

	<b>QUORUM</b> MINING & RELINING SERVICES	
<b>HEALTH AND SAFETY MANAGEMENT</b>		<b>Revision No.</b> 0000
<b>LOCK OUT – TAG OUT PROCEDURE LOTTO</b>		<b>Document No.:</b> QMRS SWP 01  <b>Effective date:</b> August 2011

## LOCK OUT TAG OUT PROCEDURE “LOTTO”

### STATEMENT OF PROCEDURE:

The purpose of this procedure is to ensure the prevention of injuries from the unexpected energization, activation or release of hazardous energy during servicing or maintenance of machinery or equipment. This lockout/tagout program has been developed to establish procedures for de-energizing machines, equipment and processes to ensure work can be safely performed.

#### 1. Defenitions

**Affected Employee:** An employee who operates or uses a machine or equipment on which servicing or maintenance is being performed under lockout tagout or who works in an area where such work is being performed.

**Authorized Employee:** An employee authorized to implement lockout/tagout procedures on machines or equipment to perform maintenance or servicing work.

**De-energized:** Disconnected from all sources of energy and not containing residual or stored energy.

**Electrical Disconnect Switch:** A pull-type switch or circuit breaker which physically opens to disconnect the circuit.

**Energy Isolating Device:** A mechanical device that physically prevents the transmission or release of energy, to or from a machine or equipment. This device usually de-energizes the machine or equipment and allows a padlock to be placed on it. A *lockout device* is used where a padlock cannot be placed directly on the energy isolating device. Energy isolating devices include: manually operated disconnect switches, circuit breakers; line valve; block. **Note:** Push buttons, selection switches and other circuit control type devices are not considered energy isolating devices.

**Energy Source:** Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational or other energy.

**Hazardous Energy:** Energy sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational or other energy that, when released, can cause harm.



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**Isolation:** Ensuring all sources of hazardous energy for a piece of equipment or machinery are moved or controlled to prevent it from unexpected activation or energization.

**Lockout:** The placement of a lock on an energy isolating device or lockout device to physically neutralize all energies in a piece of equipment or machinery ensure the energy isolating device being controlled cannot be operated until the lockout device is removed.

**Lockout Device:** A device that can be placed on an energy isolating device and that allows a positive means, such as a lock, to be placed on it to controlling the energy isolating device.

**Servicing and/or Maintenance:** Activities such as constructing, installing, setting up, adjusting, inspecting, modifying and/or servicing machines. This includes activities such as lubrication, cleaning or unjamming of machines or equipment and making adjustments.

**Supervisor:** A person who has charge over a workplace or authority over a worker.

**Tagout:** The placement of a tagout device (warning tag) on an energy-isolating device to communicate the equipment must not be reenergized or operated until the tagout device is removed.

## 2. RESPONSIBILITIES

### Management shall:

- A. Ensure the elements of this procedure are followed by employees and outside contractors.
- B. Ensure employees are provided the training and equipment necessary to safely implement lockout, blockout, and tagout actions.
- C. Provide supervisors, authorized/qualified personnel, and affected personnel with training and guidelines on Lockout/Tagout procedures.
- D. Provide consultation to contractors to ensure compliance with the Lockout/Tagout Procedure.



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- E. Conduct periodic inspections of Lockout/Tagout activities at least annually to ensure the Lockout/Tagout Procedure is being followed, and certify the inspection has been performed. Where lockout is used, the inspection shall include a review between the inspector and each employee of their responsibilities under the procedure being inspected.

**Supervisors shall:**

- A. Ensure training is provided for all employees who perform job functions that may require Lockout/Tagout Procedures, and ensure that only properly trained employees engage in such activities.
- B. Maintain training and annual inspection records.
- C. Ensure employees are aware of potential hazards and necessary safety procedures prior to beginning a job that requires Lockout/Tagout Procedures.
- D. Assign individual locks and multiple-lock hasps to personnel, and ensure that no two padlocks are keyed the same.
- E. Ensure all employees under each work permit are accounted for prior to re-energizing locked-out equipment when multiple locks are used.
- F. Ensure contractors have been notified of this procedure and assist safety personnel with compliance.
- G. Identify equipment and processes requiring Lockout/Tagout Procedures.



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**Authorized/Qualified Employees shall:**

- A. Follow the instructions of this procedure when locking or implementing a Lockout/Tagout on machines or equipment in order to perform servicing or maintenance on that machine or equipment.
- B. Ensure they do not expose themselves to any potential hazardous energy source.
- C. Obtain and maintain appropriate types of Lockout/Tagout and lockout/tagout equipment.
- D. Attend training programs on the use and application of Lockout/Tagout and lockout/tagout procedures.
- E. Notify all affected personnel that a lockout of equipment is required and the reason for the lockout.

