Company Name:	**Equipment/Job Identification: TOP MAN/ TOP MAN HELPER**
Mine Name:	**Type of Equipment:** **Make:** **Model:**
Date of Analysis:	**Year:** **Use:**

Pre-Assessment

- **List pre-requisites here**
  Task Training on Truck, Forklift, Front Endloader, Shotcrete Machine, Band Saw, Compressors, Generators, Cement Mixer, Fan, Dozer, Pressure Washer, Backhoe, Drill Rig
  Bell Signals
  Experienced Shaft Worker
  Shaft Worker/Top Man JTA
  Hooking up Equipment
  Rigging and Lifting
  Haz Com
  Hoisting Hand Signals

Duty 1: Start of Shift Activities

Learner will demonstrate how to conduct a safe and thorough start of the shift activities. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe start of the shift activity includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Sign in at mailbox		1		
Proceed to dry house to change clothes		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Check in at lamp house or dry house		1		
Obtain PPE	Prevent long-term hearing loss; prevent eye injuries; prevent foot injuries; prevent hand injuries; PPE is for your protection – wear it and wear it properly at all times	2		Hard hat with hearing muffs and/or ear plugs, safety glasses, metatarsal boots, leg bands, metacarpal gloves, florescent and reflective vest, rain suits (when needed)
Meet with other topman and discuss work phase		1		
• Check to see if bottom tools are ready		1		Blow pipe, scraper (two good bolts, nuts, washers and two crescent wrenches), three shovels, 1-1/4”air hose-minimum of 15 feet

Duty 2: Mucking

Learner will demonstrate how to conduct and prepare for a safe and thorough mucking process. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe process of mucking includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Check backhoe				
• Check motor and hydraulic oil	Motor failure, hydraulic system failure could occur if allowed for these to be low	2		Fill motor oil to overflow plug with 15W 40 motor oil, fill hydraulic oil tank 2/3 full with ISO 46 hydraulic oil
• Check that it has been greased	Failure to grease will cause pin and bushing to wear and will fail prematurely.	2		
• Check tools/materials		1		Hammer, water nozzle, spads, 9 wire, picks, shaft bar, 2 crescent wrenches, ball string, grease gun and tube of grease
• Visually inspect backhoe				
o Check chain and clevis	Could fall and cause damage to the equipment and cause crushing injuries to employee	2		
o Secure boom and outrigger	Could cause damage to the equipment and cause crushing injuries to employee	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Secure all tools		1		
o Check hoses and levers		1		
o Check for cracks in boom		1		
Send backhoe into hole		1		
• Hook backhoe to hoist		1		
o Ensure cable is centered over backhoe	If cable is not centered over backhoe, when it is picked up it could swing out of control and causing crushing injuries and damage to the surrounding equipment	2		
• Signal to hoist operator to pick up		1		
• Stand away from backhoe during initial lift	If cable is not perfectly centered over backhoe, when it is picked up it could swing out of control and causing crushing injuries and damage to the surrounding equipment	2		
• Steady backhoe		1		Do not travel under backhoe, stay out of pinch points while lift is occurring
• Signal to hoist operator to swing to the shaft center		1		
• Go to crow's nest		1		
• Observe that the backhoe is on center and steady	If not centered could cause damage to the backhoe and ventilation devices and service lines going down the hole	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Signal to hoist operator to lower to bottom		1		
• Listen for contact with obstructions as it is being lowered		1		
• Observe cable for shake or whip		1		This indicates that backhoe has touched bottom or contacted an obstruction. Signal hoist operator to stop at indication of a problem
Send personnel into hole				
• Hook up mantrip bucket		1		
• Ensure self-rescuers are in the mantrip bucket	Self rescuer protects you from carbon monoxide in case of a fire	2		
• Signal hoist operator to lift the bucket		1		
• Clean bottom of bucket		1		
• Signal hoist operator to swing to mantrip center		1		
• Travel to crow's nest	Lack of positive communication could result in equipment damage or personal injury	2		
• Obtain the bell button		1		
• Signal hoist operator to lower personnel		1		
• Observe personnel being lowered into the shaft	Lack of positive communication could result in equipment damage or personal injury	2		
• Listen for signals from personnel	Lack of positive communication could result in equipment damage or personal injury	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Observe cable for shake or whip		1		This indicates that the bucket has touched bottom or contacted an obstruction. Signal hoist operator to stop at indication of a problem.
Listen for signals to turn on air and water		1		Warn personnel in the hole, the air is coming on. Turn air on slowly
• Warn personnel in the hole air is coming on	Failure to warn people could result in the air line whip and personal injury	2		
• Listen for response		1		
• Turn air on slowly	Could result in the air line whip and personal injury	2		
• Turn water valve on		1		
Listen for major air leaks during the shift	Could result in the air line whip and personal injury	2		If leaks are heard, turn off immediately
Listen for signals to turn off air and water		1		
• Close air valve		1		
• Use hearing protection	Could result in hearing damage	2		
• Bleed air off slowly		1		
• Close water valve		1		
Obtain truck and loader		1		
Grease muck buckets		1		Prior to mucking shift and when turning the backhoe
Oil ears and bail stop		1		
Send muck bucket into hole		1		
• Signal hoist operator to swing to muck bucket		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Hook on dump side of bucket		1		
• Stand clear of bucket	Could cause crushing injuries, be aware of pinch points at all times	2		
• Signal hoist operator to lift bucket		1		
• Clean bottom of bucket	Rocks falling off the bottom of bucket could cause serious injuries	2		
• Signal hoist operator to swing to muck center		1		
• Repeat process for second bucket		1		
Dump muck bucket				
• Turn bucket to dump side	Improper dumping could cause crushing injuries	2		Always dump bucket toward you
• Ensure both bucket ears are latched	Could cause unexpected bucket dumping	2		Could cause bucket to dump unexpectedly if both ears are not latched
• Position yourself so you have an escape route when dumping the bucket	Failure to have escape route could cause crushing injuries	2		Beware of slip, trip, and fall hazards
• Flip bucket ears		1		
o Ensure only one person is in charge of flipping ears	Could cause unexpected bucket dumping	2		
o Look for big rocks	Big rocks could cause pinching or struck by type of injuries	2		Big rocks could cause pinching or struck by type of injuries

