Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**
Resources Safety

Explosives: Surface transport, use and disposal audit – guide

Approved: 22 September 2016

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Introduction

The scope of the two 'explosives' audits covers the safety and security standards associated with the management of explosives, including surface storage, transport, use and disposal.

The two 'explosives' audit documents address overall management aspects as well as field operations at mine sites, and cover:

- Explosives: Surface storage and management
- Explosives: Surface transport, use and disposal

They are structured so that operators can select those aspects relevant to the size and complexity of their operations, and the activities undertaken.

Where the term "verify" is used in the guideline, it implies there is a regulatory requirement for compliance with the standard. Where the term "ensure" is used, there is no mandatory requirement for compliance but the standard sets out a recommended practice, which, if followed, should minimise the risk of incidents.

These audit documents do not cover the underground storage and use of explosives.

List of abbreviations

AEC 3 Australian Code for the Transport of Explosives by Road and Rail - 3rd edition
AEIGS Australian Explosives Industry Safety Group
AN Ammonium nitrate
ANE Ammonium nitrate emulsion
ANFO Ammonium nitrate fuel oil
AS Australian Standard
ER Dangerous Goods Safety (Explosives) Regulations 2007
EMP Explosives management plan
MSIA *Mines Safety and Inspection Act 1994*
MSIR Mines Safety and Inspection Regulations 1995
PIN Personal identification number
Reg Regulation (of the ER)
r. Regulation (of the MSIR)
s. Section (of the MSIA)
SDS Safety data sheets

1 Transport

Transport

Point	Standard	Guideline
1.1	There are suitably modified explosives vehicles designed to transport explosives on site.	**Intent:** To verify that there are suitably modified vehicles complying with Reg 110 of ER designed to transport explosives on a mine site. **Personnel:** Mine manager, shotfirer etc. **Method:** Check the usage of the vehicles and where they are only used on a mine site that they are suitably modified for that purpose.
1.2	There are suitably modified explosives vehicles designed to transport explosives on site and public roads.	**Intent:** To verify that where the vehicles are used to transport explosives on a public road that they comply with AEC 3. (Reg 104 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Check the usage of the explosives vehicles and where used on a public road ensure that they comply with AEC 3. It may be necessary for these vehicles to be licensed (explosives transport licence).
1.3	The explosives vehicles are fitted with lockable wooden boxes to transport the explosives.	**Intent:** To verify the explosives vehicles are fitted with lockable wooden receptacles. (Reg 110 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Check there are lockable wooden receptacles fitted to the explosives vehicles. Check the condition of the boxes and that they can seal properly.

1.4	The explosives vehicles are correctly placarded.	**Intent:** To verify the explosives vehicles are placarded with a class 1 diamond (250 mm square) front and rear and the word “EXPLOSIVES” (150 mm high red capital lettering) on all four sides of the vehicle. (Reg 110 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Check the placarding on the explosives vehicle to ensure that it is correct and its condition for legibility. When not transporting explosives on public roads, the signs must be reversed or concealed.
1.5	The explosives vehicle is fitted with a suitable fire extinguisher.	**Intent:** To verify that the explosives vehicle is fitted with a 30 B rated dry chemical powder fire extinguisher. (Reg 110 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Check that the explosives vehicle is fitted with a suitable fire extinguisher, that it is properly mounted, easy to access and has been serviced within the past 6 months.
1.6	Where the explosives vehicle is used to transport incompatible explosives (detonators and blasting explosives) that it is fitted with an appropriate blast barrier segregating the two.	**Intent:** To verify the explosives vehicle is fitted with a blast barrier when carrying mixed loads of explosives. (Reg 110 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Check for the specifications of the blast barrier. Also check that the detonators are transported on the correct side of the barrier (the detonators must be on the side away from the steel plate). The compartments should be labelled as to what product can be transported in each compartment.
1.7	There are systems in place to ensure that only authorised secure nominees drive the explosives vehicle.	**Intent:** To verify that only authorised secure nominees transport the explosives. (Regs 46 and 47 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Verify what security is placed on the explosives vehicle’s keys and who has access to the keys.

