

**ACTIVITY HAZARD ANALYSIS**

**ACTIVITY:** Concrete Placement

**ANALYZED BY/DATE:** Bill Clevenger  
08 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
<p><i>Prepare site</i></p>	<p><i>a. Chain saw operation (potential cuts, eye injuries from chips, hearing impairment, burns from exhaust, back and foot injuries from handling heavy trees and logs and puncture wounds from thorns and sharp limbs).</i></p> <p><i>b. Dirt removal/excavation (potential back, foot, head and eye injure. Also possible crushing injury from earth moving equipment and "cave-ins").</i></p> <p><i>c. Snakes may be present in area creating potential snakebite hazard.</i></p>	<p><i>a. Personnel using chain saw must be trained and full qualified in its operation. Chain saw operators must wear hard hats, steel toe shoes, gloves, chaps, eye and hearing protection. Proper lifting methods must be employed while falling and handling trees, logs and heavy brush. Care must be observed while handling thorns and brush.</i></p> <p><i>b. Exercise care while using hand tools such as shovels, picks, posthole diggers, rakes and hoes to avoid excessive strain to back muscles. Wear hard hats, steel toe shoes, gloves and during winding conditions, eye protection. where practical, use mechanized earth moving equipment. when this type equipment is employed, the following procedures are necessary. keep personnel clear of path of movement and/or away from swing area of machine. No casual personnel are permitted in work area. Properly barricade areas. Personnel working around excavation equipment will wear hardhat, steel toe shoes, hearing protection, gloves and during winding conditions, eye protection. Excavation more than five feet in depth where personnel are required to enter shall be properly sheared or sloped to prevent cave-ins.</i></p> <p><i>c. Use care when picking up logs and brush. Wear leather gloves. Check entire site as thoroughly as practical prior to under brushing.</i></p>

<p><i>Build forms.</i></p>	<p><i>a. Skill saw operations may produce cuts, eye injuries or electrical shock.</i></p> <p><i>b. Use of hand tools such as hammers, sledgehammers and picks may cause hand and foot injuries as well as cuts and abrasions.</i></p> <p><i>c. Handling form material may result in mashed fingers and/or puncture wounds from nails and splinters.</i></p>	<p><i>a. Personnel using skill saws will be thoroughly trained in their use. Skill saws shall be checked for serviceable condition prior to use; i.e., power cords, grounding, guards, and control switches. wear eye protection, hard hats, steel toe shoes. Keep power cords out of water.</i></p> <p><i>b. All hand tools shall be in good repair and used only for their intended purpose. Wear eye protection, hard hats, steel toe shoes and gloves. when striking objects with a hammer, always avoid glancing blows.</i></p> <p><i>c. Use care in handling for materials. If materials require more than one person to move due to size or weight, all lifting or lowering motions must be coordinated between parties involved. Wear gloves.</i></p>
<p><i>Cut and tie rebar</i></p>	<p><i>a. Torch cutting rebar may result in radiant energy burns to the eyes or exposed skin surface.</i></p> <p><i>b. Use of tie wire may produce puncture wounds or scratches.</i></p> <p><i>c. Positioning tied rebar matting in forms may produce back injuries.</i></p>	<p><i>a. Cutting torches shall only be used by personnel who are trained and qualified in their operation. Rebar will be allowed to cool prior to placement in forms or before tying. Wear proper eye protection and leather gloves.</i></p> <p><i>b. Caution shall be used while handling tie wire. Wear leather gloves.</i></p> <p><i>c. Proper lifting methods will be used to lift, handle and place rebar matting in position. Tie rebar in place when practical. Use leather gloves.</i></p>
<p><i>Oil forms</i></p>	<p><i>a. Form oil mixture under pressure could present fire hazard.</i></p> <p><i>b. Excess form oil could cause injury to personnel.</i></p>	<p><i>a. Do not use near open flame.</i></p> <p><i>b. Use when applying form oil to avoid over spray on walking and working surfaces.</i></p>
<p><i>Pour and finish concrete</i></p>	<p><i>a. Movement of concrete truck could cause injury to personnel.</i></p> <p><i>b. Exposure to raw mixed concrete may result in eye injury and/or contact dermatitis.</i></p>	<p><i>a. Mixer truck shall be equipped with a reverse alarm. All movement of mixer trucks shall be under the direction of a flagman trained in use of proper hand signals.</i></p> <p><i>b. Personnel working around concrete chutes shall wear eye protection. All personnel shall avoid exposure of skin surface to raw concrete. Wear gloves and rubber boots.</i></p>