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Rock bucket from center of dump side of bucket from front to back to relieve pressure on ears		1		
• Dump the bucket weight on dump side		1		If bucket is loaded with the weight on the dump side, bucket will dump itself when ears are flipped.
• Dump an evenly loaded bucket		1		If bucket is loaded evenly, a slight pull from the center of the dump side is needed to dump bucket.
• Dump the bucket weight on the back side		1		
o Signal to set bucket on the ground		1		
o Let the bail down		1		
o Flip both ears in front of bail		1		
o Signal the hoist operator to lift the bucket		1		
• Flip one ear on bucket to send back in the hole		1		Keep fingers out of pinch points. If possible, flip the ear on the bail stop side
• Steady bucket and clean bottom	Rocks falling off the bottom of bucket could cause serious injuries	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Monitor bucket constantly for damage	Loose or damaged parts could fall causing injury to employee	2		Broken ears, loose counter weights, burrs on bucket rim, cracks in the bail or bucket, rocks stuck in the counter weights
• Clean bucket as needed during the shift		1		
o Turn bucket upside down		1		This is a two person job
o Clean the bottom of the bucket	Rocks flying off the bottom of bucket could cause serious injuries	2		
o Strike bottom of bucket with sledge hammer until material breaks loose	Cleaning bucket in this manner creates high noise levels which can cause lose of hearing	2		Appropriate PPE is required. Listen for tone change when material breaks loose.
Clean bottom		1		
• Send in bottom tools using the muck bucket when notified		1		Blow pipe, scraper (two good bolts, nuts, washers and two crescent wrenches), three shovels, 1-1/4”air hose-minimum of 15 feet
• Latch both ears	Could cause bucket to dump unexpected. Could cause injury to employees in the hole	2		When anything is in the bucket
• Ensure all three compressors are running		1		

Duty 3: Loading and Hauling Muck

Learner will demonstrate how to conduct a safe and thorough loading and hauling muck procedure. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe loading and hauling muck procedure includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Conduct pre-operational check on loader and dump truck	Failure to identify defects could cause equipment damage or personal injury	2		
• Follow company pre-operational check list	Failure to identify defects could cause equipment damage or personal injury	2		
• Notify supervisor if defects are found	Failure to repair defects could cause equipment damage or personal injury. Don't set a trap for someone else	2		
Fuel equipment				
• Stay with the nozzle while refueling	Staying will prevent unexpected overflow of fuel causing fire hazard and environmental damage	2		
Grease equipment				
• Block or chock equipment from movement	Unexpected movement could cause serious injury or death	3		
• Take the keys	Unexpected movement could cause serious injury or death	3		
Load truck with muck after the fourth bucket is dumped		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Do not overload the truck	Overloading truck may make it unstable and cause equipment damage	2		Four loader bucket of muck per truck
• Keep loader bucket as low as possible except when dumping	Prevent the machine from upsetting	2		
Haul muck to muck pile		1		
Dump load at the toe of the berm and additional loads tight to the previously dumped loaded	Always dump short of the edge. Many fatalities have taken place when piles gave way and took equipment.	3		Do not drive with the bed up. Do not dump on uneven ground
Travel back to the hole		1		
Position truck for loading		1		
Disengage transmission		1		
Set park brake	Failure to set park brake could result in run away truck	2		
Repeat this process until mucking is completed and all muck is cleaned up		1		
Return truck and loader to their parking area		1		

Duty 4: Cable Examination

Learner will demonstrate how to conduct a safe and thorough cable examination. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe cable examination includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
				Conducted every 7 days (usually Sunday day shift) and if hoist has been down for a full operating shift. Cable examinations are recorded in the hoist book (date and time ragged) and initialed by hoist operator
Begin cable exam when boom is over crow's nest		1		
Place chalk mark on cable directly in front of hoist		1		
Go to crow's nest with a piece of burlap and wrap lightly around cable		1		
Hold burlap around cable as cable is lowered into hole and check for burrs, broken wires, deformity		1		
Wait until another person has positioned himself in front of the hoist house		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Remove the mark when the mark reaches you		1		
Instruct hoist operator to lower cable into the hole while second person rags remaining cable with burlap		1		
Discuss any defects found with foreman	Failure to report defects could result in cable failure, equipment damage and possible death	3		Refer Subpart O for guidance on out-of-service criteria
Attach shaft bucket to make a trial run in the hole		1		