1.8	The secure nominees authorised to transport the explosives are adequately trained for the task.	**Intent:** To verify that those who transport explosives are adequately trained for the task. (Reg 23(2) of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Sight the training procedures for the task, supporting documentation and the training matrix.
1.9	The explosives vehicles are adequately serviced and well maintained.	**Intent:** To verify that the explosives vehicles are well serviced and maintained and in a road worthy condition. (Reg 110 of ER) **Personnel:** Mine manager, shotfirer etc. **Method:** Determine what servicing program is in place, servicing is done in accordance with manufacturer's requirements, pre-start checks conducted on the vehicles.
1.10	There are systems in place to prevent explosives vehicles loaded with explosives from being left unattended (e.g. at crib rooms, magazine compounds, blast sites, etc.).	**Intent:** To ensure that when explosives are on-board an explosives vehicle that it is not left unattended for security (and safety) reasons. **Personnel:** Mine manager, shotfirer etc. **Method:** Sight training procedures, policies stating that explosives vehicles loaded with explosives are not to be left unattended.
1.11	Adequate security is provided for the keys of the explosives vehicles.	**Intent:** To ensure that adequate security is provided for the keys of the explosives vehicles. **Personnel:** Mine manager, shotfirer etc. **Method:** Check the systems in place for keeping the keys of the explosives vehicle secure.

2 Records

Records

Point	Standard	Guideline
2.1	Blasts are planned and designed to ensure required blast results e.g. good fragmentation, displacement of muck pile etc.	**Intent:** To verify that blast parameters such as burden, spacing, maximum instantaneous charge, and stemming requirements are predetermined and documented. (Reg 129 of ER). **Personnel:** Blasting engineer, pit planning engineer etc. **Method:** Interview persons responsible for blast planning and view a sample of blast records.
2.2	A blast plan is prepared prior to each blast.	**Intent:** To verify that a blast plan is prepared and documented prior to each blast (Reg 129 of ER). **Personnel:** Blasting engineer, shotfirer, mine manager, drill and blast contractor, etc. **Method:** Interview persons responsible for blast planning and view a sample of blast records.
2.3	Blast plans comply with AS 2187.2 Appendix A section A2	**Intent:** To verify that blast plans comply with AS 2187.2 Appendix A as required by Reg 130 of ER. **Personnel:** Blasting engineer, shotfirer, mine manager drill and blast contractor, etc. **Method:** Interview persons responsible for blast planning and view a sample of blast management plans.
2.4	Drilling patterns are laid out in accordance with the design.	**Intent:** To ensure that blast patterns are marked out in accordance with the design. **Personnel:** Blasting engineer, surveyors and drilling crews. **Method:** View a sample of blast records and plans. Inspect current shots in progress to observe the pattern layout. Interview the persons responsible for marking up the pattern.

2.5	Survey records of blast are kept.	**Intent:** To ensure that the limits of shots in 3 dimensions are determined pre and post blast. **Personnel:** Surveyors and blast engineer etc. **Method:** Inspect the blast records that are kept including the survey plans.
2.6	Records of every blast are kept including key blasting parameters.	**Intent:** To verify that records of shots are detailed and kept for a period of at least 2 years (Reg 134 of ER). **Personnel:** Surveyors and blast engineer etc. **Method:** Inspect the blast records that are kept.
2.7	There is a system in place to assess and deal with dangers from fly rock to any person, property and public property	**Intent:** To verify compliance with MSIR 8.30. **Personnel:** Quarry Manager and blast engineer etc. **Method:** View the procedures and blast records that are kept, gauge compliance to procedures by quizzing applicable personnel.
2.8	Any dangerous goods incident that involves an explosive such as fly rock causing damage to property or injuries to personnel, undetected misfires in broken rock, etc. are reported to the department.	**Intent:** To verify that records of blasting related incidents are detailed and reported to the department (Reg 44 of ER). **Personnel:** Surveyors and blast engineer etc. **Method:** Inspect the blast records that are kept and quiz what types of incidents are reported to the department.
2.9	Where air blast overpressure or ground vibration could be a problem, records are kept including complaints.	**Intent:** To verify that records of blasting and complaints are detailed. (Reg 132 of ER). **Personnel:** Surveyors and blast engineer etc. **Method:** Inspect the records that are kept and question what monitoring equipment is used.

