australian Standards; and
- ii. relevant codes of practice; and
- iii. other relevant legislation".

14. Non Destructive Inspections

The drill rig should have annual critical components Non Destructive Testing (NDT) completed:

- Critical lifting components; and
- Critical mast raising locations.

Refer to the example Drill Rig NDT Inspections Procedure in Appendix 4.

15. Rated Capacity

The drilling company should have a process in place for managing rated equipment. All fabricated equipment should be engineer certified and with a clear indication of the rated capacity.

Examples of rated equipment:

- Rod Racks;
- Hose restraint anchor points;
- Lifting points / lugs;
- Support frames e.g. Mast travelling frame; and
- Fabricated lifting tools.

All certified equipment should have an inspection schedule and be included in the company's equipment register.

16. Haul/ Winch Lines

The drilling company should have a system from selecting, managing and maintaining lifting equipment.

All lifting equipment Safe Working Load (SWL) should match the OEM rated expected loads including the lifting rope diameter matching the sheaves and the minion-bending radius.

The following is an example of a wire rope maintenance schedule but you should refer to the Importers / OEM requirements:

Maximum service life of wire ropes is as below.

- Every 12 months – Main winch rope, Rod winch rope;
- Single Shift every 24 months – Dual pull out ropes, Pull down ropes, Hose reel rope, Pull down chains; and
- Double Shift every 12 months – Dual pull out ropes, Pull down ropes, Hose reel rope, Pull down chains.

For lifting points on haulline rope that are **not** eyelet types should be fitted disc-locking clevis pin and shackle arrangement on the main winch rope.

Note some clients/ importers/ OEM may advise more rigorous service. Additionally environmental conditions and factors can reduce the service life of wire ropes that must be considered when applying the above.

WARNING

Wire ropes absorb moisture and corrode internally without any detectable sign on the surface. Even if the surface condition of rope appears perfect, pull out, main winch, hose reel and rod winch ropes must be replaced as per the recommendations as outlined in the section of the Operators Manual "Maximum Service Life of Wire Ropes" must be adhered to.

Wire Rope Grips (Bulldog clamps) are not to be used for lifting applications. Wire Rope Grips are manufactured to AS2076, not to be used on live running ropes, supporting persons or suspending loads.

17. Connection Points (haulline pins)

The drilling company should ensure that it has a process for managing the connection point between the haulline and drilling equipment should be a fitted with a failsafe device to prevent release. E.g. Hammer lock, D-Shackle, Disc Locking Clevis Pin.

The connection pin should not be retained with a safety clip, airline safety clip, Lynch Pin (tractor pins) or any type of locking device that could be caught in the mast and release.

18. Overshot

The drilling company should use a lockable overshot and the most up to date design available on the market. The overshot should be connected to the Wireline by a Splice which was completed by a certified rigger or be a crimped style connection compliant to the SWL of the Wireline. The minimum construction of Wireline should be Steel or High Tensile wire cable or fibre type rope all of which should meet the applicable lifting rating (SWL) of the equipment (overshot and inner tube).

Example of crimp: <http://austlift.com.au/files/catalogue/Section5.WireRopeFitting.pdf>

Note 1: User of steel wire cable should be caution of the use of fibre core steel cables as these have in the past rusted inside out, a maintenance regime should be in place.

Note 2: For fibre type lifting rope the attachment instruction / procedure to the Overshot should be supplied by OEM / equipment owner in a written format (installation procedure) and have an applicable training package developed.

The overshot should not be used to lift the inner tube unless fitted with a certified lifting device or safety chain. It is preferred that the inner tube is lifted and run out using the haulline with a certified lifting device. The device should remove lifting of the Core Barrel Spear, Overshot and Jarr Bar.

19. Winches

The drilling company/ importer/ OEM should have a process in place to prevent rated equipment exceeding Safe Working Load, Working Load Limit and rated Capacity of the drill rig.

Winches should be fitted with controls for speed and load limited, if required with a device to ensure that the wire rope feeds correctly onto the winch drum when using wire cable, example Archimedes Screw etc.

All winch lines (main, tool & equipment handling, Wireline) should be fitted with upper hoist limits and not be fitted with a free fall / winch disengage function control.

20. Rated Shackles

Where there is a requirement for Rated Shackles, their use should be as is described in the Australian Standards.

21. Hoses, Lines and Systems

The drilling company should have a process for managing hoses, lines and systems.

For managing hoses, lines and systems the following are items to consider:

- The correct product selection, whenever it is components for a hose assembly or one of the numbers of accessory products such as Ball Valves, is essential to ensure optimum performance, service life and safety.

When selecting the components for hose assemblies you could use the following acronyms:

Effective acronyms to assist in remembering the key points are the words FACTORS or STAMPED.

FACTORS	STAMPED
F - Fluid to be conveyed A - Application C - Coupling T - Temperature – check ambient temperature O - Operating pressure – remember spike pressures R – Rate of flow S - Size *Hydraulink Fluid Connections Limited	S = Size T = Temperature A = Application M = Material to be conveyed P = Pressure E = Ends or couplings D = Delivery (volume and velocity) **manuli rubber industries

* Hydraulink Fluid Connections Limited has the term FACTORS copyright

** Manuli rubber industries has STAMPED trademarked

A hose energy diffusion type sleeve should be fitted to hoses identified through a risk based process as being located in an area where there is a potential of harm to people due to an uncontrolled release of fluid in the event of a hose failure. This diffusion type sleeve should be FRAS rated and should be securely attached at each hose end.

Hoses should be stored in accordance with the OEM specification and stored in locations that prevent damage while in storage.

Reference documents that should be used managing hoses will be MDG 41, relevant Australian, or International Standard, legislation and OEM requirements.

22. Air Compressors

The drilling company should have a process in place for managing air compressors and high pressure air.

With compressors the drilling company should consider noise and the generation noise from equipment and drilling process. Air Compressors should comply with requirements set out in AS/NZS 1210.

Examples for managing noise is:

- Fitting of full or part noise suppression;
- Distance from work area (this could be considered less desirable).

Maintenance (condition and inspection) should be as per the AS 3788 and Original Equipment Manufacturers (OEM) requirements.

Testing

A certified inspector should test pressure Relief Valve (PRV) annually unless OEM states inspection frequencies less than annually.

Inspections

The compressors / receiver tanks should have biannually, 2 yearly, external inspections and four (4) yearly internal inspections by a certified inspector as defined in AS 3788.

A register of testing is to be maintained, backed up by test certificates, and recorded in the equipment register.

Note: That AS 3788 has a deferral period of 3 months for testing whoever this should be agreed between parties.

23. High Pressure Air Hoses

Compressed Air Hoses / Lines

The drilling company should apply the same principles as hoses, lines and systems to high pressure air hoses. The correct product selection fittings and hose assembly is essential to ensure optimum performance, service life and safety. The drilling company should apply the FACTORS / STAMPED process for determining correct selection of hoses and fittings used in the drilling with supporting documentation.

The drilling company should determine the life cycle of the hoses used for the high pressure drilling with reference to the applicable standards requirements. The hoses will have a unique identification number and be included in the equipment registers.

Sample Air Hoses / Lines

The drilling company should apply the same principles as hoses, lines and systems to high-pressure sample hoses. The correct product selection, fittings, and hose assembly, is essential to ensure optimum performance, service life and safety. The drilling company should apply the FACTORS / STAMPED process for determining correct selection of hoses and fittings used in the drilling with supporting documentation.

The drilling company should determine the life cycle of the hoses used for the high pressure drilling with reference to the applicable standards requirements. The sample hoses will have a unique identification number and be included in the equipment registers.

Important Note: The life cycle of reverse circulation sample hoses should be a high priority for the drilling company and exploration companies. An example of a site hose replacement procedure requires 3 hose end cut off and then replaced.

24. High Pressure Air Hose Fittings

Compressed Air System

A crimped type fitting on air system is the most preferred method on all high-pressure air hose in compliance with OEM recommendations.

Clamp type fittings should not be used on high-pressure air hoses.

RC Sampling System

A bolt type clamp fitting is the general fitting used on Reverse Circulation Sampling system.

Important note: Fittings like Dixon Boss bolt clamp type, the OEM has specific requirements for changing and fitting these types of clamps that include OEM specific training, bolt and clamp replacement. Reference website <https://australia.dixonvalve.com>

25. High Pressure Air Hose Restraints

The drilling company should have a process for managing high-pressure hose restraint. The company National Cables Grips or similar supply company should be consulted for Hose Restraints specifications.

The following examples of hose restraints for all high pressure air hoses:

- Are fitted with a cable stocking type with two attachment legs which terminate in an eye on both ends of the hose;
- Have a protective coating such as plastic or rubber hose to protect the legs;
- Have a rated breaking strength which meets or exceeds those (for rating refer to the following website);

- The restraints must be attached to separate certified anchor points for each eyelet;
- Are attached to fit for purpose attachment points through the use of rated devices: shackles / hammer lock etc.;
- Have a unique identification number; and
- Have NATA accredited test certification, including proof of conformance.

Additionally to the above, auxiliary compressor hoses that go from one truck / unit to another should have a full-length hose restraint fitted. Sample hose on Reverse Circulation (RC) drill rigs: the hose restraint should only be a minimum 3 meters long.

All Hose Restraints should be recorded in the equipment register.

Reference for hose restraint specifications / information; www.ncg.com.au.

26. Air Release

The drilling company should consider fitting the drill rig with a muffler or device to silence compressed air release.

27. Dropped Drill Rod Catcher

The drilling company should have a process in place for managing the risk of dropped rods. A drill rig should be fitted with a device that prevents a drill rod falling to the ground out of the drill rig mast or from the rod handler / haulline.

An example of what the device should and should not do:

Procedure:

- Engineered designed with specifications;
- Change management completed;
- Detailed equipment & operational Risk Assessments;
- SWMS / SWP / SWG etc up dated to reflect the introduction.

People:

- Training assessments developed and rolled out.

Equipment:

- Not interfere with the drilling operations;
- Not interfere with adding or subtracking rods / casing (e.g. not to have the haul line rubbing on the device as the rod hoops are currently doing) when using either wire / haul line or rod loader;
- Not cause an additional hazard;
- Protect against rod falls when using rod loader / hook clamp shell (e.g. the drive head is interlocked with the device so that it will only operate when the device is in the closed position;
- The device should be in place when connecting to the drive head.

28. Drill Rod Detaching / Releasing Prevention Device

The drilling company / importer / OEMs should have a device that prevents a drill rod detaching / releasing from the drive head other than for operational controlled reasons.

29. Rod Loader / Handler

Drill Rod Loading equipment may assist in reducing manual tasks and a way of removing workers outside the work area / drop zone at the drill rig.

The drilling company / importer / OEM should have a process in place to prevent dropped drill rods out of rod loaders.

The incidents:

- Dropped rod out of rod cup;
- Dropped rod from rod clamps;
- Collision with drive head and rod loader (either by not moving away before lowering drive head / moving rod loader in before drive head is fully raised);
- Detached rod from drive head after lowering; and
- Drill rod picked up from rod arms and lifted but the rod loader was not clamped on the rod and when put into loading position the drill rod dropped.

An example of this could be fitting the rod loader with a “Two Position Release” or similar operating system / device. The “Two Position Release” would be at the rod bin / rack and connect / disconnect at the drive head.

The example following devices should be fitted:

- Interlocks to comply with the “Two Position Release” requirements;
- Interlocks to prevent slewing in the horizontal position when a rod is fitted;
- Interlock to prevent drill rod release when loading drill rods before the drive head is connected to the drill rod;
- Interlock to prevent collisions between rod handler with or without drill rod and drive head lower or raising;
- An intermittent warning device for slewing in or out after being on standby greater than 30 seconds;
- A video camera to observe drill rod and drive head joint connection at top of the mast;
- A protection system to prevent access to no go zones of the rod loading system; and
- For clamps style rod loader, the clamp system should prevent rod drops in all positions.

Important:

Safety functions

A warning alarm system should be fitted to the rod loader that will sound for approximately 3 seconds when operating the rod loader after it has been stationary for greater than 30 seconds.

The interlock system should fail to safe (meaning if an interlock fails the whole system does not work).

The pre-start form should include inspecting the rod loader to check the structure and operation of interlocks.

Sandvik DA 554 Rod Handler:

For KL Rod Loader / Sandvik DA 554 Rod Handler should have the tram lockout safety function as standard to prevent the jaws from tramming when the tilt arm is raised over 15 degrees (Sandvik document DA554 TS 002ENG/2010). If not fitted as standard then it should be retrofitted to prevent jaw tramming above 15 degrees.

30. Hydraulic Controls

Hydraulic control levers for rod bin / sloop etc. should be in good operating condition (not worn). It is preferred that the hydraulic system be a pilot operated hydraulic system to reduce hydraulic pressure within the operating area.

Ergonomic code controlling (feel control) of controls in a method use to help prevent human error of activating the wrong control at the wrong time that could result in an incident.

Code controlling of control lever should be considered for specific control levers such as Haul and Wire Line, Break out, C-Spanner, Footclamps and other high risk controls identified.

31. Mast

Exploration drill rig masts should be engineered design to the relevant Australian Standard for Steel Work.

The mast should be fitted with a 'Dump Mast' function for specific type drilling. This will allow the working table to be lowered to ground level and to allow the drill rig dust or gas control devices to be fitted under the mast. A warning alarm that is a different sound to the raise alarm function should be fitted to the mast dump function.

32. Mast Alarm

A drill rig mast should be fitted with a raise and lower warning alarm to warn all persons with in the work area.