Duty 5: Preventative Maintenance

Learner will demonstrate how to conduct safe and thorough preventative maintenance on a variety of equipment. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe preventative maintenance includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Grease derrick fittings	Failure to grease fittings could shorten the life of the equipment	2		
• Obtain grease gun		1		
o Take extra tube of grease		1		
• Obtain two-way radios	Lack of positive communication could result in personal injury	2		
• Get into bucket of second hoist with helper	Failure to have a second person could result in a fall from bucket	2		Consider tie-off options
• Signal hoist operator for bucket positioning		1		
• Grease boom block	Failure to grease fittings could shorten the life of the equipment	2		
▪ Instruct hoist operator to reposition boom to grease the second boom block		1		
▪ Instruct hoist operator to reposition boom to grease the fittings on top of derrick		1		
Service drill rig				
• Use tube grease		1		
• Grease all pivot points	Failure to grease fitting could shorten the life of the equipment	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Grease until you see a show of grease		1		
• Grease hammers	Failure to grease hammers would result in shortened lifespan	2		Two fittings, one at the top and one at the base
o Apply three pumps of grease	Over-greasing could cause internal damage	2		
• Fill drill reservoir until it starts to come out of the overflow with Rock Drill 100		1		Reservoir located in center of rig
• Perform steel maintenance		1		
o Examine the steels, collars, and bits		1		
• Check all threads for wear		1		
• Check bits for pitch		1		As they wear the pitch gets straighter
• Check steels for obstruction		1		
• Blow through steel		1		
o Grease all threads with drill steel Lubricant	Failure to grease would result in shortened lifespan and makes joining steel difficult	2		
o Remove striker bar from hammer		1		
• Examine seals		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Replace striker bar seal as needed		1		
o Check materials on drill rig		1		6 X 6 blocks, 1 X 6 pieces of wood, wedges, 2 X 2 plugs, pipe wrench, hammer, crescent wrench, striker bar, extra steel and collar
o Pressure wash drill rig weekly or as needed		1		
Service backhoe				
• Hook up 1” air hose		1		
o Use whip check	Failure to do so could cause a hose whip and personal injury	2		
• Remove bolts from scraper		1		
• Extend boom and remove scraper		1		
• Change motor oil	Failure to change oil would result in shortened equipment life	2		
o Remove bottom drain plug		1		
o Drain oil into a container		1		
o Dispose of oil in used oil drum		1		
o Replace drain plug		1		
o Remove overflow plug		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Remove fill cap and clean area	Dirt and debris in the oil could cause motor damage	2		
o Add new 15W 40 motor oil until it comes out of overflow		1		Approximately 3 quarts
o Replace overflow plug		1		
o Replace fill cap		1		
• Grease backhoe				
o Grease all hinge points on boom and bucket	Failure to grease would result in shortened lifespan on pins and bushings	2		
o Grease swinger cylinders	Failure to grease would result in shortened lifespan on pins and bushings	2		
o Grease outriggers	Failure to grease would result in shortened lifespan on pins and bushings	2		
o Apply until you have a show of grease		1		
• Check hydraulic fluid		1		Tank located on operator's left side
o Clean area around fill cap	Dirt and debris in hydraulic fluid would cause hydraulic system failure	2		
o Remove fill cap		1		
o Check oil level		1		Tank should be 2/3 full with ISO 46
o Replace fill cap		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Check air oiler level		1		
o Oiler is located on right side of operator's seat		1		
o Clean area and remove cap	Dirt and debris in oil would cause shortened equipment lifespan	2		
o Fill to top of reservoir with Rock Drill 100		1		
o Replace cap		1		
• Pressure wash backhoe weekly		1		
• Check tools/materials		1		Hammer, water nozzle, spads, 9 wire, picks, shaft bar, 2 crescent wrenches, ball string, grease gun and tube of grease