3 Drilling precautions

Drilling precautions

Point	Standard	Guideline
3.1	Drilling is not carried out on a face or bench until it has been checked for misfires.	**Intent:** To verify compliance with MSIR 8.22.1 **Personnel:** Drilling personnel, blasting engineers, Mine Foreman. **Method:** Interview required personnel, inspect current drilling and view procedures.
3.2	Drilling is not carried out in a quarry operation where a portion of the hole is closer than 6 metres to a hole containing explosives except for clearing a misfire as per the written instructions of the quarry manager.	**Intent:** To verify compliance with MSIR 8.22. **Personnel:** Drilling personnel, blasting engineers, Mine Foreman. **Method:** Interview drilling personnel, inspect current drilling and view procedures.

4 Charging operations

Charging operations

Point	Standard	Guideline
4.1	Before charging commences personnel and machinery not required for charging operations are removed from the area.	**Intent:** To verify that during charging operations only essential personnel and machinery are present. (Reg 132 of ER). **Personnel:** Production personnel in general. **Method:** Interview general mine personnel. View written procedures.
4.2	Warning signs that charging operations are in progress are displayed and the area is clearly delineated and demarcated to prevent unauthorised personnel from entering the blast site.	**Intent:** To verify that warning signs and barriers are used during charging operations. (Reg 132 of ER). **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.

4.3	That a minimum of two people are involved in the charging process.	**Intent:** To ensure that at least 2 people are involved during the charging operations, one of which is security cleared. **Personnel:** Mine manager, drill and blast superintendent, charging personnel in general. **Method:** Interview appropriate personnel. View written procedures, check what systems are in place and inspect charging in progress.
4.4	Cartridges of explosives are not forced into holes.	**Intent:** To verify compliance with MSIR 8.24.2(b). **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.5	Only those holes that are intended to be blasted (in that blast) are charged.	**Intent:** To verify compliance with MSIR 8.24.4. **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.6	Polythene lay flat blasthole liners are not used where loose ANFO is poured on top of a primer.	**Intent:** To ensure safe charging procedures are used when using polythene liners. **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.7	The depth and condition of blastholes are checked prior to charging.	**Intent:** To verify that drill holes are checked prior to charging for correct depth, blockages, temperature etc. as applicable. (Reg 132 of ER). **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.

4.8	No persons smoke while handling explosives or charging.	**Intent:** To verify compliance with MSIR 8.13. **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.9	Any blasthole that is hot from previous blasting, drilling or any other cause is not charged until sufficiently cool.	**Intent:** To verify compliance with MSIR 8.54 & 8.55. **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures.
4.10	A sufficient depth of each blasthole is left uncharged to permit adequate stemming.	**Intent:** To verify that adequate stemming is used when charging holes. (Reg 132 of ER). **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.11	Care is taken in charging and stemming operations to avoid damaging down lines or allowing them to be pulled down in hole.	**Intent:** To verify that good charging practices are used. (Reg 132 of ER). **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.12	Stemming is completed as soon as possible after charging.	**Intent:** To verify that good charging practices are used. (Reg 132 of ER). **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.

4.13	Explosive in cartridge form is not dropped into any blasthole.	**Intent:** To verify compliance with MSIR 8.24. **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect charging in progress.
4.14	No rockdrill, shovel, machine or vehicle (except the vehicle or machine used for charging operations) is operated within 6 metres from any hole containing a charge.	**Intent:** To verify compliance with MSIR 8.24. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures and inspect charging in progress.
4.15	Any charge in a designated blast which has not been fired or has not exploded is treated as misfire.	**Intent:** To verify compliance with MSIR 8.24. **Personnel:** Charging personnel in general. **Method:** Interview charging personnel. View written procedures and inspect misfire record book.
4.16	A secure nominee is present at all times during the charging operations.	**Intent:** To ensure adequate security is provided for the explosives (Reg 23, 46 and 47 of ER). **Personnel:** Charging personnel in general, mine manager. **Method:** Interview charging personnel. Check list of secure nominees. View written procedures.
4.17	The explosives loaded into the blast holes are reconciled with what is recorded on the blast plan.	**Intent:** To ensure all explosives are accounted for. (Reg 129 of ER). **Personnel:** Charging personnel in general, mine manager. **Method:** Interview charging personnel. View written procedures.

4.18	Blast holes that are slept for a period of time are stemmed and not tied in until they are to be fired.	**Intent:** To limit access to explosives, have minimal explosives on the surface and if a hole fires prematurely (i.e. lightning) that it does not affect the rest of the blast. **Personnel:** Charging personnel in general, mine manager. **Method:** Interview charging personnel. View written procedures.
4.19	Adequate security is provided for explosives that are slept for a period of time.	**Intent:** To verify adequate security is provided for the explosives. (Reg 132 of ER). **Personnel:** Charging personnel in general, mine manager. **Method:** Interview charging personnel. View written procedures.

5 Blast warning and guarding

Blast warning and guarding

Point	Standard	Guideline
5.1	The manager/ blast design team determines the size of blast exclusion zone. This is also to include out of the ordinary blasting such as secondary blasting.	**Intent:** To verify that blast exclusion zones used during blasting are planned for each blast. (Reg 132 of ER and AEISG code on Blast guarding in an open cut mining environment). **Personnel:** Quarry Manager/ blast design team. **Method:** Interview Quarry Manager/ blast design team. View written procedures and inspect records. Blast exclusion zone to be shown on the blast plan map.
5.2	The blast plan map shall show the blast exclusion zone and include details of where the blast guards and shotfirer are located.	**Intent:** To verify that a blast plan map shows the location of the blast exclusion zone and where the blast guards and shotfirer are to be located. Such a map is to be prepared prior to each blast. (Reg 132 of ER and AEISG code on Blast guarding in an open cut mining environment). **Personnel:** Quarry Manager/ blast design team. **Method:** Interview Quarry Manager/ blast design team. View blast plan map and inspect records. Blast exclusion zone to be shown on the map.
5.3	All persons in the vicinity of the blasting area are warned and moved to a safe place before the shot is fired.	**Intent:** To verify compliance with MSIR 8.25 and 8.26. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures.
5.4	There are procedures in place for clearing the blast exclusion zone prior to the blast.	**Intent:** To verify compliance with MSIR 8.25 and 8.26 and AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures.

5.5	All means of entry to the place of blasting are securely guarded against entry by persons, or warning notices are erected to prevent entry.	**Intent:** To verify compliance with MSIR 8.25 and 8.26 and AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures.
5.6	Blast guards and blast controllers are competent in their roles.	**Intent:** To verify compliance with MSIR 8.25 and 8.26 and AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel.
5.7	There is a register of personnel who are authorised in the roles of blast guard and blast controller.	**Intent:** To ensure there is a register of personnel for the roles of blast guard and blast controller. (See AEISG code on Blast guarding in an open cut mining environment) **Personnel:** Mine manager, blast guards and blast controllers. **Method:** Interview mine personnel. View register.
5.8	There is a list of equipment available for establishing the blast exclusion zone.	**Intent:** To ensure there is a list of equipment used to clear the blast exclusion zone exists in accordance with AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Mine manager, blast guards, blast controllers. **Method:** Interview mine manager, blast guards and blast controllers. View written list.
5.9	An audible warning device (a modulated frequency siren) is installed and used at the mine site.	**Intent:** To verify compliance with MSIR 8.25 and 8.26. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures.