Strip forms	<p>a. Use of hand tools such as hammers, sledgehammers and picks may cause cuts, bruises and abrasions.</p> <p>b. Exposure to splinters, form nails and residual concrete on forms may cause punctures, cuts and abrasions.</p>	<p>a. All hand tools shall be in good condition and used only for their intended purpose. when striking objects with a hammer, always avoid glancing blows. wear eye protection, hard hats, steel toe shoes and gloves.</p> <p>b. Use care when handling used concrete forms. Remove or bend over all exposed nails and clean boards of residual concrete. Wear leather gloves.</p>
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EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>Chainsaw</p> <p>Hardhats</p> <p>Steel toe boots</p> <p>Leather gloves</p> <p>Chaps</p> <p>Eye protection</p> <p>Hearing protection</p> <p>Shovels</p> <p>Picks</p> <p>Posthole diggers</p> <p>Racks</p> <p>Hoes</p> <p>Earth moving/excavation equipment</p> <p>Skill saw</p> <p>Hammers</p> <p>Sledgehammers</p> <p>Cutting torches</p>	<p>Check site prior to under- brushing</p> <p>Where personnel are required to enter Excavation more than five feet in depth; check for proper shearing or sloping to prevent cave-ins.</p>	<p>Chainsaw operator certification</p> <p>Training on proper lifting techniques</p> <p>Training in use of proper flagman hand signals.</p> <p>On the job training</p> <p>Be checked-out by a qualified, experienced person</p> <p>Obtain supervisor's/manager's authorization.</p>

**ACTIVITY HAZARD ANALYSIS**

**ACTIVITY:**  
Construction Site/Project  
Visitations

**ANALYZED BY/DATE:** Bill Clevenger  
09 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
Proceed to site/project	<i>Traffic Hazards</i>	<i>See JHA for "Motor Vehicle Operation".</i>
<i>Wear appropriate clothing.</i>	<i>Injuries.</i>	<i>A hard hat and safety-toed-shoes should be worn on all construction sites/projects. Wear seasonal clothing. Depending on construction operations, safety goggles may be necessary. Safety glasses at all times while on construction sites.</i>
<i>Perform task.</i>	<i>Construction vehicle traffic, blasting.</i>	<i>Be alert to construction vehicles. Avoid walking behind vehicles or in other locations where the vehicle operator can't see you. If blasting operations are in progress, notify blasting supervisor that you are on the site/project. Be aware that radio transmissions can set off blasting charges. See JHA for "Radio Transmission." Notify resident engineer or Corp that you are on site and be accompanied by a site representative.</i>
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<i>Motor vehicle Hardhat Safety toed shoes Seasonal clothing Safety glasses/goggles</i>	<i>"Specialized"</i>	<i>"Specialized"</i>

**ACTIVITY HAZARD ANALYSIS**

**ACTIVITY:** Courtesy  
Dock Repair

**ANALYZED BY/DATE:** Bill Clevenger  
09 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
<i>Foam installation, rail installation.</i>	<i>Power Tools.</i>	<i>Use G.F.I. protection, check all cords, check condition of tool check bits, check wheels, replace or repair any abnormalities.</i>
	<i>Crushing</i>	<i>Insure that dock is uniformly supported above ground with solid mounts.</i>
	<i>Welding</i>	<i>Use proper shield. Do not weld in wet areas, get proper ventilation, and use gloves.</i>
	<i>Fire</i>	<i>Hand approved fire Ext. available.</i>
	<i>Lifting</i>	<i>Use approved back braces and use proper lifting techniques. Get help when necessary.</i>
	<i>Flying particples.</i>	<i>Use goggles when drilling.</i>
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<i>Power tools Welder Welding shield Gloves Fire Extinguisher Safety goggles</i>	<i>Check: cords; tools, bits and wheels; and for G.F.I. protection</i>	<i>Training on proper lifting techniques Training on fire extinguisher use. On the job training Be checked-out by a qualified, experienced person Obtain supervisor's/manager's authorization.</i>

### ACTIVITY HAZARD ANALYSIS

**ACTIVITY:** Cutting  
Trees

**ANALYZED BY/DATE:** Bill Clevenger  
09 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
Airier area near tree	<i>Cutting Tools can get caught in brush, low limbs and vines causing them to fly out of your hand and strike your body</i>	<i>Clear all brush, low limbs, and vines before cutting.</i>
<i>Prepare axe or chain saw for cutting.</i>	<i>Axe head could fly off handle; cold axe blades can fracture causing particles of metal to fly; injury can result when starting a chain saw.</i>	<i>Ensure that the axe head is tight on the handle, and warmed if necessary. Inspect chain saw to make sure all guards and handles are in place, controls function properly and muffler is operative. Wear gloves, goggles, ear protection and chaps while near or operating the chain saw. Wear hard hats and safety boots at all times.</i>
<i>Dress accordingly. Loading and unloading tools and transporting to job site.</i>	<i>Injuries to the eyes, head, or feet can result. Identify the actual hazards. (can also be a part of # 2)</i>	<i>Wear goggles, hardhat, and safety-toed boots.</i>
<i>Carry chain saw or axe to the site. Ensure stable footing.</i>	<i>Injury from saw or axe blade. Could slip and fall resulting in injury.</i>	<i>Chain saw motor should not be running. The bar should be in the forward position when carrying the saw uphill and in the rear position when carrying the saw downhill. Carry axe with your hand close to the head. Point the head backwards with the blade down. Never carry an axe over your shoulder. Place feet in position where there is the least chance of slipping.</i>
<i>Cut or chop tree.</i>	<i>Blade can rebound. Injury can be caused by falling overhead wood when tree is vibrating during cutting. Saw can bind or kick.</i>	<i>Don't chop frozen wood or wood containing hard knots. Wear a hard hat. Cut with caution.</i>
<i>Put axe or chain saw away when not in use.</i>	<i>Injuries could occur to inexperienced users.</i>	<i>Place chain saw in a locked vehicle or other safe place.</i>
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<i>Chainsaw Axe Eye protection Hearing protection Steel toe boots Hardhat Gloves Chaps Snug fitting clothing</i>	<i>Safety inspection of chainsaw; ensure all guards and handles are in place, controls function properly and muffler is operative Check chainsaw for fuel, bar oil, etc Check operation of break Check chain Check axe, ensure head is tight on handle and warmed if necessary</i>	<i>Chainsaw operator certification Training on operating on inclined surfaces On the job training Be checked-out by a qualified, experienced person Obtain supervisor's/manager's authorization.</i>