DUTY 6: Drilling

Learner will demonstrate how to conduct and prepare for safe and thorough of drilling. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe process of drilling includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Send in lay out tools and materials		1		50 foot tape, can of lay out paint, ball of string, two plumb bobs, wooden plug, one panning board, 8 and 16 penny nails, bench hammer
Listen for signals to turn off air and water		1		
• Close air valve		1		
• Use hearing protection	Failure to wear hearing protection would result in hearing damage	2		
• Bleed air off slowly		1		
• Close water valve		1		
Send in mantrip bucket with collar pipe		1		135 to 185 2” PVC cut approximately 16”
• Hook up to derrick		1		
• Signal hoist operator to pick up bucket		1		
• Clean the bottom	Rocks from bottom of bucket could fall injuring employees in the hole	2		
• Signal hoist operator to hole		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Travel to crow's nest when signaled to observe mantrip	Lack of positive communication could result in personal injury or equipment damage	2		
• Obtain the bell button		1		
• Observe personnel being hoisted out of the hole	Lack of positive communication could result in personal injury or equipment damage	2		
• Listen for signals from personnel	Lack of positive communication could result in personal injury or equipment damage	2		
• Observe cable for shake or whip		1		This indicates that the bucket has contacted an obstruction. Signal hoist operator to stop at indication of a problem.
Signal hoist operator to pull backhoe		1		
• Travel to other crow's nest		1		
• Obtain the bell button		**1**		
• Observe cable for shake or whip		1		This indicates that the backhoe has contacted an obstruction. Signal hoist operator to stop at indication of a problem.
Assist with landing the backhoe		1		
• Stay in communication with the hoist operator	Lack of positive communication could result in personal injury or equipment damage	2		
• Unhook the backhoe		1		
• Signal hoist operator to go to the drill rig		1		
Hook up drill rig		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Observe chain being lifted up to ensure that it doesn't catch on equipment	Chain catching could cause damage to drill rig and personal injury	2		
• Signal to lift		1		
• Stand back and signal to hoist operator to swing toward the hole		1		
Steady drill rig		1		Do not travel under drill rig, stay out of pinch points while lift is occurring
Signal to hoist operator to swing to the shaft center		**1**		
Go to crow's nest		**1**		
Observe that the drill rig is on center and steady		1		
Signal to hoist operator to lower to bottom		1		
Listen for contact with obstructions as it is being lowered		1		
• Observe cable for shake or whip		1		This indicates that drill has touched bottom or contacted an obstruction. Signal hoist operator to stop at indication of a problem
Send personnel into hole				
• Hook up mantrip bucket		1		
• Ensure self-rescuers are in the mantrip bucket	Self rescuers protect you from Carbon Monoxide in case of a fire	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Signal hoist operator to lift the bucket		1		
• Clean bottom of bucket		1		
• Signal hoist operator to swing to mantrip center		1		
• Travel to crow's nest	Lack of positive communication could result in personal injury or equipment damage	2		
• Obtain the bell button		1		
• Signal hoist operator to lower personnel		1		
• Observe personnel being lowered into the shaft	Lack of positive communication could result in personal injury or equipment damage	2		
• Listen for signals from personnel	Lack of positive communication could result in personal injury or equipment damage	2		
• Observe cable for shake or whip		1		This indicates that the bucket has touched bottom or contacted an obstruction. Signal hoist operator to stop at indication of a problem.
Listen for signals to turn on air and water		1		Warn personnel in the hole, the air is coming on. Turn air on slowly
• Warn personnel in the hole air is coming on	Failure to warn personnel could result in air line whip and personal injury	2		
• Listen for response		1		
• Turn air on slowly	Failure to turn air on slowly could result in air line whip and personal injury	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Listen for major air leaks during the shift	Failure to identify an air line leak could result in air line whip and personal injury	2		If leaks are heard, turn off immediately
• Turn water valve on		1		
Travel into hole to drill		1		See Shaft Worker JTA
Travel to crow's nest		1		
Observe the pulling of the drill rig		1		
• Obtain the bell button		1		
• Observe cable for shake or whip		1		This indicates that drill rig has contacted an obstruction. Signal hoist operator to stop at indication of problem
Assist with landing the drill rig		1		
• Stay in communication with the hoist operator	Lack of positive communication could result in personal injury or equipment damage	2		
• Unhook the drill rig		1		