33. Break out

The drill rig should be fitted with a certified drill rod break out system and it is preferred that it is a hands free system.

If the drill rig is not fitted with a hands free break then it should be fitted with an OEM certified break out system. Examples are OEM certified equipment such as rated petal tong, Metzke MakorBreak™ or wrap spanner or other for use with hydraulic break-out system.

Uncertified Stilsens should not be used for breaking out and at no time should tools be backed against the drill mast or like and hydraulic or other means applying mechanical power to the tool be used.

The drilling company/ importer/ OEM should investigate eliminating the use of break out Stilsens from the industry.

34. Break out hammer bits

The company should have a system for break out of hammers, bits etc.

Examples of devices but not limited to:

- Certified bit baskets;

- Certified break out tools;
- Certified hydraulic break out tools.

35. Rod Spinner

The drill rig should be fitted with a rod spinner for breaking and making of drill rods for PQ / HQ / NQ.

36. Tools

Tools should be in an operable condition and well maintained.

The use of “cheater bars” should not be used.

37. Welding

Welding equipment should be in an operable condition and well maintained. All should meet the requirements of the EOM, electrical testing and tagging requirements.

Welding equipment machines should be fitted with a safety device to prevent electrical shock when coming into contact with the welding positive and negative circuits. Eg. Z-rid Device / VRD.

38. Gas Monitoring

An inherent risk for exploration drill rigs is in seam flammable gases that can be intersected by the drilling process. All drill rigs should have available gas testing and detection equipment that is calibrated, in operable condition and well maintained. A bump test kit should be available for each monitoring unit at all bump tests each time the monitor is used.

The drilling company should determine the need for continuous monitoring applicable to risk. All gas readings should be recorded with date, time, locations, type of gas and levels.

39. Storage (Toolbox)

The drill rig and ancillary should be fitted with adequate toolboxes which will allow for appropriate storage of equipment including but not limited to allow tool / equipment and consumables to be stored to prevent falling out or down, secured, free from damage. Separation of items (e.g chemicals from tools).

40. Portable Pump

Portable pump is a single or twin cylinder driven combustion engine used for water transfer and drilling fluid mixing.

Note that some clients may prevent the use of Petrol driven engines.

Other examples of pumps are hydraulically driven pumps that may reduce manual tasks and the use of combustible fuels.

41. Electrical

All portable electrical tools, appliances and equipment should be fit for purpose, in good working order, and regularly maintained. Where practicable, tools and equipment insulation should be as a minimum Class II type (double insulated), or equivalent.

All portable electrical tools and appliances should be supplied through a residual current device (RCD) providing personnel protection in accordance with AS/NZS 3190.

All electrical tools, appliances and equipment should be tested and tagged. All testing and tagging should be completed in accordance with applicable sections of AS/NZS 3760:2010: In-service safety inspection and testing of electrical equipment.

All details of the inspections should be recorded in equipment register.

42. Jacking System / Stability

Jacking systems on drill rigs and sloops etc. should be fitted with hydraulic fail-safe valves e.g. compensating pressure valves, load lock valves. The drilling company/ importer/ OEM should determine the best hosing system for the connection between the hydraulic ram and valve: steel vs. flexible hose.

Hydraulic jacklegs should be independently operable to provide stability. Jacking pads / feet should be of adequate size. Consideration should be given to the locations of the jacking rams on the rig (away from the drill hole – to the outside of the drill rig), size of the jacking pad, configuration, type of drill hole (with or without a cellar), type of drilling (air or mud) and ground conditions.

Additional jacking support can be utilized such as jacking pads (wood, steel, plastic). Example www.makinex.com.au

An engineering device may need to be fitted to prevent hydraulic ram creep.

43. Mud & Auxiliary Pumps

The water injection system should be fitted with a stainless steel one-way valve to prevent pressurisation of the Bean pump from the drilling system. The Bean Pump, pump out hose should be fitted with a tap on the end and be secured when the hose is not in use.

A hydraulic driven agitator for mud mixing should be used.

44. Well control

The drilling company should have a process for managing well control. The following is an example of maintenance and schedule requirements:

- BOP / Washington Diverters / Annular Bag will be certified with annual inspections and five (5) yearly overhaul inspections to be completed. Records should be maintained and included on the site equipment register.

Reference to the applicable industry / international standard should be made.

Note some clients will set the applicable standards and procedures for managing this.

45. Dust control

All drilling and associated equipment (e.g. grouting rigs) should have in place a process for managing dust generation.

Examples of methods for managing dust but not limited to;

- Should have water injection;
- Non-certified dust deflectors;
- Dust suppression;
- Drilling on water or mud; and
- Certified Washington diverter etc.

46. Noise control

All compressors should be fitted with noise suppression system that limits noise sources to a maximum of 83 dBA (as measured one meter from the source). All other drill rigs and associated equipment engines or noise-generating components should be considered for fitment of noise suppression systems.

47. Fuel Storage

All bulk fuel storage tanks / containers should comply with the relevant Australian Standard and should be self-bunded or stored in an approved bunded area.

48. Battery

All batteries should be in good condition, fitted with a battery cover and all connectors / wires and be free from exposure to damage / wear.

49. Core Barrel / Tube Handling

The company should have in place a system to prevent the handling and running out core tubes. Examples: certified core tube slide.

50. RC Blow Down

The drill rig should be fitted with a device that prevents drill crews being exposed to unplanned movement by the sample hose when performing maintenance, repairs or replacement of components in the sampling system.

See photographs of an example lock to open the blow down controls.

51. RC Cyclone Inspection Doors

The drill rig should be fitted with an interlock device on inspection doors to the cyclone that prevents drill crews being exposed to high velocity air samples and compressed air.

CONTROLLED WORK ENVIRONMENT

1. Emergency Management

An Emergency Management Plan should be developed through the process of risk assessment aimed at ensuring that indicators of potential events, principle/significant hazards are identified, monitored and appropriately responded to in a coordinated and orderly manner.

The plans should consider but not be limited to the location, working hours, site access, communication methods, emergency response times, possible emergency scenarios which includes but not limited to (fire, ambulance, police, helicopter rescue, and site rescue teams) and onsite personnel competency requirements.

The drilling company may be required to comply with the sites Emergency Plan that will need to be communicated to onsite personnel.

Industry may recommend a minimum of six (6) monthly emergency exercises to test the ability of the current Emergency Plan to meet the desired outcomes of an emergency response.

2. Work Areas

Pre-Inspections

Prior to mobilising any equipment or people to a new work area site, the following checks and inspections of the work area should include but not be limited to:

- Location of services - underground and above ground
 - Powerlines
 - Potential for cave ins
- Type of soil/area being drilled into and associated risks
- Animals
- Fences
- Trees
- Creeks and other bodies of water
- Physical locality
 - Isolation
 - Access (daily and in emergencies)
 - Communication

Daily Work Area Inspections

Once mobilised on site, daily work place inspections should be carried out to ascertain if there has been any changes in the physical working environment. The process should be formalised to ensure consistency in capturing potential areas of change.

Note: There may be additional legislative requirements and / or client requirements to conduct these inspections (i.e Queensland Coal Mining Safety and Health Regulation 2001, regulation 141).

3. Lightning Detectors

The drilling companies should have a process in place for managing working in the outdoors that could be exposed to lightning strikes.

Example of tools that could assist:

- Lightning detectors (refer to AS 1768).

Example: www.lightningman.com.au/ Thunder Bolt – lightning detector.

4. Dust Management

For dust management refer to the relevant Australian Standard and applicable legislation for management, monitoring and health surveillance. Note that clients could expect that drilling companies comply with their company procedures.

The key to managing dust is to eliminate it being exposed to the workers during operations. If dust cannot be eliminated, then other methods such as separation from the work area should be used. Examples of this could be pressure seal air-conditioned cabs.

5. Noise Management

For noise management refer to the relevant Australian Standard, NOHSC and applicable legislation for management, monitoring and health surveillance. Note that clients could expect that drilling companies comply with their company procedures.

Equipment should not operate outside the national noise exposure standards. Reference, national standard for occupational noise means the national standard for occupational noise stated in NOHSC's document entitled 'National Standard for Occupational Noise [NOHSC:1007]'.

The key to managing noise is to eliminate workers being exposed to noise during operations. If noise cannot be eliminated, then other methods such as separation from the work area must be used. Examples of this could be the fitting of noise reduction cabinets to equipment.

Each drill rig should have a noise survey completed in accordance with Australian Standard 1269 and performed by an accredited person. A noise survey diagram should be compiled for each individual piece of drill rig. This diagram should be in plain English and demonstrate clearly areas that exceed the exposure limit.

6. Working at Heights

The drilling company should have in place a process for managing work at heights. Where possible, working at heights should always be eliminated.

Climbing of the mast is not recommended and a review of the procedure should be completed.

Examples of options for work on the mast:

- Work on the mast should be completed with equipment such as Elevated Work Platforms (EWP) / Crane and Dogbox etc;
- Installing approved access / egress stairs and ladders to work platforms; and
- Equipment and personnel training requirements to meet client procedures, Australian Standards and legislation.

Note some clients may expect the company's procedure be adhered to.

7. Night time Operations

Where a drilling company has night time operations it should have a process in place to manage night work. The company should determine acceptable levels of light lux and the reference material Australian Standards AS 1680.

Example of lux level for general workshop area is 160 lux, for machine shop high tolerance work bench is 400 lux.

Note some client restriction may apply to night-time work for risk related tasks and emergency response capabilities.

All lighting equipment should comply with the applicable site compliance and electrical requirements.

8. Exclusion Zones

The company should have in place a system for managing hazardous areas around the drill site. Entry into the drill site all persons should have the minimum PPE requirements. Examples of these areas are as listed below:

- Area around the drill site (typically 50m x 20m = 1000m², for larger areas a permit maybe required);
- The Entry points to the drill site;
- Areas around the drill rig and equipment;
 - Locations near the air compressors including supply / delivery hoses;
 - Locations near mud pumps including supply / delivery hoses;
 - Areas around the drill rig, normally 7 metres from any location that a drill rod is being raised or lowered including where Rod Loaders are being used;
 - Abandoned or previously drilled boreholes;
 - Areas around gas control devices Gas Diverters, Blooie / Blewie lines approximately 8 metres
 - Ends of core barrels including conventional or inner tube type;
 - Any loads lifted by cranes including Vehicle Loading Cranes (VLC);
 - Hotwork 10 metres from any bore hole;
 - It is recommended that No Smoking, Naked Flames or Hot Work occur on the drill site (smoking as a minimum at the entry points);
 - Any Hot Work should be by permit only.

Only authorised personnel, typically drill crew, supervisors and maintenance personnel should be permitted to enter Exclusion Zones or restricted areas. Other persons wishing to enter an exclusion zone must first seek permission from the drill crew, and only enter if authorised.

9. Bore Hole Logging

In the process of bore hole logging a radioactive source may be used. This process is usually carried out by an external accredited company and not the drilling company. The drilling company should ensure all procedures and exclusion zones put in place by the bore hole logging contractor are strictly adhered to.

10. Amenities

The drilling company should make available hand washing/ hygienic facilities, cooling containers for storage for crew food/ cribbing, cool potable water minimum 5 litres / person/ day, seating and shelter.

On-site toilets be available and be maintained in a hygienic condition. Where applicable air conditioned crib huts should be supplied to work crews.

11. Task Observations

The company should monitor the behaviour of its workforce to ensure they are performing work in a safe manner and not working unsafely. It also monitors environmental conditions (work areas / equipment) to identify unsafe conditions. This process of monitoring is done by Task Observations and should be carried out by management, supervisors, and the workforce. Note that clients may call this process by different names.

12. Internal Field Auditing

Regular auditing helps to establish a level of confidence in the effectiveness of the safety system and the safety of personnel engaged.

These audits will be carried out by management and management representatives and the responsible person or their nominated person for their applicable area of responsibility. These audits may include a representative of the workforce and the client.

13. Supervision and Management

Supervisory control refers to the need for the work process to be defined, directed and checked. The effective role of the “supervisor” is key to a quality work process (*MDG1010 Minerals industry safety and health risk management guideline, January 2011*).

Supervisors and Managers should enable and demonstrate the effective implementation of company procedures and policies.

This includes the ability to develop and assess the suitability and sustainability of work schedules, work procedures, equipment procurement and personnel recruitment through open communication and employee participation.