### ACTIVITY HAZARD ANALYSIS

**ACTIVITY:** Dozer  
Operation

**ANALYZED BY/DATE:** Bill Clevenger  
13 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
<p><i>Check dozer for condition and safety equipment</i></p>	<p><i>a. Inadequate amounts of oil and coolant may result in engine damage.</i></p> <p><i>b. Personnel may be exposed to fall hazards.</i></p> <p><i>c. Stopping on an incline is dangerous.</i></p> <p><i>d. Personnel working in same vicinity.</i></p> <p><i>e. Handhold and steps may be loose or missing causing fall hazards.</i></p> <p><i>f. Seat belts may be deteriorated and/or anchors defective.</i></p> <p><i>g. Rollover protective structures and/or falling object protective structures may be damaged and not capable of support their designed loads.</i></p>	<p><i>a. Check engine oil and coolant levels prior to starting engine.</i></p> <p><i>b. Check steps, foot walker and grab bars for freedom of oil, grease and other substances that would cause slip and fall hazards.</i></p> <p><i>c. Dozers shall have a service brake system and a parking brake system capable of stopping and holding the equipment fully loaded on the grade of operation.</i></p> <p><i>d. Check reverse signal alarm for proper operation. If alarm does not sound automatically at beginning of reverse motion, it does not meet safety standard requirements. Repair or replace as necessary.</i></p> <p><i>e. Check handhold and steps for condition and security of mounting. Any condition that would render the restraint system ineffective will be repaired.</i></p> <p><i>f. Check seat belts for condition and for security of mounting. Any condition that would render the restraint system ineffective will be repaired.</i></p> <p><i>g. Check Roll Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) systems for damage. Have any damage noted repaired prior to use. Field welding on ROPS will only be performed by welders certified by American Welding Society Standards.</i></p>

<p><i>Check haulage equipment for condition</i></p>	<p><i>a. Vehicles driven without proper amounts of oil and coolant may cause engine damage.</i></p> <p><i>b. Vehicles and trailers operated with defective tires may result in accident.</i></p> <p><i>c. Impaired front, rear and side visibility may result in accident.</i></p> <p><i>d. Carbon monoxide or gas fumes in cab.</i></p> <p><i>e. Vehicles driven during hours of darkness without proper lighting may contribute to an accident.</i></p> <p><i>f. Tractors and trailers operated with defective brakes may cause or contribute to an accident.</i></p> <p><i>g. Fifth wheel on tractor and/or trailer connection may be defective or fail to properly mate.</i></p>	<p><i>a. Check engine oil and coolant levels prior to starting the engine.</i></p> <p><i>b. Visually check tires for tread wear, defects and gauge for proper inflation. Also check condition of spare.</i></p> <p><i>c. Check windshield, windows and mirrors for cracks, distortions and cleanliness. Clean as necessary to assure good visibility. Adjust seat and rear view mirrors for driver's optimum visibility and comfort.</i></p> <p><i>d. Visually check exhaust system and then check with engine running. Any defects noted must be reported and repaired.</i></p> <p><i>e. Check vehicle for headlights. Check vehicle and trailer for proper operation of tail, parking, clearance lights and turn signals. Repair all defects noted before proceeding.</i></p> <p><i>f. Bleed condensation from air tanks, start engine and wait for air pressure to build to specified pressure. Check brakes for adequate peddle, sponginess or grabbing. Have all defects repaired prior to use of equipment.</i></p> <p><i>g. Check components of fifth wheel for proper lubrication and condition. Ensure that fifth wheel and pin properly mate and lock secures pin.</i></p>
	<p><i>Hinge points for trailer ramps may be damaged reducing their strength significantly.</i></p> <p><i>Trailer flooring may have broken boards or weak sections.</i></p>	<p><i>Check hinge points for condition. Have repairs made on any defects that would degrade safety of the ramps.</i></p> <p><i>Check trailer floor for condition. Have repairs made to any hole large enough for a person to step through or any sections that are structurally weak.</i></p>
<p><i>Load dozer</i></p>	<p><i>a. When ramps are lowered, feet, hands and back injuries may occur.</i></p> <p><i>b. Ramps not properly positioned may cause dozer.</i></p> <p><i>c. Parking brakes not properly set will allow trailer to move out from under dozer.</i></p> <p><i>d. Dozer blade may obstruct operator's vision during loading.</i></p>	<p><i>a. Wear steel toe shoes and gloves to reduce possibility of foot and hand injury. Keep hands and feet clear when lowering ramps. Exercise care in lifting ramps from trailer to avoid back injury.</i></p> <p><i>b. Adjust ramp width the same as dozer tracks. Use good lifting techniques to avoid back injury.</i></p> <p><i>c. Set parking brakes on tractor.</i></p> <p><i>d. Keep blade low during loading and proceed with caution.</i></p>