Duty 7: Blasting

Learner will demonstrate how to conduct safe and thorough blasting procedures. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe blasting procedure includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Send personnel into hole		1		
• Hook up mantrip bucket		1		
• Ensure self-rescuers are in the mantrip bucket	Self rescuers protect you from carbon monoxide in case of a fire	2		
• Signal hoist operator to lift the bucket		1		
• Clean bottom of bucket		1		
• Signal hoist operator to swing to mantrip center		1		
• Travel to crow's nest	Lack of positive communication could result in personal injury and equipment damage	2		
• Obtain the bell button		1		
• Signal hoist operator to lower personnel		1		
• Observe personnel being lowered into the shaft	Lack of positive communication could result in personal injury and equipment damage	2		
• Listen for signals from personnel	Lack of positive communication could result in personal injury and equipment damage	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Observe cable for shake or whip		1		This indicates that the bucket has touched bottom or contacted an obstruction. Signal hoist operator to stop at indication of a problem.
Unhook shaft bucket and hook up powder magazine		1		
Ensure magazine is ready		1		Loading poles, blow pipe, black tape, powder punch, galvanometer
Ensure loading poles and blow pipe are secured to the magazine		1		
Signal hoist operator to pick up magazine		1		
Ensure bottom of magazine is clean before lowering into hole	Rocks and debris falling from bottom of magazine would result in personal injury to employees in the hole	2		
Signal hoist operator to send magazine in the hole		1		
Assist in landing magazine		1		
Unhook the magazine		1		
Send in stemming bucket		1		
• Ensure gravel bucket is full with stemming		1		
• Hook to bucket		1		
• Signal hoist operator to pick up stemming bucket		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Clean bottom of stemming bucket	Rocks and debris falling from bottom of stemming bucket would result in personal injury to employees in the hole	2		
• Signal to hole		1		
Hook up bulk loader		1		
• Ensure bulk loader is weighed	Failure to keep track of bulk explosives would result in ATF penalties	2		Record weight
Raise bulk loader enough to clean and trim	Rocks and debris falling from bottom of bulk loader would result in personal injury to employees in the hole	2		
Signal hoist operator to lower into hole		1		
Wait for signal to turn on 1 ¼" air line		1		
• Listen for signal to turn on air		1		
• Warn personnel in the hole air is coming on	Failure to warn personnel that air is coming on could result in air line whip and personal injury	2		
• Listen for response		1		
• Turn air on slowly	Failure to turn air on slowly could result in air line whip and personal injury	2		
Wait for signal to turn off 1 ¼" air line and bleed off		1		
• Turn off valve		1		
• Open bleeder valve slowly		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Ensure hearing protection is worn	Failure to wear hearing protection could result in hearing damage	2		
Assist in landing the bulk loader		1		
Ensure bulk loader is weighed	Failure to keep track of bulk explosives would result in ATF penalties	2		Record weight
Signal to hoist operator to lowering empty hook into the hole		1		
Wait for signal from hole for shooting cable		1		
Lower shooting cable		1		
Check shooting cable		1		
• Unshunt shooting cable		1		
• Listen for signal from bottom to touch wire leads together		1		
• Wait for Ok from bottom		1		
• Reshunt shooting cable	Failure to reshunt shooting cable could result in stray current reaching explosives	2		
Assist landing stemming bucket		1		
Mark phone line and pull up	Failure to remove line from hole could result in stray current reaching explosives	2		
Send in sand bucket		1		
Send in stemming bucket		1		Required in close proximity of homes
• Ensure sand bucket is full with sand		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Hook to bucket		1		
• Signal hoist operator to pick up sand bucket		1		
• Clean bottom of sand bucket	Failure to clean bottom of sand bucket could result in rocks and debris to fall from bucket injuring employees in the hole	2		
• Signal to hole		1		
Send in blasting mats	Blasting mats reduce the amount of fly rock from blasting	2		
• Hook cable to mats		1		
• Instruct hoist operator to shake mats	Shaking mats prevents rocks and debris from falling onto employees in the hole	2		
• Inspect mats for loose materials	Inspecting mats ensures no loose rocks and debris will fall on employees in the hole	2		
• Signal bottom that mats are coming in		1		
• Signal hoist operator to lower into hole		1		
Hook to mantrip bucket		1		
Signal hoist operator to lift bucket		1		
Clean bottom of bucket	Rocks and debris falling from bottom of bucket would result in injury to employees in the hole	2		
Signal hoist operator to lower bucket into hole		1		
Wait for signal from hoist operator for mantrip		1		Refer to sending personnel in of hole

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Pull up bell lines		1		
Turn off fan and heater	Backpressure from blast would result in fan damage	2		Heater must be off before fans are turned off
Wait for all clear signal after shot goes off	Failure to wait for all clear could result in personal injury from fly rock	2		
Turn on fan		1		
Wait for smoke to clear	Inhaling noxious blasting fumes could result in irreversible lung damage	2		
Lower the bell and phone lines	Lack of communication could result in personal injury or equipment damage	2		
Blow off coping using blow pipe	Failure to do so could cause rocks and debris to fall on employees in the hole	2		
• Hook up 1-1/4” air line to blow pipe		1		
• Install whip checks	Failure to install whip check could result in air line whip and personal injury	2		
• Slowly turn on air	Failure to turn on air slowly could result in air line whip and personal injury	2		
• Blow off coping and ensure that all rocks are blown off	Failure to do so could cause rocks and debris to fall on employees in the hole	2		

Duty 8: Concrete Work

Learner will demonstrate how to conduct a safe and thorough process for concrete work. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe process of concrete work includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Install panning		1		
• Place panning tin on scaffold		1		
• Direct hoist operator to make hook up to scaffold		1		
o Ensure chains do not foul with the tin		1		Tin will be placed over railings on scaffold
o Ensure everyone is clear of tin when scaffold is raised up	Failure to stay clear could result in personal injury	2		Tin will be placed over railings on scaffold
• See Shaft Worker's JTA on panning		1		
• Unhook from scaffold		1		
• Hook to backhoe		1		Follow procedures for lowering and pulling backhoe
Set pads		1		
• Hook up to mantrip bucket		1		
• Travel to crow's nest	Lack of positive communication could result in personal injury or equipment damage	2		
• Observe personnel being lowered into hole	Lack of positive communication could result in personal injury or equipment damage	2		Follow mantrip procedures

