

**Surface Mining
Blasting, Guarding and Initiating
EKA WI. 1702.06**

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| Task Description: |
| Guarding for a Blast, Blast Initiation and Incomplete Initiation of an Explosive. |
| HSE Information / Safety Risks: |
| <ul style="list-style-type: none"> • No personnel will be within 750 meters of the blast and no equipment should be within 500 meters of the direct line of fire of a blast. • No caribou will be within 1000m of the blast • Premature detonation of Blast Holes • Unauthorized access into Blast Area. |

| Work Preparation: | |
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| Item | Task Description |
| 1 | The day before the blast is scheduled the Team leader will ensure that an announcement will electronically through email and on the TV monitors through-out the mine site and Blast sign updated. The information will read where and when a blast is to take place. |
| 2 | During a blast, if there is a problem such as a misfire or incomplete detonation the Blaster will inform the Team Leader immediately. |
| 3 | During the sweep, if caribou are found inside the blast zone (1000m), the Team Leader will notify the Environment Department and wait to blast until all wildlife has left the area. |
| 4 | Group JHA will be completed on the morning of blast between Team Leader and Blaster |

| Work Execution Steps: | |
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| Item | Task Description |
| 1 | All drilling and explosives loading will have been completed and all equipment moved off the pattern before the tying in of any blast holes begins. |
| 2 | The perimeter of the pattern will be adequately guarded while the surface detonating cord and delays are being prepared. |
| 3 | The Production Team Leader and the Blaster will conduct a formal written JHA on where to locate equipment for the blast and for designating the "safe area" for firing the shot. |

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| 4 | Two hours prior to the scheduled blasting time, the Team Leader will announce The Two Hour Warning via radio on the appropriate operations channel. The Team Leader will also advise the Ekati Airport of The Two Hour Warning. |
| 5 | Before every blast, the "Blaster" will check the blasting machine as per the manufactures' recommendations. |
| 6 | <p>Prior to the ten-minute warning, all guards will:</p> <ul style="list-style-type: none"> • Take up their assigned guard positions and ensure that no one enters the danger zone; and • Notify the team leader when they have completed their sweep and they in their guarding position • Hold their position until the Team Leader authorizes them to leave |
| 7 | Ten minutes prior to the scheduled blast time, the Team Leader will announce a ten-minute warning via radio on the appropriate operations channel. The Team Leader will also advise the Airport Technician of the ten-minute warning. |
| 8 | <p>At the end of two minutes, the Team Leader will:</p> <ul style="list-style-type: none"> • Sound the blast-warning siren for 3 short loud soundings • Notify the Blaster that he may take his shot. |
| 9 | Airport Technician will announce the two-minute warning on the aircraft radio channels. |
| 10 | Two minutes prior to the scheduled blast time, there will be a one minute blast siren and the Team Leader will announce, on the appropriate operations radio channels, a two-minute blast warning and radio silence. |
| 11 | <p>At the end of two minutes, the Team Leader will:</p> <ul style="list-style-type: none"> • Sound the blast-warning siren for 3 short loud soundings • Notify the Blaster that he may take his shot. |
| 12 | <p>The Blaster will</p> <ul style="list-style-type: none"> • The blaster will notify the Team Leader once the shot has fired and that he is entering the pit to inspect the blast. • The blaster will inspect the blast for complete detonation. • The blaster will inspect the blast area for blast gases to be safely dissipated. • The blaster will notify the Team Leader that the blast area is "All Clear" after determining the blast has completely detonated and the blast gases have safely dissipated. |

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| 13 | Team Leader will contact the Airport Technician on the operations radio channel and announce the "ALL CLEAR". "All guards will be authorized from their positions. Crews can return to work in the blast area and radio communications may resume". |
| 14 | The Team Leader will sound the blast siren for twenty seconds signalling the "All Clear". |
| | Incomplete Initiation of an Explosive |
| 1 | If the firing device is not working another one will be used in its place. No Ten-minute waiting time is needed in this situation. |
| 2 | If there is a problem such as a misfire or incomplete detonation the Blaster will inform the Team Leader immediately. |
| 3 | If an improper initiation or detonation of the blast occurs Team Leader will ensure that the Blaster waits 10 minutes before they proceed to inspect the cause. |
| 4 | The Blaster will disconnect the firing device from the blasting cap and ensure the leg wires are shorted before proceeding into the blast area to investigate any problems. |
| 5 | The guards must remain in their position unless otherwise directed by the Team Leader. |
| 6 | The Blaster will inform the Team Leader when he is ready to fire the blast again. |
| 7 | The Team Leader will then request from the airport if all air traffic is clear of the vicinity of the blast area. Only upon a positive response Team leader will inform the Blaster to fire when ready. |
| 8 | The Blaster will then inform over the radio that they are firing the blast. |
| 9 | Refer to Work Execution Steps 11, 12 and 13 |
| | General Radio Blast Announcements |
| | 2 Hour Warning Blast Time: <i>"Notice To All Personnel: This the 2 Hour warning to blast time in Misery Pit, I repeat this is the 2 hour warning to blast time in Misery Pit"</i> |
| | 10 Minute Warning Blast Time: Notice To All Personnel: This is the 10 minute warning to blast time in Misery Pit, I repeat this is the 10 minute Warning until Blast time in Misery Pit |
| | 2 Minute Warning Blast Time: 1 minute blast signal: <i>"Notice to all personnel: This is the 2 minute warning to blast time in Misery Pit, I repeat this is the 2 minute warning to blast time on Misery Pit. Radio silence is in effect and will remain in effect until the all clear has been given. I repeat this is the 2 minute warning until blast time in Misery Pit"</i> |

Documents and Records

| APPROVAL SIGNATURES EKA WI 1705.03 Version [2.0] | | | |
|--|-------------------------|--------------------|------------|
| REVIEWER | Role | SIGNATURE | Date |
| | Mining - Superintendent | <i>[Signature]</i> | June 14/17 |

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Surface Mining Senior

[Signature]

June 14/17.

Surface Mining TL