<p><i>Securing load</i></p>	<p><i>a. Personnel may be struck with tie down chains.</i>  <i>b. While tightening boomers, personnel may receive injuries to the head, hands and back.</i></p>	<p><i>a. Notify co-workers when chain is to be thrown across tractor.</i>  <i>b. Wear hard hats and gloves. Keep hands clear of boomer handles and stationary objects. Use a cheater pipe to tighten boomers to avoid excessive back strain.</i></p>
<p><i>Fuel tractor and dozer</i></p>	<p><i>Fire may erupt during fueling operations.</i></p>	<p><i>Vehicles and equipment shall be shut down prior to and during fueling operation. Smoking and all other sources of ignition shall be prohibited within 50 feet of fueling operations. Fuel nozzle will not be left unattended during fuel dispensing operations.</i></p>
<p><i>Transport to work site</i></p>	<p><i>a. Vehicle operators and passengers may be ejected from vehicle or thrown into dash or windshield during sudden stops or accident.</i>  <i>b. Vehicles operating at excessive speed are prone to accident.</i>  <i>c. Long, steep down grades may cause loaded tractor-trailer to run out of control.</i>  <i>d. Traffic approaching from rear of vehicle may rear end, sideswipe, cut in front of or attempt to pass with on-coming traffic present.</i>  <i>e. Vehicles may be struck while crossing railroad crossings.</i>  <i>f. Vehicles stopped on roadway or shoulder may be struck by other vehicles.</i>  <i>g. During backing, other vehicles, objects or personnel may be struck.</i></p>	<p><i>Vehicle operators and passengers shall be required to fasten and properly adjust seat belts prior to vehicle being placed in motion and during entire time of travel.</i>  <i>b. Vehicles will be operated at no greater than posted speed. When road and weather conditions dictate, vehicle speed will be reduced for conditions.</i>  <i>c. Drivers will shift down according to traffic instruction signs.</i>  <i>d. Vehicle drivers will continually monitor the rear view mirror for traffic approaching from the rear and be prepared to take defensive measures to avoid accident.</i>  <i>e. Vehicles approaching railroad crossings shall be driven at such a speed to permit stopping before reaching nearest track if necessary and will proceed only if clear.</i>  <i>f. Vehicles shall not be stopped, parked or left standing in such a manner as to endanger the vehicle, other traffic or personnel using or passing that road or area.</i>  <i>g. Check rear for obstructions prior to placing vehicle in reverse and during all reverse motion. When driver does not have full view of area of travel, a spotter will be used.</i></p>
<p><i>Remove dozer tie downs</i></p>	<p><i>a. While loosening tie down boomers, personnel may be struck with handle.</i>  <i>b. Personnel may be struck with tie down chains.</i></p>	<p><i>a. Wear hardhat and gloves. Stand to the side of path of travel of boomer handle as it may abruptly spring open.</i>  <i>b. Notify co-workers when chain is to be thrown across trailer.</i></p>