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Send in pad bucket with supplies		1		8 to 12 pads, female dowel rods, water stop, pad box (see pad box list of items), three sledge hammers, two picks, two shovels, shaft bar, laser level, two 2 foot levels, air regulator, ¾" air hose, Brad nailer
• Send in gravel bucket		1		
o Signal hoist operator to raise		1		
o Clean bottom and chute of bucket	Failure to clean bottom of bucket and chute could result in rocks and debris falling on employees in the hole	2		
o Signal hoist operator to drop into hole		1		
Send stating ring into the hole		1		
• Hook two sections of starting ring to hoist		1		
• Allow hoist operator perform a light drop test before lowering into the hole	Performing a drop test will ensure a secure hookup	2		
• Examine starting ring sections for loose debris	Loose debris can fall on employees in the hole causing injury	2		
• Repeat process for other two sections of starting ring		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Hook up second gravel bucket		1		
• Signal Hoistman to raise		1		
• Clean bottom and chute of bucket	Failure to clean bottom of bucket and chute could result in rocks and debris falling on employees in the hole	2		
• Signal hoist operator to drop into hole		1		
Load scaffold with straight steel				
• Insert chain/sling on each end of straight steel		1		
• Signal hoist operator to lift straight steel and swing overtop of scaffold		1		
• Signal hoist operator to lower steel onto handrails		1		Make sure boot is on correct side of scaffold
• Secure cable around railing with clevis	Ensuring a secure hookup will prevent steel from falling	2		
Send radius steel into the hole				
• Signal hoist operator to swing radius steel		1		
• Hookup to radius steel		1		
• Signal hoist operator to raise the steel		1		
• Check the hook up and all the steels in the boots	Ensuring a secure hookup will prevent steel from falling	2		
• Check for loose debris	Loose debris could fall on employees in the hole causing injury	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Signal to hoist operator to send radius steel in the hole		1		
Ready the mantrip		1		Follow procedures for hoisting personnel
Send scaffold with straight steel into the hole		1		
• Place hook on scaffold		1		
o Ensure chains do not foul		1		
o Ensure everyone is clear when scaffold is raised up	Failure to stay clear could result in personal injury	2		
Assist with the landing of the scaffold		1		
Unhook scaffold		1		
Set the scaffold out of the way using forklift		1		
Load mantrip bucket with form tools		1		Impact gun and 1-1/4” socket, drift pins, 2 pound hammers, extra bolts, washers and nuts, crescent wrenches, Speed wrenches 1-1/4”
Send personnel back into hole				
• Travel to crow’s nest	Lack of positive communication could result in personal injury or equipment damage	2		
• Refer to Hoisting Personnel	Failure to follow procedure could result in personal injury	2		
Unhook from empty bucket		1		
Oil forms		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Check and remove for tools on top of forms and shelves	Failure to remove tools from forms could result in personal injury if they would fall	2		
Send shaft form into the hole				
• Hook to shaft form		1		
• Signal hoist operator to raise shaft form high enough to clean bottom and steady	Failure to clean bottom could result in rocks and debris falling on employees in the hole	2		
o Lower form pins on rings Nos. 2, 3, 4 and enclosure		1		
• Signal hoist operator to go to the shaft center and lower form into the hole		1		
• Repeat process until all four forms sections are in the hole		1		
• Send bucket back into the hole and bring the crew up	Failure to follow procedure could result in personal injury	2		Follow procedures for mantrip
• Unhook from bucket		1		
Set forms scaffold, forms and concrete pour				
• Place hook on scaffold		1		
o Ensure chains do not foul		1		
o Ensure everyone is clear when scaffold is raised up	Failure to stay clear of scaffold could result in personal injury	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Signal hoist operator to place scaffold on the ground		1		
• Load scaffold with materials		1		Track jacks and handle, 6” x 6” x 1’ blocks and vibrator
• Signal to hoist operator to lower scaffold into the hole		1		
• Travel to the crow’s nest	Lack of positive communication could result in personal injury or equipment damage	2		
• Follow mantrip procedures	Failure to follow procedures could result in personal injury	2		
• Hook up to radius steel		1		
• Signal to hoist operator to send steel into the hole		1		
• Hook up concrete bucket		1		
• Signal hoist operator to boom up to concrete center		1		
• Place some boards on ground for bucket to sit on		1		
• Signal hoist operator to lower bucket to the ground		1		
• Instruct concrete crew to fill bucket with concrete		1		
• Trim the concrete bucket	Failure to trim the concrete bucket could result in rocks and debris falling on employees in the hole	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Instruct hoist operator to raise bucket and clean bottom	Failure to clean bottom of bucket could result in rocks and debris falling on employees in the hole	2		
• Signal hoist operator to lower bucket into the hole		1		
• Repeat process for dropping forms four more times		1		
Prep enclosure bucket				
• Oil doors and place in bucket		1		
• Place three sledge hammers in bucket		1		
• Add water nozzle		1		
• Add three square shovels		1		
• Add trowels		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Pull and patch enclosure		1		Burlap, bucket of sand, bucket of cement, mixing box, concrete sponges and rubbing stones, mixing hoe, Bucket of water
Pull forms and retrieve				
• Assist in landing forms as they are retrieved		1		Two person job
• Unhook from forms		1		
• Pressure wash forms		1		
• Repeat until all remaining forms have been retrieved		1		