Appendix 1: Example Drill Rig First Aid Contents List

Qty	Description	Use
2	Conforming Gauze Bandage 2.5cm	Holding Dressings and Pads
2	Conforming Gauze Bandage 5.0cm	Holding Dressings and Pads
2	Conforming Gauze Bandage 7.5cm	Holding Dressings and Pads
2	Hospital Crepe 7.5cm	Supporting Sprains and Strains
6	Triangular Bandage Material	Fracture Management/Support
1	Kidney Dish	Mixing Swabs and Antiseptics
1	Galley Pot 150ml	Mixing Swabs and Antiseptics
1	Emergency Blanket	Maintaining NORMAL Body Temperature
2	Instant Ice Pack Small	Reducing Swelling/Pain
2	Instant Ice Pack Medium	Reducing Swelling/Pain
5	Swab Gauze 7.5cm x 7.5cm	Use with Antiseptic to Clean
10	Alcohol Swab Each	Cleaning the Skin/Minor Scratches, etc.
12	Aerowipe Cleansing Wipes	Prevent Cross Infection
15	Saline 15ml Each	Cleaning Wounds
1	Saline Solution 500ml	Flushing Eyes
1	Icy Cool Spray	Relief from pain, bites, minor burns
1	Rapaid Spray 50ml	Natural Antiseptic
6	Plastic Bags large 250x250	Prevent Cross Infection/Disposal of waste
2	Non-Adhesive Dressing 5x7.5cm	Applying Ointments – dry covering
2	Non-Adhesive Dressing 10x10cm	Applying Ointments – dry covering
2	Non-Woven Combine Dressing 10x10	Controlling Bleeding with direct pressure
1	Non-Woven Combine Dressing 9X20	Controlling Bleeding with direct pressure
2	Wound Dressing No.13	Controlling Bleeding with direct pressure
2	Wound Dressing No.14	Controlling Bleeding with direct pressure
2	Wound Dressing No.15	Controlling Bleeding with direct pressure
2	Band-Aids Box/50 Plastic	Covering Superficial Wounds
2	Band-Aids Box/50 Fabric	Covering Superficial Wounds
2	Micropore 2.50cm	Holding Bandages in Place / Dressings
5	Eye Pads Sterile	Emergency Eye Cover
1	Register of Injuries	Recording obs/record items used/pass messages
1	First Aid Book Small	For the Forgetful/Untrained
1	Resuscitation Shield	Preventing Cross Infections
1	Safety Glasses Clear Wraps	Protecting Eyes
1	Latex Gloves Disposable (10)	Preventing Cross Infections
1	Forceps Disposable (S/S)	Removal of Splinters – SINGLE USE
5	Splinter Probe Packet/5	Removal of Splinters – SINGLE USE
1	Sharps Container	Preventing Cross Infections
1	Scissors Stainless Steel 12.5cm	Cutting Dressings and Bandages
1	Safety Pins Packet/12	Holding Bandages in Place
1	Note Book & Pencil	Recording obs/record items used/pass messages
1	Snake Bite Kit	Treating Snake Bites

Appendix 2: Example support equipment first aid contents list

Qty	Description	Use
2	Conforming Bandage 2.5cm	Holding Dressings and Pads
2	Conforming Bandage 5.0cm	Holding Dressings and Pads
2	Conforming Bandage 7.5cm	Holding Dressings and Pads
2	Medium Hospital Crepe 7.5cm	Supporting Sprains and Strains
3	Triangular Bandage Material	Fracture Management/Support
1	Kidney Tray Large	Mixing Swabs and Antiseptics
1	Gallipot 150ml	Mixing Swabs and Antiseptics
1	Emergency Blanket	Maintaining NORMAL Body Temperature
1	Hot and Cold Pack Large	Reducing Swelling/Pain
2	Instant Ice Pack Small	Reducing Swelling/Pain
2	Gauze Swabs 7.5x7.5cm (3)	Use with Antiseptic to Clean
5	Alcohol Swabs Each	Cleaning the Skin/Minor Scratches, etc.
6	Aerowipe Cleansing Wipes (skinprep)	Prevent Cross Infection
10	Saline Solution 15ml	Cleaning Wounds
1	Saline Solution 500ml	Flushing Eyes
1	Icy Cool Spray 250g	Relief from pain, bites, minor burns
1	Rapid Spray 50ml	Natural Antiseptic
6	Plastic Bags large 250x250	Prevent Cross Infection/Disposal of waste
2	Non-Adhesive Dressing 5x7.5cm	Applying Ointments – dry covering
2	Non-Adhesive Dressing 10x10cm	Applying Ointments – dry covering
2	Combine Dressing 10x10cm	Controlling Bleeding with direct pressure
2	Wound Dressing No.13	Controlling Bleeding with direct pressure
2	Wound Dressing No.14	Controlling Bleeding with direct pressure
1	Wound Dressing No.15	Controlling Bleeding with direct pressure
2	Aero Fabric Strips Pk 50	Covering Superficial Wounds
2	Micropore 2.50cm	Hold Dressing and Bandages in Place
3	Eye Pads Sterile	Emergency Eye Cover
1	First Aid Book Small	For the Forgetful/Untrained
1	CPR Card	For the Forgetful/Untrained
1	Register of Injuries	Recording obs/ items used/pass messages
1	Safety Glasses Clear Wraps	Protecting Eyes
1	Resuscitation Shield	Preventing Cross Infections
1	Latex Gloves Disposable (10)	Preventing Cross Infections
1	Forceps Disposable (S/S)	Removal of Splinters – SINGLE USE
5	Splinter Probe Packet/5	Removal of Splinters – SINGLE USE
1	Sharps Container	Preventing Cross Infections
1	Scissors Stainless Steel 12.5cm	Cutting Dressings and Bandages
1	Safety Pins Packet/12	Holding Bandages in Place
1	Note Book & Pencil	Recording obs/ items used/pass messages
1	Snake Bite Kit	Treating Snake Bite

Appendix 3: Example light vehicle first aid contents list

Qty	Description	Use
1	Conforming Bandage 2.5cm	Holding Dressings and Pads
1	Conforming Bandage 5cm	Holding Dressings and Pads
1	Conforming Bandage 7.5cm	Holding Dressings and Pads
1	Hospital Crepe 5cm	Supporting Sprains/Strains
2	Medium Crepe Bandage 10cm	For the treatment of snake bite etc.
2	Triangular Bandage Material	Fracture Management/Support
1	Emergency Blanket	Maintain Normal Body Temperature
1	Instant Ice Pack Small	Reduce Pain/Swelling
2	Swab Gauze 7.5cm x 7.5cm	Use with Antiseptic to Clean
5	Saline Solution 15ml	Cleaning Wounds/eye wash
1	Eye Cup	Rinsing eyes - personal use
1	Eye Wipe - double ended	Lint remover
2	Rapaid Itch Relief Sachet	Bites and Stings
2	Burnaid Gel Sachet	Minor Burns
9	Povidone-Iodine Sachet.	Antiseptic Purposes
2	Rapid Sachet 1g	Natural Antiseptic
2	Combine Dressing 9x10cm	Control Bleeding with Direct Pressure
1	Combine Dressing 20x20cm	Control Bleeding with Direct Pressure
1	Band-Aids (50) Plastic	Covering Superficial Wounds
1	Fabric Roll 1m	Covering Superficial Wounds
1	Aero Tape 1.25cm	Holding Dressings/Bandages in Place
2	Eye Pads Sterile	Emergency Eye Cover
1	First Aid Leaflet	As a Reminder/for the untrained
1	Resus Shield	Preventing Cross Infection
1	Gloves Disp (10)	Preventing Cross Infection
1	Forceps S/S	Removal of Splinters - SINGLE USE
1	Splinter Probe Packet/5	Removal of Splinters - SINGLE USE
1	Scissors S/S 13cm	Cutting Dressings and Bandages
1	Safety Pins Packet/12	Holding Bandages in Place
2	Non - Adhesive Dressing 7.5x10cm	Apply ointments - dry covering
1	Snake Bite Kit	Managing snake bites

Appendix 4: Drill Rig NDT Inspection Procedure

1. PURPOSE

Guidelines for Crack Inspections of Drill Rigs

The purpose of this procedure is to provide the drill rig owner and non-destructive testing companies with a guideline of the components and areas that should be inspected on a drill rig to ensure that it is in a safe operational condition. The non-destructive testing procedure is for the detection of cracks in welding and components on a generic drill rig to be inspected as a minimum. This procedure does not replace the drill rig manufacturer's inspection requirements or any drill rig inspection requirements specified by any industry standards.

2. SCOPE

This procedure is used to detect any surface breaking cracks in the structural components of the drill rig that may have occurred during in-service usage. The NDT method to be used will be at the discretion of the inspector based on the condition of the drill rig presented for testing. The testing method used must be in accordance with the relevant Australian Standard. Personnel holding appropriate certification from the Australian Institute of Non-Destructive Testing or the CIB-NZ should be deemed qualified to carry out the inspection.

3. PROCEDURE

The areas to be examined should be as per the following as a minimum. Any additional areas as specified by the drill rig inspector must also be examined and recorded in the report.

Mast:

- Hydraulic Lift Ram Mounts (top & bottom);
- Mast pinning areas;
- Pull down and back associated components;
- 10% of lacing node points in each chord, if any defects found then check all nodes;
- Top of mast;
- Drill table; and
- Bottom of mast including under table.

Critical Lifting components:

- Winch mounts and bolts;
- Sheaves and mounts; and
- Turnbuckles on pull down chains / ropes.

Out Riggers/ Jacks:

- Outrigger box & mounting;
- Jack cylinder mounts; and
- Any butt joins on plates.

General:

- All load lift lugs brackets;
- All hose restraint anchor points; and
- High pressure steel pipes attachment and anchor points.

4. DEFECT ASSESSMENT

The intent of the inspection is to locate only cracks in load bearing members that may have developed in service of the drill rig. The quality, shape & size of welding such as minor surface porosity, weld undercut, irregular weld cap, weld roll over, and minor lack of fusion should not be considered for the purpose of this inspection requirement. The technician performing the test should determine the extent of testing procedure to ensure area inspected is free of cracks. Any defect interpreted to be a crack – irrespective of length – will deem the component rejected.

5. DOCUMENTATION

A record of results should be made to provide the following information:

- Name & address of drill rig owner;
- Make & model of drill rig;
- Serial number of drill rig;
- Plant number of drill rig (if applicable);
- Name of Testing Authority;
- Report number;
- Date of test;
- Name of technician;
- Type of material;
- Type of test;
- Condition of surface;
- Non-destructive testing procedure used and relevant Australian Standard;
- Type of instrument used;
- Any abnormal conditions or restrictions;
- Coating thickness (if applicable);
- The results of test; and
- Signature of non-destructive testing technician

Appendix 5: Glossary and Good Examples

Overshot and chain device



Rotation / table guards





Disc-locking clevis pin and shackle



Foot clamp guards without rod spinner and with rod spinner



Upper hoist limits



Hose Restraint



Break-out Tools



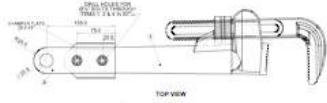
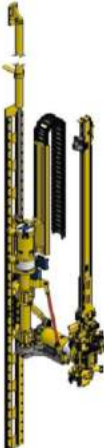
Metzke MakorBreak™



Petal Tong

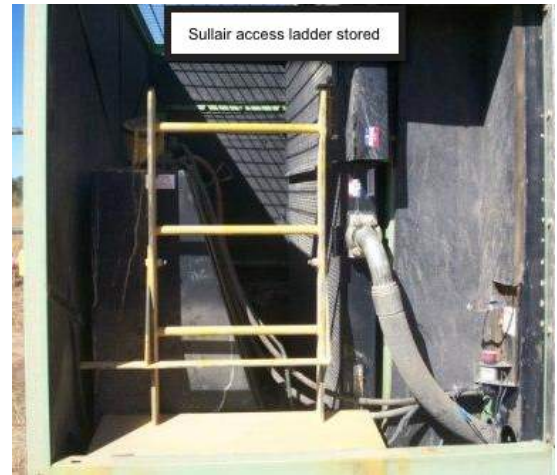


Wrap Spanner

 Scorpion Break-out	 Breakout system	 DiaSpan Spanner
		Certified stilsen supplied by www.hydrapower.com.au 
Rod Loaders		
		
Access and Edge Protection		
 Handrail system 900 mm above the top of load	 Rig access - hydraulic walkways	



Rear hand rails system



Sullair access ladder stored



Sullair access ladder



Isolation Points



Signage



Housekeeping



Environmental Spill Kit



Stabilisation



Core Handling



RC Blow Down



General Safety Equipment



Lightening detector



Example: Working alone personal tracker.
www.asta.net.au

Appendix 6: Reference

www.thebulliongroup.com.au

www.4ps.com.au

www.proceduresonline.com.au

www.miningandconstruction.sandvik.com

www.boartlongyear.com

www.ncg.com.au

www.worksafe.qld.gov.au

www.standards.org.au

www.acusafe.com.au

www.mishc.uq.edu.au

<https://australia.dixonvalve.com>

www.lightningman.com.au

www.makinex.com.au

www.dnrm.qld.gov.au

Appendix 7: Acknowledgments

Exploration Drilling Standards from the following companies, published or unpublished, were referred to in the development of this guideline, pre 2013:

- BHP Billiton (BMA, Iron Ore etc) Drill Standards
- Anglo Metallurgical Coal
- Rio Tinto Australia
- Various Drilling Companies

Safe Work Method Statement

SECTION 1: Overview

SWMS title:	Plan tasks and mobilise to site	SWMS No.:	SWMS 0001
Description of task/job/activity:	Planning job/project and organising mobilisation of equipment and personnel to the work site.	Revision No: (refer to section 8)	0 ☒ 1 ☐ 2 ☐
Project / Job name:		Project / Job address or location:	
Note: SWMS to be used with: Toolbox Meeting Minutes; Take 5, Equipment pre-start, SWMS Plan & Mobilise, SWMS Emergency Response. These are available free from: www.proceduresonline.com.au			Date: (Review 12 mthly)
Scope	This SWMS applies to all employees and contractors engaged in work activities referred to in this SWMS regardless of location.		