<p><i>Unload dozer</i></p>	<p><i>a. When ramps are lowered, feet, hands and back injuries may occur.</i></p> <p><i>b. Ramps not properly positioned may cause dozer to upset.</i></p> <p><i>c. Parking brakes not properly set will allow trailer to move out from under dozer.</i></p>	<p><i>a. Wear steel toe shoes and gloves to reduce possibility of foot and hand injury. Keep hands and feet clear when lowering ramps. Exercise care in lifting ramps from trailer to avoid back injury.</i></p> <p><i>b. Adjust ramp width the same as dozer tracks. Use good lifting techniques to avoid back injury.</i></p> <p><i>c. Set parking brakes on tractor.</i></p>
<p><i>Push brush over and into windows</i></p>	<p><i>a. Operator may be struck by limbs while pausing dozer.</i></p> <p><i>b. Engine noise may be excessive causing hearing loss.</i></p> <p><i>c. Operator may be struck by falling debris from dead trees.</i></p> <p><i>d. Fencing material may become entangled in dozer tracks.</i></p> <p><i>e. Persons may be injured when getting on or off dozer in motion.</i></p>	<p><i>a. Operator will wear hardhat, gloves, eye protection and steel toe shoes.</i></p> <p><i>b. Operator will wear hearing protection.</i></p> <p><i>c. Wear hardhat and ensure that FOPS is kept in good condition.</i></p> <p><i>d. Avoid running over old fences with tracks as wire can inflict severe personal injuries when caught up in tracks. In the event wire does become entangled in tracks, stop dozer, set service brake and carefully remove wire.</i></p> <p><i>e. Getting on or off dozer while it is in motion is prohibited.</i></p>
<p><i>Load dozer</i></p>	<p><i>a. When ramps are lowered, feet, hands and back injuries may occur.</i></p> <p><i>b. Ramps not properly positioned may cause dozer to upset.</i></p> <p><i>c. Parking brakes not properly set will allow trailer to move out from under dozer.</i></p> <p><i>d. Dozer blade may obstruct operator's vision during loading.</i></p>	<p><i>a. Wear steel toe shoes and gloves to reduce possibility of foot and hand injury. Keep hands and feet clear when lowering ramps. Exercise care in lifting ramps from trailer to avoid back injury.</i></p> <p><i>b. Adjust ramp with the same as dozer tracks. Use good lifting techniques to avoid back injury.</i></p> <p><i>c. Set parking brakes on tractor.</i></p> <p><i>d. Keep blade low during loading and proceed with caution.</i></p>
<p><i>Secure load</i></p>	<p><i>a. Personnel may be struck with tie down chains.</i></p> <p><i>b. While tightening boomers, personnel may receive injuries to the head, hands and back.</i></p>	<p><i>a. Notify co-workers when chain is to be thrown across trailer.</i></p> <p><i>b. Wear hard hats and gloves. Keep hands clear of boomer handles and stationary objects. Use a cheater pipe to tighten boomers to avoid excessive back strain.</i></p>

<p><i>Transport to maintenance yard</i></p>	<p><i>a. Vehicle operators and passengers may be ejected from vehicle or thrown into dash or windshield during sudden stops or accident.</i></p> <p><i>b. Vehicles operating at excessive speed are prone to accident.</i></p> <p><i>c. Long, steep down grades may cause loaded tractor-trailer to run out of control.</i></p> <p><i>d. Traffic approaching from rear of vehicle may rear end, sideswipe, cut in front of or attempt to pass with on-coming traffic present.</i></p> <p><i>e. Vehicles may be struck while crossing railroad crossings.</i></p> <p><i>f. Vehicles stopped on roadway or shoulder may be struck by other vehicles.</i></p> <p><i>g. During backing, other vehicles, objects or personnel may be struck.</i></p>	<p><i>a. Vehicle operators and passengers shall be required to fasten and properly adjust seat belts prior to vehicle being placed in motion and during entire time of travel.</i></p> <p><i>b. Vehicles will be operated at no greater than posted speed. When road and weather conditions dictate, vehicle speed will be reduced for conditions.</i></p> <p><i>c. Drivers will shift down according to traffic instruction signs.</i></p> <p><i>d. Vehicle drivers will continually monitor the rear view mirror for traffic approaching from the rear and be prepared to take defensive measures to avoid accident.</i></p> <p><i>e. Vehicles approaching railroad crossings shall be driven at such a speed to permit stopping before reaching nearest track if necessary and will proceed only if clear.</i></p> <p><i>f. Vehicles shall not be stopped, parked or left standing in such a manner as to endanger the vehicle, other traffic or personnel using or passing that road or area.</i></p> <p><i>g. Check rear for obstructions prior to placing vehicle in reverse and during all reverse motion. When full view of area of travel is not clear, a spotter will be used.</i></p>
<p><i>Remove dozer tie downs</i></p>	<p><i>a. While loosening tie down boomers, personnel may be struck with handle.</i></p> <p><i>b. Personnel may be struck with tie down chains.</i></p>	<p><i>a. Wear hardhat and gloves. Stand to the side of path of travel of boomer handle as it may abruptly spring open.</i></p> <p><i>b. Notify co-workers when chain is to be thrown across trailer.</i></p>
<p><i>Unload dozer and park</i></p>	<p><i>a. When ramps are lowered, feet, hands and back injuries may occur.</i></p> <p><i>b. Ramps not properly positioned may cause dozer to upset.</i></p> <p><i>c. Parking brakes not properly set will allow trailer to move out from under dozer.</i></p> <p><i>d. Casual personnel may be injured by dozer blade if left in the raised position.</i></p>	<p><i>a. Wear steel toe shoes and gloves to reduce possibility of foot and hand injury. Keep hands and feet clear when lowering ramps. Exercise care in lifting ramps from trailer to avoid back injury.</i></p> <p><i>b. Adjust ramp width the same as dozer tracks. Use good lifting techniques to avoid back injury.</i></p> <p><i>c. Set parking brakes on tractor.</i></p> <p><i>d. Dozer blade shall either be fully lowered or blocked when not in use.</i></p>