**Affected Personnel shall:**

- A. Ensure they do not expose themselves to any potential hazards associated with machinery servicing or repair.
- B. Not remove any lockout, blockout, or tagout device.
- C. Not attempt to energize (turn on) or operate any piece of machinery being repaired or serviced.

**CONTRACTOR REQUIREMENTS**

When a host employer arranges to have employees of a contractor perform work on host machinery, equipment, or systems, the contractor will be informed on the requirements of this Lockout/Tagout Procedure. Each contract employee is expected



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to follow this Lockout/Tagout Procedure when performing work requiring lockout, blockout, and tagout actions.

**The Host Employer shall:**

- A. Inform the contractor that maintenance or servicing of equipment and machinery requires compliance with this Lockout/Tagout Procedure.
- B. Apprise the contractor of hazardous energy sources identified through experience with the host's machinery, equipment, and systems.
- C. Appraise the contractor of any precautions or procedures the host has implemented for employees in or near the contractor's work areas.
- D. Coordinate Lockout/Tagout actions with the contractor when both the host employees and contractor employees will be working on or near the same equipment, machinery, or systems.
- E. Debrief the contractor at the conclusion of lockout/tagout operations regarding any hazards confronted or created in the work area.
- F. Ensure proper risk transfer is in place.

**The Contractor shall:**

- A. Obtain any available information regarding Lockout/Tagout Procedures from the host employer.
- B. Coordinate Lockout/Tagout actions with the host employer when both host and contractor personnel will be working on or near the same equipment, machinery, or systems.
- C. Inform the host employer of any hazards confronted or created in or near the machinery, equipment, or systems being worked on.



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### 3. LOCKOUT/TAGOUT INSTRUCTIONS

Perform Lockout/Tagout Procedures in the following manner:

- A. Notify all affected personnel that a lockout of equipment is required and the reason for the lockout.
- B. Identify all hazardous energy sources. **WARNING: IF ALL ENERGY SOURCES ARE NOT IDENTIFIED AND BLOCKED, EMPLOYEE INJURY MAY OCCUR!**
- C. If the equipment being locked out is within 5m of exposed energized electrical equipment or conductors, insulate the exposed energized electrical equipment or conductors with appropriate dielectric strength material for the voltage of the equipment or conductors.
- D. If the equipment is operating, the operator shall shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.). If an individual other than the operator shuts down the equipment, be sure that nobody is operating the machinery prior to turning off the power.
- E. Reposition the switch, valve, or other energy isolating device(s) so that the energy source(s) (electrical, mechanical, etc.) is disconnected or isolated from the equipment. Stored energy such as capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam or water pressure, etc., must also be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
- F. Lockout energy sources using isolating devices with an assigned individual lock. If more than one employee will be performing work on this equipment, each employee shall place their own personally identified padlock on the lockout device. Electrical equipment that has no method of Lockout/Tagout must be neutralized by removing electrical fuses or disconnecting the equipment from its power source.



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- G. Attach accident prevention tags on the controls of the equipment for each employee performing work on the equipment. Tags or signs must include:
1. The reason for the lockout;
  2. The name of the employee working on the equipment and how that person may be reached;
  3. The date and time the tag was put in place; and
  4. Attachment devices that are non-reusable, applied by hand, self-locking, and non-releasable with an unlocking strength of at least 50 pounds. A minimum 6-inch-long nylon cable tie shall be used to attach signs and tags to the equipment. These signs and tags shall remain in place until the equipment is released to be operated.
- H. Supervisors responsible for work involving Lockout/Tagout activities shall ensure that a log is maintained for work involving Lockout/Tagout activities performed by employees under their supervision.
- I. Ensure that personnel are not exposed to potential hazards, and then verify that the equipment has been locked out by operating the normal operating controls. CAUTION: RETURN OPERATING CONTROLS TO OFF POSITION AFTER TESTING.
- J. Restore equipment to service when the job is complete and equipment is ready for testing or normal service:
1. Check to ensure that no personnel are exposed to potential hazards;
  2. Clear the machine or equipment of tools and other nonessential materials;
  3. Replace protective guards that have been removed or repositioned



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4. Ensure that equipment is clear and remove padlocks and signs. Each padlock shall be removed by the employee who applied the padlock.
- K. If the employee who placed a lock/tag is not available to remove it, remove the lock/tag under facility management's supervision, provided all the following conditions are met:
1. The procedure for removal of the device is equivalent to or safer than the procedure of the person who initially attached it;
  2. The supervisor has verified that the employee who attached the device is not at the facility, and obtains management approval prior to removal of the lock/tag;
  3. All reasonable efforts have been made to tell the employee that his lock/tag has been removed; and
  4. The employee has knowledge that his lock/tag has been removed before he resumes work at the facility.
- L. In situations where lockout devices need to be temporarily removed to test or position machines or equipment, the following sequence of procedures must be followed.
1. Notify all employees involved with the specific lockout device.
  2. Clear the machine or equipment of tools and other nonessential materials.
  3. Remove employees from the machine or equipment area.
  4. Remove the locks and tags.
  5. Energize and proceed with testing or positioning.