Duty 9: Other Activities

Learner will demonstrate how to safely and productively conduct a variety of other activities related to the job. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. Thorough and safe other work activities include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Empty all garbage		1		
Sweep and clean dry house		1		
Sweep and clean bathhouse		1		
Sweep and clean muck room		1		
Sweep and clean lamp house		1		
Keep walkways clear of all debris and materials	Slips/trips/falls are the #3 cause of injury in the mining industry	2		
Change and dispose oil rags	Oily rags can create a fire hazard	2		
Change oil drums				
• Use forklift		1		See Forklift JTA
• Get help		1		
• Examine chains for defects	Damaged chains could break causing fall of drum	2		
Pick up and place tools in designated locations		1		
Clean nail and screw guns		1		
Cut collar pipe				
• Use band saw	Keep body parts away from saw blades	2		Task Trained Required
• Cut sections 16”		1		
• Place cut sections in pipe drum		1		
Cut panning boards				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Use band saw	Keep body parts away from saw blades	2		Task Trained Required
• Cut 1” rough cut boards into 16” pieces		1		
• Stack neatly on a pallet		1		
Make up shooting cable leads				
• Obtain shot wire		1		
• Cut into 15 to 20 foot sections		1		
• Tape three runs together		1		
• Skin the ends and shunt together		1		
• Coil and store neatly or attach to shooting cable		1		
Prep forms				
• Obtain broad blade putty knife burlap, air chisel, wire brush		1		
• Scrape form skins		1		
• Scrape the top and sides		1		
• Chip the back out using air chisel if necessary		1		
o Use appropriate PPE	Failure to wear appropriate PPE could result in eye injury	2		
• Grease the jacks		1		
• Check bolts and clean/replace if necessary		1		
Weighing the bulk loader				
• Obtain forklift		1		Task Trained Required
• Obtain bulk loader		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Disconnect chain and ground wire		1		
• Obtain the scale		1		
• Hook the scale over the fork with nylon strap		1		
• Center scale over top of bulk loader		1		
• Turn on and zero scale		1		
o Press and hold zero button		1		
• Hook to bulk loader		1		
• Raise off ground		1		
o Make sure bulk loader is not touching forklift for accuracy		1		
• Report reading to blaster in charge		1		
• Set on ground		1		
• Turn off and remove scale		1		
• Return bulk loader and scale to storage area		1		
• Reconnect chain and ground wire	Failure to reattach ground wire could result in stray current reaching explosives	2		
Pressure wash equipment				
• Obtain pressure washer		1		Task Trained Required
• Check oil, gas and fuels	Improper maintenance could result in shortened lifespan of equipment	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Run water through the hose		1		
• Turn off water		1		
• Hook up hose		1		
• Turn water on		1		
• Squeeze nozzle handle to bleed air out of the line		1		
• Start the gasoline engine		1		
• Turn burner on		1		
• Wear PPE	Failure to wear appropriate PPE could result in eye and hand injuries	2		Safety glasses, Muck suit, and gloves
• Squeeze nozzle to operate	Directing pressurized water toward yourself or another employee will result in injury	2		*CAUTION: Do not direct pressurized water toward yourself or other persons*
Prep shaft scaffold				
• Examine scaffold for necessary tools		1		Three picks, one shaft bar, one sledge hammer, pole axe, pipe wrenches, ½" and ¾" socket set, two crescent wrenches, 2 pound hammer, PVC glue and primer, pipe dope, screw drive, insert wrench,
Prep for service lines and vent tubes				
• Add vent tube bracket		1		
• Add service line bracket		1		
• Add four to six 2" x ¾" bolts and washers		1		
• Add vent tube ring		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Add vent tube ring tightener		1		
• Attach pipe hanger and pipe		1		
• Add nylon strap for vent tube		1		
• Add roustabout		1		
Prep to hang hoses and scale rib after shot				
• Add 1-1/4” hose (20 feet)		1		
• Add bull hose		1		
• Add water regulator		1		
• Add air light		1		
• Add vent bag		1		
• Add 9 wire		1		
Prep to pan				
• Add air regulator		1		
• Add ¾” air hose		1		
• Add quick connect (1” to ¾” adapter)		1		
• Add two nail guns and nails		1		
• Add air tool oil		1		
• Add screw gun		1		
• Add panning boards (at least 40 16”pieces)		1		
• Add male dowel rod (55 to 78)		1		
• Add tin bars		1		
• Add 50’ tape		1		
• Add ball of string		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Add can of marker paint		1		
• Add ramset gun, shot, and nails		1		
• Install panning tin boots		1		
Prep vibrator				
• Visually inspect		1		Hose, Concrete build up, dents
• Check oil		1		
o Remove plug		1		
o Fill with air tool oil		1		
• Hook up and test run		1		
Clean jacks and other tools				
• Visually inspect		1		
• Clean with wire brush		1		
• Clean teeth on track jack		1		
o Oil all moving parts on the jack		1		
Install inserts and blocks on forms		1		
• Install blocks with wide side in concrete		1		Only placed on ring one
• Install inserts at pre-designated location on form		1		Inserts are used to bolt service line and vent tube brackets
Prep shaft plumb buckets				
• Look for buckets in oil storage area filled ¾ full with used oil		1		
• Use caution when moving around		1		
• Return to the oil storage area		1		Do not empty until ordered to do so