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<i>Dozer  Haulage equipment  Eye protection  Hearing protection  Steel toe boots  Hardhat  Gloves</i>	<i>Check dozer and haulage equipment for condition and safety equipment</i>	<i>Training on operating dozer  Defensive driving  On the job training  Training on fire extinguisher use  Be checked-out by a qualified, experienced person  Obtain supervisor's/manager's authorization.</i>

### ACTIVITY HAZARD ANALYSIS

ACTIVITY: Drill Press Operation

ANALYZED BY/DATE: Bill Clevenger  
17 April 2003

REVIEWED BY/DATE:

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
<i>Check drill press for serviceability</i>	<p>a. Electrical shock from faulty power cord or plug.</p> <p>b. Drive belts or pulleys could come loose.</p>	<p>a. Unplug power plug and check power cord for frayed or damaged wires. Check plug to insure that the ground pin is present and in good repair.</p> <p>b. Drive belts and pulleys are to be in place at all times.</p>
<i>Set up drill press for use</i>	<p>a. Improper size, type, defective, twisted, bent, burred shank, or dull bit may cause bit to break during drilling operations.</p> <p>b. Chuck key or drift in chuck may become flying projectile when power is turned on.</p> <p>c. Insecurely clamped work may strike operator or others.</p> <p>d. Large work items may slip or bind drill bit.</p>	<p>a. Select and use drill bits that are sharp and free from defects and are designed for material to be drilled. Use shortest bit needed. Do not grind down drill bit or reamer shanks to fit smaller chucks; when oversized drills are needed, purchase them with the desired shank diameter to fit the chuck.</p> <p>b. Remove chuck key or drift immediately after use. Be sure bit is securely locked in chuck.</p> <p>c. When practical, use clamps or a vise to secure workplace to keep it from rotating with the drill bit. <u>C-clamps or other clamping devices should not be used when the use of a drill press vise is possible.</u> Adjust table to proper height or location.</p> <p>d. Large items should be supported and level to assure that the drilling apparatus is perpendicular to the stock.</p>
<i>Plug in power cord</i>	<i>Drill start running if switch has been left in "on" position.</i>	<i>Check switch to insure it is in "off" position prior to connecting power cord.</i>
<i>Lay out material</i>	<i>Heavy objects to be drilled may be dropped on feet or placed on hands and fingers</i>	<i>Wear steel-toe shoes. While handling materials for layout and while securing them in clamps, wear gloves.</i>
<i>Drill material</i>	<p>a. Loose items may be caught up in drill bit, chuck, or spindle.</p> <p>b. Contact with the drill bit or spindle will cause personal injury.</p> <p>c. Flying metal chips may be generated during drilling operations (possible eye injuries).</p> <p>d. noise may damage hearing.</p> <p>e. Drilling operation may cause excessive heat from friction.</p>	<p>a. Do not wear loose clothing, jewelry, or <u>gloves</u> during drilling operations. Keep long hair tied up or in a net to avoid it being caught in moving parts.</p> <p>b. Keep hands and arms clear of these while drill is operating. Make sure that all guards are kept in place. For large diameter holes, drill a pilot hole first.</p> <p>c. Wear proper eye protection.</p> <p>d. Wear hearing protection.</p> <p>e. Standard pipe cutting oil should be used when appropriate.</p>

<i>Turn off power and remove drilled material</i>	<i>Heavy objects may be dropped on feet or placed on hands or fingers</i>	<i>Wear steel-toe shoes. While handling materials, wear gloves.</i>
<i>Clean up debris</i>	<p><i>a. Metal shavings may become embedded in hands or fingers and oil may cause a slip hazard.</i></p> <p><i>b. Metal chips and slivers may accumulate and remain on the bit.</i></p> <p><i>c. Drilling operation by-products may be flammable.</i></p>	<p><i>a. Maintain area free of oil and metal shavings and clean area after each use. Do not sweep chips or metal filings from table by hand. Use a brush and wear gloves.</i></p> <p><i>b. Stop drilling operations and remove accumulations with a brush, not by hand.</i></p> <p><i>c. Smoking is not permitted in the area.</i></p>
<b>EQUIPMENT TO BE USED</b>	<b>INSPECTION REQUIREMENTS</b>	<b>TRAINING REQUIREMENTS</b>
<i>Drill press Bits Chuck key Clamps Vise Brush Gloves Steel toe boots Eye protection Hearing protection</i>	<i>Check plug for presents and condition of ground pin Check bits for condition and proper use Insure chuck key is removed</i>	<i>On the job training Be checked-out by a qualified, experienced person Obtain supervisor's/manager's authorization.</i>