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6. De-energize all systems.
7. Reapply energy control measures.
8. Proceed as with any other Lockout/Tagout Procedure.

*\*(WARNING: If the Lockout/Tagout of hazardous energy is not possible, or if the procedure for maintenance action requires hazardous energy to remain on/present, a written safety plan must be developed, including the best safety practices, engineering controls, administrative controls, and personal protective equipment that will be applied to ensure employee safety.)*

#### 4. LOCKOUT/TAGOUTCHECKLIST

*Instructions for completing the Lockout/Tagout Checklist*

Enter the following data in the areas indicated on the attached Lockout/Tagout Checklist.

**A. Procedure and/or Equipment Name and Model.**

Enter **specific** information that identifies the procedure being worked and/or the equipment being serviced or repaired; (Example: Pipe Repair; Pump # XXXX)

**B. Authorized/Qualified Employees**

Enter the names of the employees who will be accomplishing the work required.

**C. Affected Employees**



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Enter the names of the employees who work with or around the procedure being performed or the equipment being serviced/repaired. These employees will need to be notified prior to starting work.

**D. Hazardous Energy Sources and Types**

List all of the hazardous energy, both kinetic energy and potential energy that are present during the procedure being performed or are used by the equipment:

Kinetic Energy: Moving parts or materials (*Example: electric energy, mechanical movement, heat/cold, high intensity light (laser), hydraulic, fluid pressures, water/chemical/gas flow.*)

Potential Energy: Stored energy that could release and cause injury/illness. (*Example: hydraulic accumulators, electric capacitors, spring tension, pressurized air, water gates holding back water flow, mechanical parts that could move or fall.*)

**E. Energy Dissipation Required**

List the stored (potential) energy that needs to be released in order to make the procedure or equipment safe.

Type: Describe the energy source that must be dissipated. (*Example: Release spring from gate, bleed hydraulic pressure from line.*)

Location: Describe the location of each energy source. (*Example: north flood gate, actuator hydraulic supply accumulator # 4.*)

**F. Energy Isolating Devices Required**

Type: Describe the switch, valve or other device used to isolate the procedure or equipment from hazardous energy.



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Location: Describe the location of each device. (*Example: hydraulic accumulator for gate # 442*).

Warning: Describe any warnings associated with the device. (*Example: tagout, warning sign, strobe light*).

**G. Lockout Devices Required**

Enter the type and quantity of lockout devices needed to follow the lockout procedure. (*Example: Circuit breaker lockout (2); or Ball valve lockout (1)*).

**H. Shutdown procedures \***

Provide a step-by-step procedure for shutting the equipment down and for isolating and locking out all power sources. Verify power source isolation by trying to operate the equipment.

**I. Start-up procedures**

Provide a step-by-step procedure for returning the equipment to service. Include removal of tools, replacement of guards, and removal of lockout/tagout.

**J. Approvals**

Have your supervisor check the procedure and verify its accuracy. The procedure should be made readily available to any "authorized employee" who is likely to perform maintenance on the equipment. Where practical, the checklist should be inserted into a sheet protector and posted next to the procedure being accomplished or attached to the equipment being serviced/repared (so all affected, authorized, and qualified personnel can see it).



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**LOCKOUT/TAGOUT CHECKLIST**

<b>1. Procedure/Equipment Name</b>		<b>Equipment Model</b>
<b>2. Authorized/Qualified Employees</b>		
<b>3. Affected Employees</b>		
<b>4. Hazardous Energy Sources</b>		
Kinetic Energy Sources (energy in motion):	Potential Energy Sources (stored energy):	
<b>5. Energy Dissipation Required</b>		
Type:	Location:	



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**6. Energy Isolation Devices Required**

Type:	Location:	Warning:

**7. Lockout/Tagout Devices Required**

Type/Quantity

**8. Shutdown Procedures**

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**9. Start-Up Procedures**

**10. Approvals**

Originator:

Date:

Supervisor:

Date:



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Compiled by :  Silver Streak Trading Health and Safety Consultant  Date :	Reviewed By:  Site Manager Quorum  Date :	Reviewed by :  Safety representative Quorum  Date :
Approved by :  C.E.O. Quorum  Date :		