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Prep for making up tins				
• Assemble tools for making up the tins		1		1-1/4" to ¾" air line adapter, air regulator set on 80 psi, screw gun and screws, ¾" air hose, two picks, two hog hooks, can of marker paint, 9 wire, wire cutters
• Have tin boots ready for loading		1		
• Number each section of tins assembled		1		
• Install cable after each section of tin on top boot		1		
Prep Shotcrete Machine				
• Obtain machine from designated area		1		
• Look inside of machine for obstructions	Failure to identify obstructions in Shotcrete machine could result in damage to equipment	2		
• Hook up hoses		1		
• Ensure breaker is off before plugging the machine in	Failure to disconnect breaker before plugging it in could result in an electrocution hazard	2		
• Set bulk bags on Shotcrete machine center		1		
• Obtain Shotcrete bag bridles		1		
Prep Shotcrete Bucket				
• Obtain Shotcrete hoses and place in bucket		1		
• Obtain clean water body		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Obtain four Shotcrete hose clamps		1		
• Obtain 8 penny nails		1		
• Obtain black tape		1		
• Obtain ¾" hose		1		
• Obtain 1-3/4" to ¾" reducer		1		
• Obtain 20 x 20 tarp		1		
• Place on materials in the bucket		1		
Prep for slabbing				
• Prep scaffold for slabbing		1		
o Obtain mixing box		1		
o Obtain 2" x 6" x 5' slab boards (16 to 24)		1		
o Obtain two trowels		1		
o Obtain mixing hoe		1		
o Obtain two 5-gallow bucket dry cement		1		
o Obtain boxes of tar strips		1		
o Obtain two 5-gallon bucket hardwood wedges		1		
o Obtain two ramset gun shots and nails		1		
o Obtain 5-gallon bucket of shims		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Obtain 5-gallon bucket of water		1		
o Obtain 4 foot level		1		
o Obtain two-way radios		1		
o Obtain two crow bars		1		
o Obtain two hammers		1		
o Obtain two concrete sponges		1		
o Obtain two scoops		1		
o Obtain shovel		1		
o Place all materials on shaft scaffold and secure as needed		1		
• Prep concrete mixer area				
o Obtain fine mortar sand		1		
o Obtain bag cement		1		
o Obtain fine mortar sand		1		
o Obtain shaft bucket of water		1		
o Obtain shovel		1		
o Obtain three empty buckets		1		
o Obtain trowel		1		
o Obtain 2” x 6” x 5’ slab boards		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
o Obtain boxes of tar strips		1		
• Operate cement mixer		1		Task trained required

Duty 10: End of Shift Activities

Learner will demonstrate how to conduct safe and thorough end of shift activities. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. A thorough and safe end of shift activity includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Return PPE		1		
Talk to oncoming man		1		
Report any needed materials to the night walker or superintendent		1		
Proceed to dry house to change clothes		1		
Check out at lamp house or dry house		1		
Sign out at mailbox		1		

Duty 11: Emergency/Non-Routine Activities

Learner will demonstrate how to conduct safe and thorough emergency/non-routine activities. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. Thorough and safe emergency/non-routine activities include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Lack of power				
• Review/discuss procedures for utilizing generator	Failure to follow procedures could result in damage to equipment	2		
o Follow start up procedure listed on generator	Failure to follow procedures could result in damage to equipment	2		
• Operate generator weekly (Sunday) while checking cables	Ensures proper operation of generator	2		
• Provide task training		1		
Rag cables weekly (Sunday day shift)	Failure to identify defects in cable could result in personal injury/death and catastrophic damage to equipment	3		See cable examination
Respond to broken air lines				
• Beware of sounds around you	Failure to identify problems associated with irregular sounds could result in personal injury and equipment damage	2		
• If loud burst of air is heard, proceed to shaft, open the bleeder, and shut off the air	Failure to identify a broken air line could result in serious injury to employees	3		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
• Contact the shaft for further instructions		1		
Respond to lightning				
• Be on the look out for thunderstorms	Failure to identify an approaching thunderstorm could result in electrocution from lightning or a unexpected power outage	2		
• Listen for thunder		1		
• Place workers on storm watch if any signs of lightning		1		
• Remove workers from shaft	Failure to remove workers from shaft in a thunderstorm could result in an electrocution hazard	2		
Respond to emergency bell	Failure to respond to emergency bell could result in delayed treatment to injured employee	3		

Duty: 12 Winter Procedures

Learner will demonstrate how to conduct safe and thorough winter procedures. Learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. Thorough and safe winter procedures include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Drain shaft water lines				
• Disconnect the water line at the top of the hole	Frozen water lines will result in loss of production	2		
• Blow water line out with compressed air	Frozen water lines will result in loss of production	2		
• Instruct personnel in the hole to drain water line	Frozen water lines will result in loss of production	2		
Drain pond water lines				
• Blow water line out from tank to pond	Frozen water lines will result in loss of production	2		
Drain water ring lines after water ring is pumped out	Frozen water lines will result in loss of production	2		
• Disconnect the water line at the top of the hole	Frozen water lines will result in loss of production	2		Lines will drain back to the pump
Drain pressure washer	Frozen water lines will result in loss of production and damage to pressure washer	2		
Salt and sand walkways anytime there is freezing weather	Failure to salt and sand walkways could result in slipping hazard	2		
Remove snow from coping	Removing snow from coping will prevent ice and snow from falling onto employees in the shaft	2		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking 1=Important 2=Very Important 3=Critical	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
Turn off heater before turning off ventilation fan	Failure to turn off heater before fan will result in damage to heating elements	2		
Heat drill rig				
• Plug in oil tank heater	Cold oil could result in damage to hammers	2		
• Wrap drill rig with tarp	Wrapping drill rig with tarp will prevent freezing	2		
• Preheat with torpedo 2 to 3 hours before drilling heater	Preheating drill rig before drilling begins prevents water in drill rig from freezing	2		