### ACTIVITY HAZARD ANALYSIS

**ACTIVITY:** Dump Truck  
Operation

**ANALYZED BY/DATE:** Bill Clevenger  
12 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
<p><i>Check vehicle for condition</i></p>	<p><i>a. Low oil and coolant may result in engine damage.</i>  <i>b. Vehicles driven with defective tires have poor traction.</i>  <i>c. Loose lug nut may allow wheel to come off vehicle.</i>  <i>d. Impaired vision to the front, rear and side may cause accidents.</i>  <i>e. Defective exhaust system may induce carbon monoxide into cab area.</i>  <i>f. Vehicles driven during hours of darkness or poor visibility without proper lighting may cause an accident.</i>  <i>g. Vehicles driven with defective brakes may cause an accident.</i>  <i>h. Rocks could be thrown into vehicles behind truck.</i>  <i>i. Heat generated by dragging brakes or other sources may cause vehicle fire.</i></p>	<p><i>a. Check engine oil and coolant levels prior to starting engine.</i>  <i>b. Visually check tires for tread wear, defects and inflation. Inflate as necessary. Also check condition of spare.</i>  <i>c. Note lug nuts for apparent looseness. Discrepancies must be reported and corrected prior to departure.</i>  <i>d. Check windshield, windows and mirrors for cracks, distortions and cleanliness. Clean or have repaired as necessary to maintain good visibility. Adjust seat and rear view mirrors for optimum visibility and comfort.</i>  <i>e. Visually check exhaust system. Any defects noted or if there is any evidence that exhaust fumes are entering the cab it must be reported and repaired immediately.</i>  <i>f. Check vehicle headlights, taillights, turn signals, parking and clearance lights for proper operation. Have repaired if necessary.</i>  <i>g. Check brakes for adequate peddle, sponginess or grabbing. Have all defects corrected prior to use of vehicle. Also check parking brake for proper operation.</i>  <i>h. Check mud flaps for condition and replace as needed.</i>  <i>i. Check fire extinguisher to ensure it is serviceable and ready for use if needed.</i></p>
<p><i>Fuel vehicle</i></p>	<p><i>Fire may erupt during fueling operations.</i></p>	<p><i>Vehicle shall be shut down prior to and during fueling operations. Smoking and all other sources of ignition shall be prohibited within 50 feet of fueling operations. Fuel nozzle will not be left unattended during fuel dispensing operations.</i></p>

<p><i>Operate dump truck</i></p>	<p><i>a. Operators may be ejected from vehicle or thrown into dash or windshield in event of accident or sudden stop.</i></p> <p><i>b. Vehicles operated at excessive speed are more likely to have accident.</i></p> <p><i>c. During backing, other vehicles, objects or personnel may be struck.</i></p> <p><i>d. Traffic approaching from the rear may strike vehicle, sideswipe while passing, cut in front of or attempt to pass with on-coming traffic present.</i></p> <p><i>e. Dump truck may be struck while crossing railroad crossings.</i></p> <p><i>f. Vehicles stopped on roadway or shoulder may be struck by other vehicles.</i></p>	<p><i>a. Operators and passengers shall be required to fasten and properly adjust seat belts prior to vehicle being put into motion and during entire time of travel.</i></p> <p><i>b. Vehicles will not be operated at speeds greater than posted limits. When road and weather conditions dictate, speed will be reduced for conditions.</i></p> <p><i>c. Check rear for obstructions prior to placing vehicle in reverse motion and during all reverse motion. When operator does not have full view of area of travel, a spotter will be used. All dump trucks shall be equipped with a reverse signal alarm. Alarm shall operate automatically upon commencement of backward motion.</i></p> <p><i>d. Operators will continually monitor the rear view mirror for traffic approaching from the rear and be prepared to make defensive maneuvers to avoid accident.</i></p> <p><i>e. When approaching railroad crossings, operators will drive at such a speed to permit stopping before reaching the nearest track and then will proceed only if clear.</i></p> <p><i>f. Vehicles shall not be stopped, parked or left standing in such a manner as to endanger the vehicle, other traffic or personnel using or passing that road area. Emergency markers will be properly set up in the event of emergency stops.</i></p>
<p><i>Load dump truck</i></p>	<p><i>a. Operators of vehicles could be injured while truck is being loaded from suspended or overhead equipment.</i></p> <p><i>b. Rocks or material may fall from truck bed while being transported producing traffic hazards.</i></p>	<p><i>a. Operators shall leave the cab while truck is being loaded from suspended or overhead loading equipment or methods unless the cab is adequately protected. Wear hard hats and steel toe shoes.</i></p> <p><i>b. Truck will not be loaded in such a manner to allow materials to fall from bed. "Headache" racks, sides and ends will be cleared of materials and aggregate that could present hazards to other traffic.</i></p>
<p><i>Dump load</i></p>	<p><i>a. Operator may be injured while tripping tailgate for unloading.</i></p> <p><i>b. Truck may become top heavy if loaded bed is raised too fast or if raised on too severe incline.</i></p>	<p><i>b. Trip handles for tailgates shall be arranged to keep the operator in the clear. Operator shall stand in the clear when releasing tailgate trip handle.</i></p> <p><i>b. Raise bed slowly to allow load to shift to rear of bed to avoid an unbalanced condition. Do not off load on an incline that presents a hazard.</i></p>