Your business details:

Business name:		Company contact name:		Address:	
Contact number:		Company contact position:			
Supervisor name:		Supervisor contact number:		ACN / ABN:	

Principal Contractor Details: (tick please) →

Applicable: (if applicable please complete below)

Not applicable:

Business name:		Address:	
Site supervisor name:		Site supervisor number:	
		Signature:	

SECTION 2: Task/activity

Work/worker is in, on, or near the following: (tick relevant). *Note: all of these activities are defined as high risk tasks and/or activities, except the first two marked with *.*

☒	* general - as directed by the PCBU / Managers / Supervisor	moving or using powered mobile plant at the workplace	to enter a trench or shaft more / deeper than 1.5 metres deep
☒	* general - as directed by the Principal Contractor	tilt-up and precast concrete / construction work	working on or near a pressurised gas distribution mains and consumer piping
	working in, over or adjacent to water / liquid where there is a risk of drowning	structural alterations that require temporary support to prevent collapse	work in an area where there are artificial extremes of temperature
	demolition, decommissioning, dismantling work	in a tunnel	removal or disturbance of asbestos
	demolition of a load bearing part of structure	at heights more than two metres	working on a telecommunications tower
	construction and commissioning	using a hazardous substance / chemical	using explosives
	conversion, refurbishment and fitting out	work near an electrical installation or services	diving work
	alteration and renovation	in or near a confined space	maintenance and repairs
	the demolition of any part of a structure that is likely to affect its physical integrity	work in an area that may have a contaminated or flammable atmosphere	working on or near a chemical, fuel or refrigerant line
	working on, or adjacent to, a road or railway or shipping lane or other traffic corridor that is in use by traffic other than pedestrians		

SECTION 3: References. Legislation by State / Territory (list relevant legislation you need to adhere to, eg: WH&S Reg 2011 S454 (2)) / Australian Stds

References:

Further references: Consult relevant Codes of Practice (COP) / Compliance Codes (CC)

The following is a list of known Codes of Practice (COP) / Compliance Codes (CC) in Australia. Not all COP / CC pertain to every state – verify that the relevant Codes of Practice / Compliance Codes apply to your state. If none are available for your state, consult other states Codes of Practice / Compliance Codes. Tick the relevant Codes of Practice / Compliance Codes that apply to the work you are performing.

Queensland:

Abrasive Blasting	Cane Rail Safety - A supplement to the Sugar Industry	Cash in Transit	Children and Young Workers
Concrete Pumping	Confined Spaces	Demolition Work	Working near overhead & underground electrical lines
Managing electrical risks in the workplace	Electrical equipment rural industry	Electrical safety COP 2010 – Works	Excavation Work
First Aid in the workplace	Forest Harvesting	Formwork	Foundry
Hazardous Manual Tasks	Horse Riding Schools, Trail Riding Establishments and Horse Hiring Establishments	How to Manage and Control Asbestos in the Workplace	X How to Manage Work Health and Safety Risks
How to Safely Remove Asbestos	Labelling of Workplace Hazardous Chemicals	Managing Noise and Preventing Hearing Loss at Work	Managing the Risk of Falls at Workplaces
Managing Risks of Hazardous Chemicals in the Workplace	Managing Risks of Plant in the Workplace	Managing the Work Environment and Facilities	Manual Tasks Involving the Handling of People
Mobile Crane	Occupational Diving Work	Preparation of Safety Data Sheets for Hazardous Chemicals	Recreational Diving Rec Tech Diving + Snorkelling
Rural Plant	Safe Design and Operation of Tractors	Safe Design of Structures	Scaffolding
Spray Painting and Powder Coating	Steel Construction COP 2004	Sugar Industry	Sugar Mill Safety - Supplement to the Sugar Industry
Tilt-up and Pre-cast Construction	Tower Crane	Traffic Management for Construction or Maintenance Work	Welding Processes
Work Health & Safety Consultation, Co-operation & Co-ordination			

South Australia:

Abrasive Blasting	Confined Spaces	Demolition Work	Excavation Work
First Aid in the Workplace	Hazardous Manual Tasks	X How to Manage Work Health and Safety Risks	How to Manage and Control Asbestos in the Workplace
How to Safely Remove Asbestos	Labelling of Workplace Hazardous Chemicals	Managing Noise and Preventing Hearing Loss at Work	Managing the Risks of Plant in the Workplace
Managing Risks of Hazardous Chemicals in the Workplace	Managing Electrical Risks in the Workplace	Managing the Risks of Falls at Workplaces	Managing the Work Environment and Facilities
Preparation of Safety Data Sheets for Hazardous Chemicals	Spray Painting and Powder Coating	Welding Processes	Work Health and Safety Consultation Co-operation and Co-ordination

Victoria:

Private Investigators COP	Foundries CC	First Aid in the Workplace CC	Confined Spaces CC
Removing Asbestos In Workplace CC	Workplace Amenities & Work Environment CC	Storage & Handling of Dangerous Goods COP	Lead COP
Managing Asbestos In Workplaces CC	Plant COP	How WorkSafe Applies The Law In Relation To Reasonably Practicable	Demolition COP
Manual Handling COP	Prevention of Falls in General Construction CC	Communicating occupational health & safety across languages CC	Building & Construction Workplaces COP
How WorkSafe Applies the Law to Employing or Engaging Suitably Qualified Persons To Provide Health & Safety Advice	Safety Precautions in Trenching Operations COP	How WorkSafe Applies the Law in Relation to Required to Answer Questions	X How WorkSafe Applies the Law in Relation to Identifying & Understanding Hazards & Risks
Demolition COP	How WorkSafe Applies the Law in Relation to Required to Discrimination on Health & Safety Grounds	Plant COP	Hazardous Substances COP
Preventing Falls in Housing Construction COP			

Western Australia:

Abrasive Blasting	Concrete and masonry cutting and drilling	Control and safe Use of Inorganic Lead at work	Control of noise in the music entertainment industry
Control of Scheduled Carcinogenic Substances	Control of Workplace Hazardous Substances	Ethylene Oxide in Sterilisation/Fumigation Processes	Excavation
Fatigue management for commercial vehicle drivers	Ferry and charter boat industry	First aid-workplace amenities-personal protective clothing	Health and safety in welding-Tech note 7
High pressure water jetting	Labelling of Workplace Substances	Management and control of asbestos in workplaces	Managing noise at workplaces
Man overboard: prevention and response	Manual tasks	Control of Work-related Exposure to Hepatitis and HIV (Blood-borne) Viruses	National Standard for Synthetic Mineral Fibres
Occupational safety and health in call centres	Occupational safety and health in WA public sector	Precast, Tilt-up and Concrete Elements Construction	Preparation of Material Safety Data Sheets
Prevention and control of legionnaires disease	Prevention of falls at workplaces	Safe design of buildings and structures	Safeguarding of machinery and plant
Safe Removal of Asbestos	Safe Use of Vinyl Chloride	Spray painting	Styrene
Violence aggression and bullying at work	Working hours		

Safe Work Method Statement

New South Wales:													
	Abrasive blasting		Confined spaces		Construction work		Demolition work						
	Excavation work		First aid in the workplace		Hazardous manual tasks		How to manage and control asbestos in the workplace						
X	How to manage work health and safety risks		How to safely remove asbestos		Labelling of workplace hazardous chemicals		Managing electrical risks in the workplace						
	Managing noise and preventing hearing loss at work		Managing risks of hazardous chemicals in the workplace		Managing the risk of falls at workplaces		Managing risks of plant in the workplace						
	Managing the work environment and facilities		Preparation of safety data sheets for hazardous chemicals		Preventing falls in housing construction		Safe design of structures						
	Spray painting and powder coating		Welding processes		Work health and safety consultation, coordination and cooperation.								
ACT:													
X	How to Manage Work Health and Safety Risks		Work Health & Safety Consultation, Cooperation & Coordination		Managing the Work Environment and Facilities		Managing Noise and Preventing Hearing Loss at Work						
	Hazardous Manual Tasks		Confined Spaces		Managing the Risk of Falls at Workplaces		Sexual Services Industry						
	Transport and Delivery of Cash		Preventing of Bullying		Formwork		Construction Work						
	Demolition Work		Excavation Work		First Aid in the Workplace		Managing Electrical Risks in the Workplace						
	Managing Risks of Plant in the Workplace		Preventing Falls in Housing Construction		Safe Design of Structures		Welding Process						
	How to Safely remove asbestos		How to manage and control asbestos in the workplace										
Northern Territory:													
	Confined Spaces		Construction Work		Control and Safe Use of Inorganic Lead at Work		Fatigue Management						
	First Aid in the Workplace		Hazardous Manual Tasks		How to Manage and Control Asbestos in the Workplace	X	How to Manage Work Health and Safety Risks						
	How to Safely Remove Asbestos		Labelling of Workplace Hazardous Chemicals		Managing Noise and Preventing Hearing Loss at Work		Managing the Risk of Falls at Workplaces						
	Managing the Work Environment and Facilities		Precast, Tilt-up and Concrete Elements in Building Construction		Preparation of Safety Data Sheets for Hazardous Chemicals		Preventing Falls in Housing Construction						
	Prevention of Falls in General Construction		Safe Transport of Radioactive Material (2008)		Work Health and Safety Consultation, Co-operation and Co-ordination								
Tasmania:													
	Abrasive Blasting		Risk Management of Agricultural Shows & Carnivals		Safe Use of Reinforced Plastics		Abalone Industry						
	Confined Space		Construction Work		Demolition Work		Excavation Work						
	First Aid in the Workplace		Forest Safety Code		Hazardous Manual Tasks		How to Manage & Control Asbestos in the Workplace						
X	How to Manage Work Health & Safety Risks		How to Safely Remove Asbestos		Labelling of Workplace Chemicals		Managing Electrical Risks in the Workplace						
	Managing Noise & Preventing Hearing Loss at Work		Managing Risk of Hazardous Chemicals in the Workplace		Managing the Risk of Falls at Workplaces		Managing the Risks of Plant in the Workplace						
	Managing the Work Environment & Facilities		Preparation of Safety Data Sheets for Hazardous Chemicals		Preventing Falls in Housing Construction		Safe Design of Structures						
	Spray Painting & Powder Coating		Welding Processes		Work Health & Safety Consultation, Cooperation & Coordination								
Client specific procedures: (list here)													
SECTION 4: A, B, C, D, E, F, G, H, I, J													
A	Simultaneous work in the area:												
B	Work Environment												
	Day		Dry / clear		Hot /sunny / humid		Open water		Muddy / slippery		Rocky / uneven		Cold
	Night		Wet / raining		Low visibility (dust/fog)		Public access		Restricted work area		Near road/s		
C	Plant and equipment required: (if you tick any of the boxes below then workers must be made aware of site requirements). Note: equip must be certified, well maintained, have a current inspection and pre-start complete.												
	Power leads		Powered equipment		Working at heights		Scaffolds		Crane use		Explosive tools		Barricades
	Ladders		Air operated tools		Welding machine		Form work		Oxy/acetylene		Working over water		Elev. work platform

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	Forklift		Manual handling		Structure Support		Power tools		Asbestos		Hand tools									
	Other: (list)																			
	Plant & Equipment Testing Requirements																			
D	Permits				Certification				Approval / Communication											
	Excavation / trench		Lift plan / permit		Pressure system (design/register)		Dial before you dig													
	Hot work		Demolition		Engineering		Rail corridor													
	Confined space		Working at heights		Electrical (AS 3000, AS 3012, AS 3760)		Traffic / Access													
	HV switching & access		Scaffold		Other:		Demolition													
	Other:		Other:		Other:		Legal													
	Other:		Other:		Other:		Other:													
E	PPE required: (if you tick any of the boxes below then workers must be made aware of site requirements)																			
☐	Eye protection		☐	Hearing protection		☐	Dust mask		☐	Respirator		☐	Face shield		☐	Welding		☐	Safety harness	
	 Safety glasses: ☐ Safety goggles: ☐		 Ear muffs: ☐ Ear plugs: ☐		 P1 type: ☐ P2 type: ☐ Other: ☐		 Half face respirator: ☐ Full face respirator: ☐ SCBA: ☐ Other: ☐		 Low impact: ☐ Medium impact: ☐ High impact: ☐		 Welding mask: ☐ Welding apron: ☐ Welding gloves: ☐ Welding respirator: ☐		 Full body: ☐ Confined space: ☐ Restraint: ☐							
☐	Head protection		☐	Protective clothing		☐	Hand protection		☐	Foot protection		☐	Hair protection		☐	Safety vest		☐	Other	
	 Helmet: ☐ Wide brim hat: ☐ Cap lamp: ☐ Bump cap: ☐		 Long sleeves/pants: ☐ Coveralls: ☐ High vis clothing: ☐		 Rubber gloves: ☐ Cut resistant: ☐ Heat resistant: ☐ Anti-vibration: ☐ Other: ☐		 Steel capped: ☐ Ankle support: ☐ Rubber boots: ☐		 Hair net: ☐ Other: ☐		 Reflective: ☐ Non-reflective: ☐		☐ Suncream: ☐ Self rescuer: ☐ Chain mesh: ☐ Life jacket: ☐ Other: _____							
F	Training requirements: (work at heights, confined space, trade certificate etc)																			

Safe Work Method Statement

G	Chemicals: Name all chemicals below and ensure all SDS's (Safety Data Sheets) are available (previously known as MSDS - Material Safety Data Sheet).					Hazardous		Dangerous		Schedule for monitoring		SDS	
						Yes	No	Yes	No	Yes	No	Yes	No
Name:													
Name:													
Name:													
H	Emergency Response (refer to SWMS Emergency Response) Tick applicable												
Emergency Contact numbers (Note: Some sites will have own emergency contact numbers)						Police / Fire / Ambulance				000			
Poison Emergency		131126				Mobile (outside carrier coverage)				112			
Site Emergency Rescue Number						Site Emergency Room Number							
Emergency Equipment													
Emergency Assembly Sign		Fire & First Aid Signage				Site Emergency notice board				Other signage			
Fire Extinguisher # ____		Other fire equipment				First Aid Kit # 1				Medical Trauma Kit type			
Spill Kit (Chemical/Oil/Fuel)		Rescue (Rope/Confined Space/Heights)				Other:							
Emergency Locations													
Muster Point						First Aid Kit							
Fire Extinguisher						Spill Kit							
Emergency / First Aid Room						Other: _____							
Appointed First Aiders / Fire Warden / Emergency Personnel Other													
Role		Name				Company				Contact Number			
I	Monitoring												
Workplace Inspections		Work Observation				Audits				Other:			
Daily	Weekly	Monthly	Daily	Weekly	Monthly	Daily	Weekly	Monthly	Daily	Weekly	Monthly		
J	Other – Client specific requirements e.g. Insurances, procedure requirements, Prohibited tools / equipment, Testing requirements												

SECTION 5: SWMS Procedure

Procedure: Complete the tasks, identify & list the hazards, pre-control risk score (no control on hazard), controls for the identified hazards (job steps), hierarchy of control, and post control risk score (with controls in place & effective) required to complete the activity.

