Woodlands
NORTH

Safe Work Practices Manual

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BACKGROUND INFORMATION

Safe work practices are written methods outlining how to perform a task with minimum risk to a worker's health and safety. At Woodlands North (*Woodlands*), Task Hazard Assessments are conducted annually, or whenever a new job task is introduced to the company. The hazards are identified by staff from the junior to the project manager level due to perception differences regarding the concept of a hazard. Furthermore, regular changes to job equipment and technology influence the potential for harm. Hazard identification, hazard control and safe work practice implementation are very important processes that continue to improve the company's health and safety program while aiding in prudent decision-making in the field and in the office.

This manual consists of seven main chapters:

1. **Safe Work Practices for General Field Work**
2. **Safe Work Practices for Office/Shop/Yard Work**
3. **Safe Work Practices for Powered Mobile Equipment**
4. Safe Work Practices for Inventory
5. Safe Work Practices for Ecology
6. Safe Work Practices for Silviculture
7. Safe Work Practices for Reclamation

Seasoned employees are required to annually review the first three chapters of this manual as well as the chapter specific for the Business Unit they work in. New workers are required to review the first three chapters of this manual as well as the chapter for the Business Unit they will be conducting work in **before work commences**.

CHAPTER ONE: GENERAL FIELD WORK

This chapter was developed in response to the Hazard Assessments of *tasks relevant to all field work* conducted for *Woodlands*. These include tasks that are consistent across all field based projects regardless of Business Unit. Each task implies a number of subtasks for which hazards, controls and safe work practices are identified.

A list of general tasks associated with all *Woodlands* field operations are listed below. Some tasks are common, others are rare; regardless, one must be prepared to conduct the task in the most healthy and safe manner.

- Survival preparedness
- Journey management
- Working in extreme weather conditions
- Working near wildlife
- Working in conditions with potential infectious diseases
- Working with allergies, medical conditions and varying levels of physical fitness
- Working with chemical, biological hazards and other harmful substances
- Managing fatigue
- Working in remote industrial work sites
- Mounting / dismounting equipment
- Working with and carrying field equipment
- Working or walking on uneven ground
- Working near watercourses
- Accessing work sites by helicopter
- Managing a tent camp
- Operation of firearms / working during hunting season
- Preventing and fighting remote fires
- Preventing and removing remote environmental spills

Herein details the task hazards, methods of hazard control, safe work practices and educational programs for the general field work tasks mentioned above.

1. SURVIVAL PREPAREDNESS - REMOTE FIELD WORK

Concerns: *Lack of communication with other crews*

Requiring rescue due to injury

Requiring rescue due to vehicle/ATV failure

Spending the night in the field

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Company Communication Procedures - see Health and Safety Manual Section 3
- Survival training, first aid training, emergency response training, SAFESTART training
- Company Inspections and Maintenance Policy and Procedures- See Health and Safety Manual Section 2
- