# Explosives: Surface transport, use and disposal audit Site: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Date conducted:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| 1 Transport |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 1.1 | There are suitably modified explosives vehicles designed to transport explosives on site. |  |  |
| 1.2 | There are suitably modified explosives vehicles designed to transport explosives on site and public roads. |  |  |
| 1.3 | The explosives vehicles are fitted with lockable wooden boxes to transport the explosives. |  |  |
| 1.4 | The explosives vehicles are correctly placarded. |  |  |
| 1.5 | The explosives vehicle is fitted with a suitable fire extinguisher. |  |  |
| 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. |  |  |
| 1.7 | There are systems in place to ensure that only authorised secure nominees drive the explosives vehicle. |  |  |
| 1.8 | The secure nominees authorised to transport the explosives are adequately trained for the task. |  |  |
| 1.9 | The explosives vehicles are adequately serviced and well maintained. |  |  |
| 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.). |  |  |
| 1.11 | Adequate security is provided for the keys of the explosives vehicles. |  |  |

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| 2 Records |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 2.1 | Blasts are planned and designed to ensure required blast results e.g. good fragmentation, displacement of muck pile etc. |  |  |
| 2.2 | A blast plan is prepared prior to each blast. |  |  |
| 2.3 | Blast plans comply with AS 2187.2 Appendix A section A2 |  |  |
| 2.4 | Drilling patterns are laid out in accordance with the design. |  |  |
| 2.5 | Survey records of blast are kept. |  |  |
| 2.6 | Records of every blast are kept including key blasting parameters. |  |  |
| 2.7 | There is a system in place to assess and deal with dangers from fly rock to any person, property and public property |  |  |
| 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. |  |  |
| 2.9 | Where air blast overpressure or ground vibration could be a problem, records are kept including complaints. |  |  |

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| 3 Drilling precautions |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 3.1 | Drilling is not carried out on a face or bench until it has been checked for misfires. |  |  |
| 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. |  |  |

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| 4 Charging operations |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 4.1 | Before charging commences personnel and machinery not required for charging operations are removed from the area. |  |  |
| 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. |  |  |
| 4.3 | That a minimum of two people are involved in the charging process. |  |  |
| 4.4 | Cartridges of explosives are not forced into holes. |  |  |
| 4.5 | Only those holes that are intended to be blasted (in that blast) are charged. |  |  |
| 4.6 | Polythene lay flat blasthole liners are not used where loose ANFO is poured on top of a primer. |  |  |
| 4.7 | The depth and condition of blastholes are checked prior to charging. |  |  |
| 4.8 | No persons smoke while handling explosives or charging. |  |  |
| 4.9 | Any blasthole that is hot from previous blasting, drilling or any other cause is not charged until sufficiently cool. |  |  |
| 4.10 | A sufficient depth of each blasthole is left uncharged to permit adequate stemming. |  |  |
| 4.11 | Care is taken in charging and stemming operations to avoid damaging down lines or allowing them to be pulled down in hole. |  |  |
| 4.12 | Stemming is completed as soon as possible after charging. |  |  |
| 4.13 | Explosive in cartridge form is not dropped into any blasthole. |  |  |
| 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. |  |  |
| 4.15 | Any charge in a designated blast which has not been fired or has not exploded is treated as misfire. |  |  |
| 4.16 | A secure nominee is present at all times during the charging operations. |  |  |
| 4.17 | The explosives loaded into the blast holes are reconciled with what is recorded on the blast plan. |  |  |
| 4.18 | Blast holes that are slept for a period of time are stemmed and not tied in until they are to be fired. |  |  |
| 4.19 | Adequate security is provided for explosives that are slept for a period of time. |  |  |

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| 5 Blast warning and guarding |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 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. |  |  |
| 5.2 | The blast plan map shall show the blast exclusion zone and include details of where the blast guards and shotfirer are located. |  |  |
| 5.3 | All persons in the vicinity of the blasting area are warned and moved to a safe place before the shot is fired. |  |  |
| 5.4 | There are procedures in place for clearing the blast exclusion zone prior to the blast. |  |  |
| 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. |  |  |
| 5.6 | Blast guards and blast controllers are competent in their roles. |  |  |
| 5.7 | There is a register of personnel who are authorised in the roles of blast guard and blast controller. |  |  |
| 5.8 | There is a list of equipment available for establishing the blast exclusion zone. |  |  |
| 5.9 | An audible warning device (a modulated frequency siren) is installed and used at the mine site. |  |  |
| 5.10 | Notices are erected warning that the noise from the audible warning device is a signal that blasting is taking place. |  |  |
| 5.11 | All persons on a mine are notified at least 24 hours prior to the scheduled blast of the blasting time. |  |  |

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| 6 Firing times and procedures |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 6.1 | Firing times are authorised by the Registered 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. |  |  |
| 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. |  |  |
| 6.4 | There is a procedure for firing the shot. |  |  |
| 6.5 | A pre-blast meeting is held between the shotfirer, blast guards and the blast controller. |  |  |
| 6.6 | The shotfirer cannot proceed with the blast without the consent of the blast controller. |  |  |
| 6.7 | Personnel cannot re-enter the blast exclusion zone until the “All Clear” is given by the shotfirer. |  |  |

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| 7 Handling misfires |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 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. |  |  |
| 7.2 | There is a procedure in place for dealing with misfires. |  |  |
| 7.3 | Inspections carried out for misfires and any actions taken as a result of misfires are recorded in the record book. |  |  |
| 7.4 | Misfires not detected when the "All Clear" is given are reported to the Chief Officer (for Dangerous Goods). |  |  |

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| 8 Electric, electronic blasting and signal tube firing |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 8.1 | Only suitable exploders complying with AS2187.2 are used when firing electrically or electronically. |  |  |
| 8.2 | A system is in place that ensures that exploders are tested and maintained in good working order. |  |  |
| 8.3 | Only suitable circuit testers complying with AS2187.2 are used when firing electrically or electronically. |  |  |
| 8.4 | A system is in place that ensures that circuit testers are maintained in good and efficient condition. |  |  |
| 8.5 | There is a written procedure in place that provides a safe system of connection, testing and initiation. |  |  |

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| 9 External electrical hazards |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 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. |  |  |
| 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. |  |  |

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| 10 Blasting in reactive ground |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 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. |  |  |
| 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. |  |  |
| 10.3 | The District Inspector is notified of any blasting that is to be done in oxidising or reactive ground. |  |  |

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| 11 Disposal |
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| **Point** | **Standard** | **Standard met** | **Comments** |
| 11.1 | There is a procedure for the disposal of old or damaged explosives. |  |  |
| 11.2 | The procedure for disposing explosives complies with AS 2187.2. |  |  |

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