Hierarchy of Control (HOC): list the highest HOC for the controls you have listed (eg. Add all that apply). In order of highest to lowest: Eliminate (**EI**), Substitute (**S**), Isolate (**I**), Engineering (**En**), Administrative (**A**) and Personal Protective Equipment (**PPE**). Also state if the control is a Post (**P**), used to mitigate an event. Post event control does not prevent the event from occurring, it will only lessen the impact (eg. fire extinguisher). **Post Control Risk score:** is based on all identified controls being in place and effective including the controls from sections A, B, C, D, E, F, G, H, I and J of this SWMS. Use the Risk Matrix (see last page) to get the score for this column. An example of how to write the risk score is: 2A Mod 16.

No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: Personal injury from a fall from a level. Equipment damage from not completing pre-start, Environmental harm from unsecured oil drums</i>	Pre- Control risk Score eg.: 4C High 18	Controls Define the job step by step, and list how you reduce the level of risk the hazards that you've identified poses.	HOC EI, S, I, En, A, PPE, P	Post Control Risk Score eg.: 2A Mod 16	Responsible Person
1.	Planning	Personal injury from less than adequate: - Resources (number and class of workers) - Tools available and selected – incorrect type or size. - Access to work areas not coincided (heights, confined space). - Site size, layout or condition not suitable for task. - Facilities (potable water, toilets, cribroom). - Means of communication (mobile phone coverage, Internet). - Site security. - Excessive travel times to and from site (No journey management). - Emergency response and supporting agencies (police / fire / ambulance).	2C Low 8	- Management to review the scope of works and time frame to determine: - Number and classification of workers; - Site layout and access; - Tools and equipment required; - Plans, procedures, forms, SWMS required, etc.. - Determine specialised training and or equipment is required, example: - High risk trainings: - Working at heights / Confined space; - Dogger, Rigger, crane driver, etc.. - Equipment: - Gas monitor; - Harnesses and lanyards; - Lifting equipment; - Rescue equipment etc.. - Management to complete a site visit to check and develop: - Size, layout, what signage may be required (PPE,	A, PPE, P	2D Low 5	

				Danger); ▪ Amenities and facilities; ▪ Communications you may require a satellite phone for emergency response; ▪ Site security; ▪ Travel time to site. • Management to develop an emergency response plan prior to start: ▪ Emergency phone numbers; ▪ Site location (include GPS coordinates); ▪ Safe muster point in case of emergency; ▪ Required emergency equipment (first aid kits, fire fighting equipment, etc.) ▪ Emergency training (First Aiders / how to use fire extinguisher etc.) / responsibilities, etc..			
2.	Mobilisation of workers (including demobilisation).	Personal injury from less than adequate: • Understanding, communication of the job and its hazards. • Weather (Inclement - flooding, boggy site, damage to roads). • Roads (closed, traffic conditions). • Travel management, workers lost or delayed traveling to sites including remote sites. • PPE, not meeting minimum site requirements. • Equipment, not inspected and ready for use. • Training requirements / prerequisites, workers not meeting the sites.	3C Mod 13	• Daily toolbox meetings to communicate to workers; • Management, supervision and workers to check: ▪ Check traffic conditions, Weather forecast, etc.. ▪ If mobilising to distance or remote areas, contact local authorities to check the weather in their area; • Management to ensure workers: ▪ Complete travel management plans when travelling to remote or unknown areas; ▪ Have correct training / competency requirements to access the site (blue card, medical, trade papers); ▪ Have all the correct PPE to meet the sites prerequisites e.g. (safety glasses, hard hat, gloves, drill / work clothing which could include long sleeves and pants or drill clothing, etc.); ▪ Have all the required equipment (safety harnesses, gas monitors etc.) inspected and ready for use; ▪ Have been advised of the companies safety, work expectations and site requirements, etc..	A, PPE	3D Mod 9	

3.	Mobilisation of equipment (including demobilisation).	Personal injury from less than adequate: - Equipment, unable to access site (overhead hazards, narrow bridges, load limits on roads/ bridges). - Permits/ permission, not in place. - Management for workers and equipment interacting. - Weather (Inclement - flooding, boggy site, damage to roads). - Equipment, not meeting minimum site requirements (flashing lights, seat belts, break tests, certification).	3C Mod 13	- Management, supervision and workers to check: - Weather forecast; - If mobilising to distance or remote areas, contact local authorities to check the weather in their area; - Check traffic conditions, etc.. - When transporting large pieces of equipment an inspection of the route may be required to determine suitability. Things to consider: - If escorts are required; - Are external utility providers are required (electrical, rail, main roads) (lift power lines, rail crossings; what is the height of overhead bridges, widths and capacity of bridges to be crossed, etc.); - Permits may be required to travel on some roads and or at certain times, do you require permission from a landholder, government body or corporation to cross their land; - Ensure equipment meets the minimum requirements for site equipment standards (could include flashing lights, reversing alarms, 3 / 6 / 12 monthly certification inspections, travelling height indicators, equipment registers including copies of inspection certificates, etc.).	A, En, P	3D Mod 9	
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SECTION 6: Responsibilities

Manager	
- Ensure that hazards are identified and controls are implemented. For example: - procedures are followed/understood, - SWMS and Take 5 are followed/understood, - personnel are trained and competent, - equipment is fit for purpose and well maintained, - there is competent supervision, - workers have been consulted on any safety matters (via toolbox meetings, SWMS, Take 5, verbal instruction / communication)	- Ensure the work place is a safe place of work. - SWMS are reviewed as set in the date section. - Ensure that records are kept for two years (eg. completed SWMS must be kept for 2 years from the occurrence of the notifiable incident or from the end of the project).
Supervisor	
- Ensure that hazards are identified and controls are implemented. - Consult and develop SWMS with workers and use Take 5 prior to starting work. - Have workers review and sign on SWMS. - Ensure that SWMS is amended for identified additional hazards or incidents and communicate to workers prior to continuing work. - Approve SWMS. - Give a copy of the SWMS to the principal contractor if applicable. - Ensure that workers follow the directions in SWMS and Take 5. - Ensure SWMS is readily available on site for inspection or review. - Give used or completed SWMS to the office for company records. - Ensure workers are trained and competent and only operate equipment they are competent / ticketed for.	- Give lawful directions and safety instructions to workers. - Consult with management and workers on safety matters (toolbox meetings, SWMS, Take 5, verbal instruction / communication). - Complete workplace inspections and worker observations. - Rectify unsafe conditions on the worksite. - Counsel workers not working safely or not following SWMS. - Report and investigate incidents immediately. - Work safely and be fit for work. - Supervisors must ensure any change in SWMS is communicated to workers and they monitor that the steps and controls are implemented and effective. - SWMS is reviewed as set in the date section.
Worker (includes sub-contractors)	
- Develop (assist), review and follow procedures, SWMS and Take 5. - Complete work that they are trained and competent for. - Only operate equipment they are competent / ticketed for. - Follow lawful directions and safety instructions. - Consult with management on safety matters (toolbox meetings, SWMS, Take 5, verbal instruction / communication).	- Stop work if unsafe, advise supervisor and help fix unsafe condition. - Report any incidents immediately to the supervisor. - Work safely and be fit for work. - Ensure all changes in SWMS are reviewed and sign in the revision section of the SWMS.

SECTION 7: Acceptance and Sign off for SWMS (Revision 0)

We, the undersigned, confirm that we have been consulted regarding the above SMWS, that its content and responsibilities are clearly understood. We also confirm that our required competencies / tickets etc. to undertake this activity are current, we are competent to complete the work safely and without risk to our own health or the health and safety of others. We clearly understand that the responsibilities and controls in this SWMS must be applied as documented, otherwise work is to cease immediately, and we will ensure that the work area is made safe, as far as reasonably practicable.

Company	Sub-contractor (tick)	Name	Position / Qualification	Signature	Date	Time

I, the undersigned Supervisor, confirm that the workers have been engaged in the development and/or review of this SMWS. I have clearly communicated the safety expectations, responsibilities and controls of this SWMS to the workers. I understand my responsibilities listed in the SWMS and company appointed authorities. I have checked competencies / tickets (including inductions) provided and verify that they are applicable and current. I have checked that all tools and equipment are properly maintained and safe to use. I have issued all relevant permits and have ensured to the best of my ability that the work area is safe and that the work will not damage any property or injure any persons.

Supervisor name:		Supervisor signature:		Date:	
Qualifications:		Experience:			
Senior management name:		Signature:		Date:	
If approved by senior management via telephone, provide date and time of call:					

SECTION 8: Changes or additions to SWMS (Revision Update)

Should the SWMS be altered, added to, or changed in any way it must be communicated to all Workers and acknowledged by all Workers. The relevant revision number box on page 1 of this SWMS must be ticked if revisions are made.

Revision 1: Change identified resulting from: <i>(please tick)</i>		Date:	Time:	Name:	Sign:	Name:	Sign:
	Scope of work	Change identified: <i>(provide details)</i>					
	Incident / Safety alert	.....					
	Risk review	.....					
	Review date	.....					
	Added hazards and controls	.....					
	Legislation change	.....					
	Weather change	.....					
	Instructions	Supervisor name:					
	Other:	Signature:					
Snr Mngt Approval (name):		Signature:					

Revision 2: Change identified resulting from: <i>(please tick)</i>		Date:	Time:	Name:	Sign:	Name:	Sign:
	Scope of work	Change identified: <i>(provide details)</i>					
	Incident / Safety alert	.....					
	Risk review	.....					
	Review date	.....					
	Added hazards and controls	.....					
	Legislation change	.....					
	Weather change	.....					
	Instructions	Supervisor name:					
	Other:	Signature:					
Snr Mngt Approval (name):		Signature:					

SECTION 9: Risk Matrix – use this to get your risk scores for Section 5

Step 1: Establish the Consequence (1-5)						
Consequences		Injury / Occupational Illness or Disease (How to Manage Work Health and Safety Risk - Code of Practice, Safety Work Australia 10 August 2011) The company must ensure levels of consequence and likelihood are relevant to the company's business risk)	Business Loss / Asset Damage	Reputation / Social/ Community	Legal and Regulatory / Contract	Environmental Impact (eg. hydrocarbon spills)
1	Insignif	Report only	<\$5k	Complaint / Single project or stakeholder	Minor non-compliance – internal report only	Negligible pollution
2	Minor	First Aid Treatment Injury/Illness – non-prescription medication / treatment that can be administrated by first aider.	<\$20k	Local public concern	Minor legal non-compliance / contractual issue	Minor pollution / nuisance
3	Moderate	Medical Treatment Injury/Illness – prescription / treatment that can <u>only</u> be administrated by registered doctor/nurse. Minor LTI <5 full day's work lost.	<\$50k	Regional public concern / Multiple stakeholders	Serious breach of law /investigation by authority / on the spot fine. Major breach of contract.	Noticeable pollution
4	Serious	Serious Lost Time Injury /Illness - Loss of 5 or more days work / admission to hospital / series injury under WHSA definition.	<\$100k	National public concern	Significant penalties / termination of contract	Significant environmental event
5	Major	Fatality (single or multiple fatalities)	>\$100k	International public attention	Law suits / prosecution / removal from suppliers list	Major environmental event / material environmental harm

Step 2: Establish the Likelihood (A – E)		
Description		Frequency examples (How to Manage Work Health and Safety Risk - Code of Practice (Safety Work Australia 10 August 2011)).
A	Certain to occur	Expected to occur in most circumstances (> 1 event / month)
B	Very likely	Will probably occur in most circumstances (2 to 1 events / year)
C	Possible	Might occur occasionally (1 event / 1 to 2 years)
D	Unlikely	Could happen at some time (1 event / 2 to 3 years)
E	Rare	May happen only in exceptional circumstances (>3-5 years)

Step 3: The Hierarchy of Risk Control Model			
Start at the top and only if you can't select controls from one section, move to the next one down. You may need to use a combination of control measures to achieve the second level of risk control. If a particular hazard can't be removed the risk associated with the hazard can never be eliminated.			
1	Elimination	Complete removal of the hazard.	Most effective ↓ Least effective
2	Substitution	Replacing the material or process with a less hazardous one.	
3	Isolation	Separate the hazard from people.	
4	Engineering	Guarding, ventilation, design, re-design etc.	
5	Administration	Providing controls such as training or procedures.	
6	PPE	Use of PPE when other controls are not practical.	
7	Post	Mitigation after an event (eg. fire extinguisher).	