<i>Park dump truck</i>	<i>Unattended truck may roll into other vehicles or objects</i>	<i>Truck shall not be left unattended until after the motor has been shut off, the key removed, parking brake set and gear engaged in low, reverse or park. If stopped on a hill or grade, front wheels will be turned into the curb or the wheels securely chocked.</i>

<b>EQUIPMENT TO BE USED</b>	<b>INSPECTION REQUIREMENTS</b>	<b>TRAINING REQUIREMENTS</b>
<i>Dump truck Hardhat Steel toe boots</i>	<i>Check dump truck for condition and safety equipment</i>	<i>Training on operating dump truck Defensive driving On the job training Training on fire extinguisher use Be checked-out by a qualified, experienced person Obtain supervisor's/manager's authorization</i>

### ACTIVITY HAZARD ANALYSIS

**ACTIVITY:** Electric Cable Repair

**ANALYZED BY/DATE:** Bill Clevenger  
13 April 2002

**REVIEWED BY/DATE:**

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
<i>Kill main breaker, tag or lockout</i>	<p><i>a. Short circuits in main breaker box may cause electrical shock.</i></p> <p><i>b. Stinging insects may have built nest in or around breaker box causing potential sting hazard.</i></p> <p><i>c. Breaker box main handle may be hard to throw due to corrosion and/or handle may have film of oil or other substance on it causing hand to slip.</i></p> <p><i>d. Slippery surface and/or debris around main breaker may cause slip and trip hazard.</i></p>	<p><i>a. Use lineman's gloves and insulated tool to trip main breaker. Using tester, determine if any power remains on box. Tag main breaker before proceeding.</i></p> <p><i>b. Using pest control spray, remove all stinging insects.</i></p> <p><i>c. Make sure handle is not coated with any substance and check gloves to make sure they are free of grease or oil. Firmly grip handle and throw main breaker.</i></p> <p><i>d. Use good housekeeping practices.</i></p>
<i>Dig up damaged cable.</i>	<i>Refer to JSA No. 1.</i>	<i>Refer to JSA No. 1.</i>
<i>Repair damaged power line</i>	<p><i>a. Personnel may have to enter trench to repair damaged or defective power line being subjected to possible "cave-ins".</i></p> <p><i>b. Exposed broken power line may still be "hot" causing electrical shock.</i></p> <p><i>c. Exposed broken power line may cause injuries to hands, face, and arms.</i></p> <p><i>d. Windy conditions may cause loose dirt and debris to become airborne causing eye injuries.</i></p> <p><i>e. Loose dirt around trench may cause slip and trip hazards.</i></p> <p><i>f. Use of knife to trim insulation on cable may result in cut to hand or arm.</i></p>	<p><i>a. Excavations more than 5 feet in depth where personnel are required to enter shall be properly shored or sloped to prevent "cave-ins". Another outside the trench will monitor person in trench.</i></p> <p><i>b. Test circuit to assure that it is de-energized.</i></p> <p><i>c. Wear gloves and keep sleeves rolled down. Be alert for sharp ends of wire.</i></p> <p><i>d. Wear eye protection during windy conditions.</i></p> <p><i>e. Personnel should be alert to slip and trip conditions.</i></p> <p><i>f. Exercise care in use of knife or sharp instrument. Cut with blade pointed away from body.</i></p>
<i>Restore power, test circuit</i>	<p><i>a. Short circuits in main breaker box may cause electrical shock.</i></p> <p><i>b. Breaker box handle may be hard to close causing possible hand injuries.</i></p> <p><i>c. Electrical shorts could still exist in repaired power line.</i></p>	<p><i>a. Use lineman's gloves and insulated tools to trip main breaker. Check box with tester to determine if any shorts exist.</i></p> <p><i>b. Firmly grip handle and close breaker.</i></p> <p><i>c. Use extreme care in testing power line for shorts.</i></p>
<i>Backfill trench</i>	<p><i>a. Power line could be damaged during backfill operation.</i></p> <p><i>b. Utilization of heavy equipment in area could cause injury to personnel.</i></p>	<p><i>a. Select backfill should be used in immediate vicinity of repaired power line.</i></p> <p><i>b. Keep all personnel away from swing area of backhoe as well as out of path of travel. Backhoe will be equipped with a suitable backup alarm. Keep all casual personnel away from area where backhoe is operating.</i></p>

<i>Remove barricades and tag</i>	<i>None</i>	<i>None</i>

<b>EQUIPMENT TO BE USED</b>	<b>INSPECTION REQUIREMENTS</b>	<b>TRAINING REQUIREMENTS</b>
<i>Lineman's gloves            Circuit tester            Insulated tools            Eye protection            Knife or sharp instrument            Backhoe</i>	<i>Insure gloves are free of grease and oil            Insure proper shoring or sloping for excavations more than five feet deep that personnel will enter</i>	<i>Lockout/tagout training            Trained to work with electricity            On the job training            Be checked-out by a qualified, experienced person            Obtain supervisor's/manager's authorization</i>