5.10	Notices are erected warning that the noise from the audible warning device is a signal that blasting is taking place.	**Intent:** To verify compliance with MSIR 8.25 and 8.26. **Personnel:** Firing personnel in general. **Method:** Interview mine personnel. View notices and written procedures.
5.11	All persons on a mine are notified at least 24 hours prior to the scheduled blast of the blasting time.	**Intent:** To ensure compliance with AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Site supervisor and mine personnel. **Method:** Interview site supervisor and mine personnel. View notices and procedures.

6 Firing times and procedures

Firing times and procedures

Point	Standard	Guideline
6.1	Firing times are authorised by the Registered Manager.	**Intent:** To verify compliance with MSIR 8.28. **Personnel:** Registered Manager. **Method:** Determine the standard firing times set by the manager.
6.2	Blasting does not occur at night except for blasting to remove obstructions in crushers, making workings safe, or firing misfired holes if permission is received from the Quarry Manager or his representative in every case.	**Intent:** To verify compliance with MSIR 8.28. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures and the blasting records.
6.3	The manager determines blasting times and any other controls necessary where blasting is likely to constitute a public nuisance in a built up area.	**Intent:** To verify compliance with MSIR 8.28. **Personnel:** Mine personnel in general. **Method:** Interview mine personnel. View written procedures and the blasting records.
6.4	There is a procedure for firing the shot.	**Intent:** To verify there is a procedure for firing the shot. (Reg 132 of ER) **Personnel:** Mine manager, shotfirer. **Method:** Interview mine manager and shotfirer. View written procedures for blasting.
6.5	A pre-blast meeting is held between the shotfirer, blast guards and the blast controller.	**Intent:** To verify a pre-blast meeting is held to discuss the blast in compliance with AEISG code on Blast guarding in an open cut mining environment. (Reg 132 of ER) **Personnel:** Shotfirer, blast guards, blast controller. **Method:** Interview shotfirer, blast guards and blast controllers. View written procedures for blasting.

6.6	The shotfirer cannot proceed with the blast without the consent of the blast controller.	**Intent:** To verify there are procedures in place where the shotfirer cannot proceed with a blast until given the consent from the blast controller in compliance with AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Shotfirer, blast controller. **Method:** Interview shotfirer and blast controllers. View written procedures for blasting.
6.7	Personnel cannot re-enter the blast exclusion zone until the “All Clear” is given by the shotfirer.	**Intent:** To verify there are procedures in place where the blast exclusion zone remains cleared until the “All Clear” signal is given in compliance with AEISG code on Blast guarding in an open cut mining environment. **Personnel:** Shotfirer, blast controller. **Method:** Interview shotfirer and blast controllers. View written procedures for blasting.

7 Handling misfires

Handling misfires

Point	Standard	Guideline
7.1	There is a written procedure that provides a safe system of entry and inspection for misfires before resuming normal work in an area that has just been blasted.	**Intent:** To verify compliance with MSIR 8.42. **Personnel:** Firing personnel in general. **Method:** Interview mine personnel. View procedures.
7.2	There is a procedure in place for dealing with misfires.	**Intent:** To verify compliance with MSIR 8.42, 8.45 to 8.50 and Reg 132 of ER by complying with Section 10 of AS 2187.2. **Personnel:** Firing personnel in general. **Method:** Interview mine personnel. View procedures and records.
7.3	Inspections carried out for misfires and any actions taken as a result of misfires are recorded in the record book.	**Intent:** To verify compliance with MSIR 8.46.(3) **Personnel:** Quarry Manager. **Method:** Interview mine personnel. View written procedures and the misfire record book.
7.4	Misfires not detected when the "All Clear" is given are reported to the Chief Officer (for Dangerous Goods).	**Intent:** To verify that misfires not identified at the time when the “All Clear” is given are reported to the Chief Officer as a reportable situation under Reg 44 of the ER (as it is a dangerous goods incident). **Personnel:** Quarry Manager, mine manager. **Method:** Interview mine personnel. View written procedures and the misfire record book and check that the incident has been reported.