Using the Matrix to determine the Risk Score					
Likelihood	Consequence				
	1	2	3	4	5
A Certain to occur	Low 11	Moderate 16	Moderate 20	High 23	High 25
B Very likely	Low 7	Low 12	Moderate 17	High 21	High 24
C Possible	Low 4	Low 8	Moderate 13	High 18	High 22
D Unlikely	Low 2	Low 5	Moderate 9	Moderate 14	High 19
E Rare	Low 1	Low 3	Low 6	Moderate 10	High 15
ALARP – As Low As Reasonably Practical					
Tolerable		Takes action to manage to ALARP		Intolerable (without specific senior mgmt. approval)	

SECTION 9: Risk Matrix – use this to get your risk scores for Section 5

Step 1: Establish the Consequence (1-5)							Step 2: Establish the Likelihood (A – E)																																																							
Consequences		Injury / Occupational Illness or Disease (How to Manage Work Health and Safety Risk - Code of Practice, Safety Work Australia 10 August 2011) The company must ensure levels of consequence and likelihood are relevant to the company's business risk)	Business Loss / Asset Damage	Reputation / Social/ Community	Legal and Regulatory / Contract	Environmental Impact (eg. hydrocarbon spills)	Description		Frequency examples (How to Manage Work Health and Safety Risk - Code of Practice (Safety Work Australia 10 August 2011).																																																					
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4	Serious	Serious Lost Time Injury /Illness - Loss of 5 or more days work / admission to hospital / series injury under WHSA definition.	<\$100k	National public concern	Significant penalties / termination of contract	Significant environmental event	D	Unlikely	Could happen at some time (1 event / 2 to 3 years)																																																					
5	Major	Fatality (single or multiple fatalities)	>\$100k	International public attention	Law suits / prosecution / removal from suppliers list	Major environmental event / material environmental harm	E	Rare	May happen only in exceptional circumstances (>3-5 years)																																																					
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Start at the top and only if you can't select controls from one section, move to the next one down. You may need to use a combination of control measures to achieve the second level of risk control. If a particular hazard can't be removed the risk associated with the hazard can never be eliminated.							<table><tr><th rowspan="2">Likelihood</th><th colspan="5">Consequence</th></tr><tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr><tr><td>A Certain to occur</td><td>Low 11</td><td>Moderate 16</td><td>Moderate 20</td><td>High 23</td><td>High 25</td></tr><tr><td>B Very likely</td><td>Low 7</td><td>Low 12</td><td>Moderate 17</td><td>High 21</td><td>High 24</td></tr><tr><td>C Possible</td><td>Low 4</td><td>Low 8</td><td>Moderate 13</td><td>High 18</td><td>High 22</td></tr><tr><td>D Unlikely</td><td>Low 2</td><td>Low 5</td><td>Moderate 9</td><td>Moderate 14</td><td>High 19</td></tr><tr><td>E Rare</td><td>Low 1</td><td>Low 3</td><td>Low 6</td><td>Moderate 10</td><td>High 15</td></tr><tr><td colspan="6">ALARP – As Low As Reasonably Practical</td></tr><tr><td colspan="2">Tolerable</td><td colspan="2">Takes action to manage to ALARP</td><td colspan="2">Intolerable (without specific senior mgmt. approval)</td></tr></table>			Likelihood	Consequence					1	2	3	4	5	A Certain to occur	Low 11	Moderate 16	Moderate 20	High 23	High 25	B Very likely	Low 7	Low 12	Moderate 17	High 21	High 24	C Possible	Low 4	Low 8	Moderate 13	High 18	High 22	D Unlikely	Low 2	Low 5	Moderate 9	Moderate 14	High 19	E Rare	Low 1	Low 3	Low 6	Moderate 10	High 15	ALARP – As Low As Reasonably Practical						Tolerable		Takes action to manage to ALARP		Intolerable (without specific senior mgmt. approval)	
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Name:		Date:		Time:		am / pm
Job Location:						
Job description:						

Tick yes or no if you can be exposed to the hazard

	Hazard question	Yes	No
1	Can I be injured by being caught in, on or between anything?		
2	Can I strain or overexert myself?		
3	Can I fall onto, into or from anything?		
4	Can I slip or trip on anything?		
5	Can I be struck by a moving object?		
6	Can I come into contact with or be exposed to something that may harm me? (elec, heat, gas, haz. Sub. Or stored energy)		
7	Does anything need isolation and test for dead?		
8	Can something fall on me or can I cause something to fall onto someone else?		
9	Can I be injured by nearby activities or can my activities injure others nearby?		
10	Could there be any uncontrolled movement, like ground movement, machine movement?		
11	Can I spill or pollute something?		
12	Can weather conditions, work environment or poor lighting affect job safety?		
13	Do I need a permit? (Contact your supervisor)		
14	Will I be working below, on or near roadways or rail lines? (if yes traffic / rail permit will be required) (Contact your supervisor)		
15	Will I be working near underground services? Have they been positively located?		
16	Are there any other hazards present?		

Where hazards are managed, write the controls below.

If you tick yes to, **"Exposed to the hazard"** then put controls to manage the hazard in the following table.

Hazard Number	Controls put in place to manage hazard:	Will controls effectively manage the hazard?	
		Yes	No

If you tick **NO** to any of the above contact your supervisor as a JSA will be required.

Hazard Prompts

1	Can I be injured by being caught in, on or between anything? Pinch points, rotating machinery, augers, stump grinder, caught between machinery
2	Can I strain or overexert myself? Does the task require repetitive movement, pushing, pulling, lifting, awkward postures, sustained postures
3	Can I fall onto, into or from anything? Working above 2 metres, fall onto sharp objects, fall from machinery
4	Can I slip or trip on anything? Tools / equipment, wet / slippery surfaces, poor housekeeping, uneven surfaces
5	Can I be struck by a moving object? Moving vehicles, projectiles, moving machinery
6	Can I come into contact with or be exposed to something that may harm me? Electricity, pressure air / water / hydraulic, noise, chemical, gravity, thermal, mechanical, radiation. Have I checked plans to see where underground services are?
7	Does anything need isolation and test for dead? Electricity, water, hydraulic, air pressure, battery
8	Can something fall on me or can I cause something to fall onto someone else? Falling tools / equipment, can I drop tools / equipment, people working above or below me.
9	Can I be injured by nearby activities or can my activities injure others nearby? People working above or below me, dust / fumes, noise, sparks, projectiles
10	Could there be any uncontrolled movement, like ground movement, machine movement? Vehicle roll / run away, trench collapse, ground slumping
11	Can I spill or pollute something? Oils spill, into waterways / ground
12	Can weather conditions, work environment or poor lighting affect job safety? Extreme temperature, high winds / rain, fog, storm
13	Do I need a permit? Traffic, excavation, confined space, permit to dig
14	Will I be working below, on or near roadways or rail lines? (if yes traffic / rail permit will be required) Work at heights – ground / trenches / roofs

Equipment Pre-start

Registration & call sign		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		No:			
Make																Date:			
Type / Capacity																From: ____ / ____ / ____ To: ____ / ____ / ____			
Operator to print name underneath day →																			
Do not operate – notify supervisor		o/k	repair	o/k	repair	o/k	repair	o/k	repair	o/k	repair	o/k	repair	o/k	repair	Comments / Faults / Damage		Repair Completed	
Operate only after consultation with supervisor and/or maintenance personnel																			
Check Daily:																			
1	Brakes (inc. park brake)																		
2	Steering and components (excessive movement in steering wheel)																		
3	Seatbelts (check for excessive play, retraction)																		
4	Tyres, rims, studs and wheel nuts tight, wheel nut indicators, wheel chocks																		
5	Reverse alarm working																		
6	Engine oil level (also check for any leaks)																		
7	Water / coolant level																		
8	Radio communications (check if fully operational)																		
9	Gauges, warning lights, controls and switches																		
10	Lights / indicators / reverse alarm / beacons – all working?																		
11	Site compliance approval																		
12	Cabin cleanliness (items restrained)																		
13	Guards, doors, locks & latches																		
14	Rear vision mirrors and frames																		
Check Weekly:																			
15	Fire extinguishers (6 mthly) / first aid kits (in date, any leaks?)																		
16	Windscreens / wipers (check for damage, check wiper operation)																		
17	Air-conditioner / fan / heater operation																		
18	Instruction and safety decals, service sticker. Safety – hi-vis stripe, number, flag																		
19	Vehicle loading crane as per crane log book																		
20	Panel work (any dents, scuffs, missing trims), tray, bodywork drop sides, Steps, handholds																		
21	Check tyre pressure																		
22	Equip attachments (eg. rock hammer, stump grinder, forks, buckets)																		
Operator to sign (initial) daily →																Supervisor (name):			
Hour / kilometre reading																Supervisor (signature):			
Next service hour/kilometre reading																Supervisor to sign above on a weekly basis.			

Toolbox Meeting Minutes

Job Name: (and # if relevant)		Date:	
Location:		Shift:	
Chaired by:		Signature:	

Discussions and recommendations: (note: you must discuss topics under each heading)

Action or Discussion	Person responsible for action	Status (advise if completed or still open)
General Business		
Safety Accidents/Incidents/Hazards (eg. discuss incidents that have occurred in your area/site, any relevant safety alerts, our safety performance etc)		
Safety (eg. are personal risk assessment being completed [Take 5], is PPE being worn, any site related issues, are incident reports being completed, any concerns with particular jobs, working in sun / around dust / other conditions, isolations)		
Scope of Work (eg. general overview and major activities, supervisors direction)		
Environment (eg. any oil/fuel spills requiring clean up, recycling issues, are bunded areas in good condition)		
Quality (eg. are all people using correct checklist/inspection forms – are supervisors filing all job information in the job box?)		
Initiatives / Customer Service (eg. discuss any new initiatives or any issues with interactions with clients)		

All personnel attending meeting must sign the following page.

Job Name: <i>(and # if relevant)</i>		Date:	
Location:		Shift:	
Chaired by:		Signature:	

1. Name: Signature:
2. Name: Signature:
3. Name: Signature:
4. Name: Signature:
5. Name: Signature:
6. Name: Signature:
7. Name: Signature:
8. Name: Signature:
9. Name: Signature:
10. Name: Signature:
11. Name: Signature:
12. Name: Signature:
13. Name: Signature:
14. Name: Signature:
15. Name: Signature:
16. Name: Signature:
17. Name: Signature:
18. Name: Signature:
19. Name: Signature:
20. Name: Signature:

Distribution: Copies must go to: site/area notice board and the site job box.

Supervisor name: Signature:

Safe Work Method Statement

SECTION 1: Overview

SWMS title:	Emergency response	SWMS No.:	SWMS 0016
Description of task/job/activity:	Planning for an emergency response	Revision No: (refer to section 8)	0 ☒ 1 ☐ 2 ☐
Project / Job name:		Project / Job address or location:	
Note: SWMS to be used with: Toolbox Meeting Minutes; Take 5, Equipment pre-start, SWMS Plan & Mobilise, SWMS Emergency Response. These are available free from: www.proceduresonline.com.au			Date: (Review 12 mthly)
Scope	This SWMS applies to all employees and contractors engaged in work activities referred to in this SWMS regardless of location.		

Your business details:

Business name:		Company contact name:		Address:	
Contact number:		Company contact position:			
Supervisor name:		Supervisor contact number:		ACN / ABN:	

Principal Contractor Details: (tick please) →

Applicable: (if applicable please complete below)		Not applicable:	
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Business name:		Address:	
Site supervisor name:		Site supervisor number:	
		Signature:	

SECTION 2: Task/activity

Work/worker is in, on, or near the following: (tick relevant). *Note: all of these activities are defined as high risk tasks and/or activities, except the first two marked with *.*

☒	* general - as directed by the PCBU / Managers / Supervisor	moving or using powered mobile plant at the workplace	to enter a trench or shaft more / deeper than 1.5 metres deep
☒	* general - as directed by the Principal Contractor	tilt-up and precast concrete / construction work	working on or near a pressurised gas distribution mains and consumer piping
☐	removal or disturbance of asbestos	structural alterations that require temporary support to prevent collapse	work in an area where there are artificial extremes of temperature
☐	demolition, decommissioning, dismantling work	in a tunnel	working in, over or adjacent to water / liquid where there is a risk of drowning
☐	demolition of a load bearing part of structure	at heights more than two metres	working on a telecommunications tower
☐	construction and commissioning	using a hazardous substance / chemical	using explosives

conversion, refurbishment and fitting out	work near an electrical installation or services	diving work
alteration and renovation	in or near a confined space	maintenance and repairs
the demolition of any part of a structure that is likely to affect its physical integrity	work in an area that may have a contaminated or flammable atmosphere	working on or near a chemical, fuel or refrigerant line
working on, or adjacent to, a road or railway or shipping lane or other traffic corridor that is in use by traffic other than pedestrians		

SECTION 3: References. Legislation by State / Territory (list relevant legislation you need to adhere to, eg: WH&S Reg 2011 S454 (2)) / Australian Stds

References:

Further references: Consult relevant Codes of Practice (COP) / Compliance Codes

The following is a list of known Codes of Practice (COP) / Compliance Codes in Australia. Not all Codes of Practice pertain to every state – verify that the relevant Codes of Practice / Compliance Codes apply to your state. If none are available for your state, consult other states Codes of Practice / Compliance Codes. Tick the relevant Codes of Practice / Compliance Codes that apply to the work you are performing.

Queensland:

Abrasive Blasting COP 2013	Abrasive Blasting COP 2013	Cash in Transit COP 2011	Children and Young Workers COP 2006
Concrete Pumping COP 2005	Confined Spaces COP 2011	Concrete Pumping COP 2005	Demolition Work COP 2013
Excavation Work COP 2013	First Aid COP 2004	Forest Harvesting COP 2007	Formwork COP 2006
Foundry COP 2004	How to Manage Work Health and Safety Risks COP 2011	How to Safely Remove Asbestos COP 2011	Hazardous Manual Tasks COP 2011
How to Manage and Control Asbestos in the Workplace COP 2011	Horse Riding Schools, Trail Riding Establishments and Horse Hiring Establishments COP 2002	Managing Noise and Preventing Hearing Loss at Work COP 2011	Managing Risks of Hazardous Chemicals in the Workplace COP 2013
Labelling of Workplace Hazardous Chemicals COP 2011	Mobile Crane COP 2006	Managing Risks of Plant in the Workplace COP 2013	Managing the Risk of Falls at Workplaces COP 2011
Manual Tasks Involving the Handling of People COP 2001	Managing the Work Environment and Facilities COP 2011	Occupational Diving Work COP 2005	Prevention of Workplace Harassment COP 2004
Preparation of Safety Data Sheets for Hazardous Chemicals COP 2011	Recreational Diving Rec Tech Diving + Snorkelling COP 2011	Rural Plant COP 2004	Sugar Mill Safety - Supplement to the Sugar Industry COP 2005
Safe Design of Structures COP 2013	Spray Painting and Powder Coating COP 2013	Safe Design of Structures COP 2013	Safe Design and Operation of Tractors COP 2005
Sugar Industry COP 2005	Steel Construction COP 2004	Scaffolding COP 2009	Tilt-up and Pre-cast Construction COP 2003
Cane Rail Safety - A supplement to the Sugar Industry COP 2005	Tower Crane COP 2006	Traffic Management for Construction or Maintenance Work COP 2008	Work Health and Safety Consultation, Co-operation and Co-ordination 2011
Welding Processes COP 2013			

South Australia:

Abrasive Blasting	Confined Spaces	Demolition Work	Excavation Work
First Aid in the Workplace	Hazardous Manual Tasks	How to Manage and Control Asbestos in the Workplace	How to Manage Work Health and Safety Risks
How to Safely Remove Asbestos			

Victoria: (Codes of Practice / Compliance Code)

Communicating occupational health and safety across languages*	How WorkSafe Applies The Law In Relation To Reasonably Practicable	Code of Practice for the Storage and Handling of Dangerous Goods	First Aid in the Workplace
Foundries	Confined Space	Removing Asbestos In Workplaces	Workplace Amenities and Work Environment
Demolition	Plant	Manual Handling	Lead (Code Of Practice No.26, 2000)
Hazardous Substances	Managing Asbestos in Workplaces		

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Western Australia:					
	Control and safe Use of Inorganic Lead		Concrete and masonry cutting and drilling - Code	Control of Scheduled Carcinogenic Substances	Code of Practice for High Pressure Water Jetting
	Ferry and charter boat industry - Code		First aid-workplace amenities-personal protective clothing-Code	Man overboard: prevention and response Code	Violence aggression and bullying at work - Code
	Working hours - Code		Working hours risk management guidelines - Code		
New South Wales:					
	Abrasive blasting		Amusement devices	Cranes	Confined spaces
	Construction work		Demolition work	Excavation work	First aid in the workplace
	Formwork and falsework		Hazardous manual tasks	How to manage and control asbestos in the workplace	How to manage work health and safety risks
	How to safely remove asbestos		Industrial lift trucks	Labelling of workplace hazardous chemicals	Managing electrical risks at the workplace
	Managing noise and preventing hearing loss at work		Managing risks of hazardous chemicals in the workplace	Managing risks of plant in the workplace	Managing the risk of falls at workplaces
	Managing the work environment and facilities		Managing risks of plant in rural workplaces	Managing risks in forestry operation	Managing cash in transit security risks
	Preventing falls in housing construction		Preparation of safety data sheets for hazardous chemicals	Safe design of structures	Safe design manufacture import and supply of plant
	Spray painting and powder coating		Scaffolds and scaffolding work	Tree trimming and removal work – crane access method	Traffic management in workplaces
	Working in the vicinity of overhead and underground electric lines		Work health and safety consultation, coordination and cooperation.	Welding	
ACT:					
	(Construction Work COP) Approval 2012		(Confined Spaces) COP 2011	(Demolition Work COP) Approval 2012	(Excavation Work COP) Approval 2012
	(First Aid in the Workplace COP) Approval 2012		(Formwork) COP 2011	(Hazardous Manual Tasks) COP 2011	(How to Manage Work Health and Safety Risks) COP 2011
	(Managing the Risk of Falls at Workplaces) COP 2011		(Managing the Work Environment and Facilities) COP 2011	(Welding Process COP) Approval 2012	(Preventing and Responding to Bullying) COP 2012 (No 1)
	(Managing Noise and Preventing Hearing Loss at Work) COP 2011		(Managing Risks of Plant in the Workplace COP) Approval 2012	(Managing Electrical Risks in the Workplace COP) Approval 2012	(Preventing Falls in Housing Construction COP) Approval 2011
	(Safe Design of Structures COP) Approval 2011		(Sexual Services Industry) COP 2011	(Transport and Delivery of Cash) COP 2011	(Work Health and Safety Consultation, Cooperation and Coordination) COP 2011
Northern Territory:					
	Confined Spaces		Construction Work	Control and Safe Use of Inorganic Lead at Work	First Aid in the Workplace
	Fatigue Management		Hazardous Manual Tasks	How to Manage and Control Asbestos in the Workplace	How to Manage Work Health and Safety Risks
	How to Safely Remove Asbestos		Labelling of Workplace Hazardous Chemicals	Managing Noise and Preventing Hearing Loss at Work	Managing the Risk of Falls at Workplaces
	Managing the Work Environment and Facilities		Preparation of Safety Data Sheets for Hazardous Chemicals	Preventing Falls in Housing Construction	Prevention of Falls in General Construction
	Precast, Tilt-up and Concrete Elements in Building Construction		Safe Transport of Radioactive Material (2008)	Work Health and Safety Consultation, Co-operation and Co-ordination	
Client specific procedures: (list here)					

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SECTION 4: A, B, C, D, E, F, G, H

A	Simultaneous work in the area:												
B	Work Environment												
	Day		Dry / clear		Hot /sunny / humid		Open water		Muddy / slippery		Rocky / uneven		Cold
	Night		Wet / raining		Low visibility (dust/fog)		Public access		Restricted work area		Near road/s		
C	Plant and equipment required: <i>(if you tick any of the boxes below then workers must be made aware of site requirements).</i> Note: equip must be certified, well maintained, have a current inspection and pre-start complete.												
	Power leads		Powered equipment		Working at heights		Scaffolds		Crane use		Explosive tools		Barricades
	Ladders		Air operated tools		Welding machine		Form work		Oxy/acetylene		Working over water		Elev. work platform
	Forklift		Manual handling		Structure Support		Power tools		Asbestos		Hand tools		
	Other: <i>(list)</i>												
D	Permits				Certification				Approval / Communication				
	Excavation / trench					Pressure system (design/register)					Dial before you dig		
	Lift plan / permit					Engineering					Rail corridor		
	Hot work					Scaffold					Traffic		
	Demolition					Electrical (AS 3000, AS 3012, AS 3760)					Access		
	Confined space					Other:					Demolition		
	Working at heights										Legal		
	Electricity authority – high voltage switching / access										Other:		
	Other:												
E	PPE required: <i>(if you tick any of the boxes below then workers must be made aware of site requirements)</i>												
☒	Eye protection	☐	Hearing protection	☐	Dust mask	☐	Respirator	☐	Face shield	☐	Welding	☐	Safety harness
													
	Safety glasses: ☒ Safety goggles: ☐		Ear muffs: ☐ Ear plugs: ☐		P1 type: ☐ P2 type: ☐ Other: ☐		Half face respirator: ☐ Full face respirator: ☐ SCBA: ☐ Other: ☐		Low impact: ☐ Medium impact: ☐ High impact: ☐		Welding mask: ☐ Welding apron: ☐ Welding gloves: ☐ Welding respirator: ☐		Full body: ☐ Confined space: ☐ Restraint: ☐

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☐ Head protection	☒ Protective clothing	☐ Hand protection	☒ Foot protection	☐ Hair protection	☐ Safety vest	☐ Other					
 Helmet: ☐ Wide brim hat: ☐ Cap lamp: ☐ Bump cap: ☐	 Long sleeves/pants: ☒ Coveralls: ☐ High vis clothing: ☐	 Rubber gloves: ☐ Cut resistant: ☐ Heat resistant: ☐ Anti-vibration: ☐ Other: ☐	 Steel capped: ☒ Ankle support: ☐ Rubber boots: ☐	 Hair net: ☐ Other: ☐	 Reflective: ☐ Non-reflective: ☐	Suncream: ☐ Self rescuer: ☐ Chain mesh: ☐ Life jacket: ☐ Other: _____					
F Training requirements: (work at heights, confined space, trade certificate etc)											
G Chemicals: Name all chemicals below and ensure all SDS's (Safety Data Sheets) are available (previously known as MSDS - Material Safety Data Sheet).											
			Hazardous		Dangerous		Schedule for monitoring		SDS		
			Yes No		Yes No		Yes No		Yes No		
Name:											
Name:											
Name:											
Name:											
H Emergency Response (refer to SWMS Emergency Response) Tick applicable											
Emergency Contact numbers (Note: Some sites will have own emergency contact numbers)					Police / Fire / Ambulance			000			
Poison Emergency					131126			Mobile (outside carrier coverage)			112
Site Emergency Rescue					Site Emergency Room						
Emergency Equipment											
Emergency Assembly Sign			Fire & First Aid Signage			Site Emergency notice board			Other signage		
Fire Extinguisher # ____			Other fire equipment			First Aid Kit # 1			Medical Trauma Kit type		
Spill Kit (Chemical/Oil/Fuel)			Rescue (Rope/Confined Space/Heights)			Other:					

SECTION 5: SWMS Procedure

Procedure: Complete the tasks, hazards, job steps, hierarchy of control, and risk score required to complete the activity.

Hierarchy of Control (HOC): list the highest HOC for the controls you have listed (eg. just one control is required). In order of highest to lowest: Eliminate (E), Substitute (S), Isolate (I), Engineering (En), Administrative (A) and Personal Protective Equipment (PPE). Also state if the control is a Post (P), used to mitigate an event. Post event control does not prevent the event from occurring, it will only lessen the impact (eg. fire extinguisher). **Risk score:** is based on all identified controls being in place and effective including the controls from sections A, B, C, D, E, F, G and H of this SWMS. Use the Risk Matrix (see last page) to get the score for this column. An example of how to write the risk score is: 2A Mod 16.

No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: have you considered the following: Injuries (crush, drop, trip, falls, sprains), environmental (soil contamination, fire), quality, equipment damage.</i>	Controls <i>Define the job step by step, and list how you reduce the hazards that you've identified.</i>	HOC <i>eg.: E, S, I, En, A, PPE. Or state P for Post mitigation</i>	Risk Score <i>eg.: 2A Mod 16</i>	Responsible Person
1.	Develop a site specific emergency response plan	People unfamiliar with site layout. Injuries due to inadequate response. Emergency response services contact details unknown. Emergency services unable to find location. Escalation of emergency situation.	- Keep the plan simple uncluttered, do not include information not required for effective emergency response. - Emergency response plan site map should include as a minimum: - Alarms points - building exits - fire extinguisher / fire hose reel locations - muster points - first aid station locations - escort point (where to meet emergency response teams). - Ensure there is a site attendance register that can be used in case of an evacuation to conduct a roll call (tool box talk sign on could double as site attendance). - Prominently noted on the site map should be: - a description of the location ie	P	2D Low 5	

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No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: have you considered the following: Injuries (crush, drop, trip, falls, sprains), environmental (soil contamination, fire), quality, equipment damage.</i>	Controls <i>Define the job step by step, and list how you reduce the hazards that you've identified.</i>	HOC <i>eg.: El, S, I, En, A, PPE. Or state P for Post mitigation</i>	Risk Score <i>eg.: 2A Mod 16</i>	Responsible Person
			the address or the GPS coordinates of the site and instructions on how to find the site; - o the emergency services contact numbers include site based services and off site services ambulance, fire, police, poisons hot line, local doctor or hospital; - o details of any escort point for example the nearest major road intersection, property gate or other land mark; - o site contact details (names and phone numbers of owner, managers, supervisors); and - o name of first aid officer/s. • Ensure emergency response map and SWMS is communicated to all on site through toolbox talks, site familiarisation, site induction and placed on permanent display. • Ensure personnel are trained in First Aid (at least one per shift), fire extinguish use (all), fire wardens (selected personnel). • Determine the level of emergency response required applicable to the nature of work, size, location, hazards at the workplace, worker and other persons on the site –			

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No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: have you considered the following: Injuries (crush, drop, trip, falls, sprains), environmental (soil contamination, fire), quality, equipment damage.</i>	Controls <i>Define the job step by step, and list how you reduce the hazards that you've identified.</i>	HOC <i>eg.: El, S, I, En, A, PPE. Or state P for Post mitigation</i>	Risk Score <i>eg.: 2A Mod 16</i>	Responsible Person
			consider: - o External "Police, Fire, Ambulance" - o On site emergency response "Rescue teams" - o First Aiders and Fire wardens and Security			
2.	Establish a muster point	People unaware of muster point location Muster point unmarked. Muster point sighted near hazards. Area cluttered with equipment or stores.	• Select an area away from any known hazards (gas tanks, fuel tanks, access ways). • The muster point should provide some shade, as people may be required to wait here for some time. • Install standard muster point signs. • Include location of muster point in site familiarisation. • Maintain this area, no equipment to be parked here, and no storage of items, keep area clear and mowed.	A	2D Low 5	
3.	Maintain emergency response readiness	Injuries due to inadequate response in case of emergency. Emergency escalates due to lack of adequate response.	• Emergency response plan needs to be reviewed periodically to check currency of contact names and numbers. • The exit routes and muster point needs to be inspected regularly to ensure they are clear. • Mock emergencies should be	A	2D Low 5	

Safe Work Method Statement

No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: have you considered the following: Injuries (crush, drop, trip, falls, sprains), environmental (soil contamination, fire), quality, equipment damage.</i>	Controls <i>Define the job step by step, and list how you reduce the hazards that you've identified.</i>	HOC <i>eg.: El, S, I, En, A, PPE. Or state P for Post mitigation</i>	Risk Score <i>eg.: 2A Mod 16</i>	Responsible Person
			conducted at regular intervals (at least 6 monthly): - o check with your local emergency response services as they are often willing to assist; - o learning's from the mock emergencies need to be fed back into your current plan and communicate both the good points and the failings to all the work force.			
4.	Action taken for fire	Injuries due to exposure to heat / fire. Loss of property. Fire spreading	• Raise the alarm • Immediately call "000" for Fire Service • If trained and safe to do so: - o Check for danger and if safe take action - o Evacuate the work area and surrounding areas (close doors / windows while leaving) - o Attempt to put fire out using the on site fire fighting equipment (hose reels, extinguishers) - o If risk of injury evacuate the area and wait for fire service to arrive - o Do not let anyone re-enter the area where the fire is located.	P	3C Mod 13	

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No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: have you considered the following: Injuries (crush, drop, trip, falls, sprains), environmental (soil contamination, fire), quality, equipment damage.</i>	Controls <i>Define the job step by step, and list how you reduce the hazards that you've identified.</i>	HOC <i>eg.: EI, S, I, En, A, PPE. Or state P for Post mitigation</i>	Risk Score <i>eg.: 2A Mod 16</i>	Responsible Person
5.	Action taken for personnel injury	Injuries due to exposure to danger. Injuries due to inadequate initial response (First Aid).	• Raise the alarm • Immediately call “000” for ambulance • If safe to do so: - o Check for danger and if safe take action - o Apply first aid - o If in danger move to a safer area including injured person. - o If risk of injury evacuate the area and wait for emergency services to arrive.	P	3C Mod 13	
6.	Action taken for environmental incidents	Injuries due to exposure to danger (fumes / substances / liquids / burns / fire). Environmental harm (short / long term)	• Raise the alarm • Immediately call “000” for Fire Service • If safe to do so: - o Check for danger and if safe take action - o Evacuate the work area and surrounding areas - o Attempt to contain the environmental incident like spills, leaks etc by: - o Turning off or stopping the leak - o Containing the leak / spill - o Clean up - o If risk of injury evacuate the area and wait for fire service to arrive - o Do not let anyone re-enter the	P	3C Mod 13	

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No.	Task Steps (describe the broad task steps)	Hazards – What can cause harm/damage? <i>Hint: have you considered the following: Injuries (crush, drop, trip, falls, sprains), environmental (soil contamination, fire), quality, equipment damage.</i>	Controls <i>Define the job step by step, and list how you reduce the hazards that you've identified.</i>	HOC <i>eg.: El, S, I, En, A, PPE. Or state P for Post mitigation</i>	Risk Score <i>eg.: 2A Mod 16</i>	Responsible Person
			area where the incident is located			
7.	Action taken for theft / property damage	Loss of valuable property (personal / company) Property Damage	• Raise the alarm • Notify your supervisor and or security • Call "000" for Police if deemed appropriate • If risk of injury evacuate the area and wait for Police to arrive	P	3D Mod 9	
8.	Action taken for acts of terrorism / violence	Personnel injury	• Raise the alarm • Immediately call "000" for Police • Notify your supervisor and or security • Immediately Evacuate the area • If inside or near buildings personnel consider locking themselves inside offices / buildings and hiding under desks and table. • Keeping clear / out of sight of windows • Never confront the offenders • Personnel safety is the highest priority	P	3D Mod 9	

SECTION 6: Responsibilities

Manager

- Ensure that hazards are identified and controls are implemented. For example:
 - o procedures are followed/understood,
 - o SWMS and Take 5 are followed/understood,
 - o personnel are trained and competent,
 - o equipment is fit for purpose and well maintained,
 - o there is competent supervision,
 - o workers have been consulted on any safety matters (via toolbox meetings, SWMS, Take 5, verbal instruction / communication)
- Ensure the work place is a safe place of work.
- SWMS are reviewed as set in the date section.
- Ensure that records are kept for two years (eg. completed SWMS must be kept for 2 years from the occurrence of the notifiable incident or from the end of the project).

Supervisor

- Ensure that hazards are identified and controls are implemented.
- Consult and develop SWMS with workers and use Take 5 prior to starting work.
- Have workers review and sign on SWMS.
- Ensure that SWMS is amended for identified additional hazards or incidents and communicate to workers prior to continuing work.
- Approve SWMS.
- Give a copy of the SWMS to the principal contractor if applicable.
- Ensure that workers follow the directions in SWMS and Take 5.
- Ensure SWMS is readily available on site for inspection or review.
- Give used or completed SWMS to the office for company records.
- Ensure workers are trained and competent and only operate equipment they are competent / ticketed for.
- Give lawful directions and safety instructions to workers.
- Consult with management and workers on safety matters (toolbox meetings, SWMS, Take 5, verbal instruction / communication).
- Complete workplace inspections and worker observations.
- Rectify unsafe conditions on the worksite.
- Counsel workers not working safely or not following SWMS.
- Report and investigate incidents immediately.
- Work safely and be fit for work.
- Supervisors must ensure any change in SWMS is communicated to workers and they monitor that the steps and controls are implemented and effective.
- SWMS is reviewed as set in the date section.

Worker (includes sub-contractors)

- Develop (assist), review and follow procedures, SWMS and Take 5.
- Complete work that they are trained and competent for.
- Only operate equipment they are competent / ticketed for.
- Follow lawful directions and safety instructions.
- Consult with management on safety matters (toolbox meetings, SWMS, Take 5, verbal instruction / communication).
- Stop work if unsafe, advise supervisor and help fix unsafe condition.
- Report any incidents immediately to the supervisor.
- Work safely and be fit for work.
- Ensure all changes in SWMS are reviewed and sign in the revision section of the SWMS.

SECTION 7: Acceptance and Sign off for SWMS (Revision 0)

We, the undersigned, confirm that we have been consulted regarding the above SMWS, that its content and responsibilities are clearly understood. We also confirm that our required competencies / tickets etc. to undertake this activity are current, we are competent to complete the work safely and without risk to our own health or the health and safety of others. We clearly understand that the responsibilities and controls in this SWMS must be applied as documented, otherwise work is to cease immediately, and we will ensure that the work area is made safe, as far as reasonably practicable.

Company	Sub-contractor (tick)	Name	Position / Qualification	Signature	Date	Time

I, the undersigned Supervisor, confirm that the workers have been engaged in the development and/or review of this SMWS. I have clearly communicated the safety expectations, responsibilities and controls of this SWMS to the workers. I understand my responsibilities listed in the SWMS and company appointed authorities. I have checked competencies / tickets (including inductions) provided and verify that they are applicable and current. I have checked that all tools and equipment are properly maintained and safe to use. I have issued all relevant permits and have ensured to the best of my ability that the work area is safe and that the work will not damage any property or injure any persons.

Supervisor name:		Supervisor signature:		Date:	
Qualifications:		Experience:			
Senior management name:		Signature:		Date:	
If approved by senior management via telephone, provide date and time of call:					

SECTION 8: Changes or additions to SWMS

Should the SWMS be altered, added to, or changed in any way it must be communicated to all Workers and acknowledged by all Workers. The relevant revision number box on page 1 of this SWMS must be ticked if revisions are made.

Revision 1: Change identified resulting from: <i>(please tick)</i>		Date:	Time:	Name:	Sign:	Name:	Sign:
	Scope of work	Change identified: <i>(provide details)</i>					
	Incident / Safety alert	.....					
	Risk review	.....					
	Review date	.....					
	Added hazards and controls	.....					
	Legislation change	.....					
	Weather change	.....					
	Instructions	Supervisor name:					
	Other:	Signature:					
Snr Mngt Approval (name):		Signature:					

Revision 2: Change identified resulting from: <i>(please tick)</i>		Date:	Time:	Name:	Sign:	Name:	Sign:
	Scope of work	Change identified: <i>(provide details)</i>					
	Incident / Safety alert	.....					
	Risk review	.....					
	Review date	.....					
	Added hazards and controls	.....					
	Legislation change	.....					
	Weather change	.....					
	Instructions	Supervisor name:					
	Other:	Signature:					
Snr Mngt Approval (name):		Signature:					

SECTION 9: Risk Matrix – use this to get your risk scores for Section 5

Step 1: Establish the Consequence (1-5)						
Consequences		Injury / Occupational Illness or Disease (How to Manage Work Health and Safety Risk - Code of Practice, Safety Work Australia 10 August 2011) The company must ensure levels of consequence and likelihood are relevant to the company's business risk)	Business Loss / Asset Damage	Reputation / Social/ Community	Legal and Regulatory / Contract	Environmental Impact (eg. hydrocarbon spills)
1	Insignif	Report only	<\$5k	Complaint / Single project or stakeholder	Minor non-compliance – internal report only	Negligible pollution
2	Minor	First Aid Treatment Injury/Illness – non-prescription medication / treatment that can be administrated by first aider.	<\$20k	Local public concern	Minor legal non-compliance / contractual issue	Minor pollution / nuisance
3	Moderate	Medical Treatment Injury/Illness – prescription / treatment that can <u>only</u> be administrated by registered doctor/nurse. Minor LTI <5 full day's work lost.	<\$50k	Regional public concern / Multiple stakeholders	Serious breach of law /investigation by authority / on the spot fine. Major breach of contract.	Noticeable pollution
4	Serious	Serious Lost Time Injury /Illness - Loss of 5 or more days work / admission to hospital / series injury under WHSA definition.	<\$100k	National public concern	Significant penalties / termination of contract	Significant environmental event
5	Major	Fatality (single or multiple fatalities)	>\$100k	International public attention	Law suits / prosecution / removal from suppliers list	Major environmental event / material environmental harm

Step 2: Establish the Likelihood (A – E)		
Description		Frequency examples (How to Manage Work Health and Safety Risk - Code of Practice (Safety Work Australia 10 August 2011)).
A	Certain to occur	Expected to occur in most circumstances (> 1 event / month)
B	Very likely	Will probably occur in most circumstances (2 to 1 events / year)
C	Possible	Might occur occasionally (1 event / 1 to 2 years)
D	Unlikely	Could happen at some time (1 event / 2 to 3 years)
E	Rare	May happen only in exceptional circumstances (>3-5 years)

Step 3: The Hierarchy of Risk Control Model			
Start at the top and only if you can't select controls from one section, move to the next one down. You may need to use a combination of control measures to achieve the second level of risk control. If a particular hazard can't be removed the risk associated with the hazard can never be eliminated.			
1	Elimination	Complete removal of the hazard.	Most effective ↓ Least effective
2	Substitution	Replacing the material or process with a less hazardous one.	
3	Isolation	Separate the hazard from people.	
4	Engineering	Guarding, ventilation, design, re-design etc.	
5	Administration	Providing controls such as training or procedures.	
6	PPE	Use of PPE when other controls are not practical.	
7	Post	Mitigation after an event (eg. fire extinguisher).	

Using the Matrix to determine the Risk Score					
Likelihood	Consequence				
	1	2	3	4	5
A Certain to occur	Low 11	Moderate 16	Moderate 20	High 23	High 25
B Very likely	Low 7	Low 12	Moderate 17	High 21	High 24
C Possible	Low 4	Low 8	Moderate 13	High 18	High 22
D Unlikely	Low 2	Low 5	Moderate 9	Moderate 14	High 19
E Rare	Low 1	Low 3	Low 6	Moderate 10	High 15
ALARP – As Low As Reasonably Practical					
Tolerable		Takes action to manage to ALARP		Intolerable (without specific senior mgmt. approval)	

Safe Work Method Statement

Emergency / Evacuation

Address / location:	<i>[include nearest major road intersection or landmark]</i>		GPS coordinates:	
Site contact name:		Site contact number:		
First aid officer name:		First aid officer number:		

Draw your work site here and use the symbols below to create an evacuation route.

	FIRE HOSE REEL		FIRE INDICATOR PANEL
	EXIT		PATH OF EXIT
	MANUAL CALL POINT		MAIN PATH
	EXTINGUISHER		ALTERNATE PATH
	FIRE BLANKET		SWITCH BOARD
	ASSEMBLY AREA		FIRST AID



In an emergency

- Removal of people from the immediate danger area**
Occupants and staff in the immediate danger area are to assemble a safe distance away from the fire and smoke. When the area has been evacuated all doors and windows should be closed to contain fire.
- Removal to a safe area**
If the severity of the smoke or fire warrants further evacuation, occupants should be moved through the nearest safe exit to the assembly area / muster point.
- Contact emergency services**
Ring 000 and advise situation.
- Roll call**
To be conducted as soon as possible to ensure all persons are accounted for. Report all missing persons to fire