8 Electric, electronic blasting and signal tube firing

Electric, electronic blasting and signal tube firing

Point	Standard	Guideline

8.1	Only suitable exploders complying with AS2187.2 are used when firing electrically or electronically.	**Intent:** To verify that only suitable exploders are in use on the site as required by MSIR 8.34.2. **Personnel:** Firing personnel in general. **Method:** Interview firing personnel. View equipment used.
8.2	A system is in place that ensures that exploders are tested and maintained in good working order.	**Intent:** To verify that exploders are tested and maintained as required by MSIR 8.32. **Personnel:** Blast engineer and maintenance personnel. **Method:** Interview personnel. View equipment used. View maintenance records.
8.3	Only suitable circuit testers complying with AS2187.2 are used when firing electrically or electronically.	**Intent:** To verify that only suitable circuit testers are used in compliance with MSIR 8.33.1 **Personnel:** Blast engineer and maintenance personnel. **Method:** Interview personnel. View equipment used.
8.4	A system is in place that ensures that circuit testers are maintained in good and efficient condition.	**Intent:** To verify that circuit testers are tested and maintained as required by MSIR 8.32. **Personnel:** Blast engineer and maintenance personnel. **Method:** Interview personnel. View equipment used. View maintenance records.
8.5	There is a written procedure in place that provides a safe system of connection, testing and initiation.	**Intent:** To verify that the procedures in place for tying in, testing and initiation. (Reg 132 of ER) **Personnel:** Blast engineer and charging/firing personnel. **Method:** Interview personnel. View procedures.

9 External electrical hazards

External electrical hazards

Point	Standard	Guideline
9.1	There is a system in place for the ceasing of charging and firing and withdrawal of personnel in the event of a threat from an electrical storm.	**Intent:** To verify compliance with MSIR 8.38. **Personnel:** Blast engineer and charging/firing personnel. **Method:** Interview personnel. View procedures. View what detection equipment is available (if any) and how the approach of storms is communicated to the blast crew.
9.2	There is a system in place to eliminate hazards caused by premature initiation of detonators by electro-magnetic radiation, static electricity or any other electrical apparatus.	**Intent:** To verify that precautions are taken to prevent blasting mishaps associated with radio and static electricity etc. (Reg 132 of ER) **Personnel:** Blast engineer and charging/firing personnel etc. **Method:** View the procedures and risk assessments.

10 Blasting in reactive ground

Blasting in reactive ground

Point	Standard	Guideline
10.1	The procedures used for charging and firing in oxidising or reactive ground and the precautions taken are in accordance with the manufacturer's or supplier's recommendations.	**Intent:** To verify that there is a procedure in place that covers the use of explosives in reactive ground in compliance with MSIR 8.55 and AEISG code on Elevated temperature and reactive ground. **Personnel:** Quarry Manager, blast engineer etc. **Method:** Interview personnel. View procedures.
10.2	Tests are conducted on the reactive ground to determine the level of reactivity in accordance with AEISG code on Elevated temperature and reactive ground.	**Intent:** To verify that tests have been conducted to determine the type of explosives to be used in compliance with MISR 8.55 and in accordance with AEISG code of practice on Elevated temperature and reactive ground. **Personnel:** Quarry Manager, blast engineer etc. **Method:** Interview personnel. View procedures.

10.3	The District Inspector is notified of any blasting that is to be done in oxidising or reactive ground.	**Intent:** To verify that there is a procedure in place for informing the Inspectorate prior to the use of explosives in reactive ground in compliance with MSIR 8.55. **Personnel:** Quarry Manager, blast engineer. **Method:** Interview personnel. View procedures.

11 Disposal

Disposal

Point	Standard	Guideline
11.1	There is a procedure for the disposal of old or damaged explosives.	**Intent:** To verify that there is a procedure in place to deal with old or damaged explosives. (Reg 132 of ER) **Personnel:** Manager, shotfirer and production personnel. **Method:** Obtain copies of procedures and interview relevant personnel.
11.2	The procedure for disposing explosives complies with AS 2187.2.	**Intent:** To verify the procedure for disposing explosives complies with AS 2187.2. (Reg 132 of ER) **Personnel:** Manager and shotfirer. **Method:** Review the procedures for disposal of explosives.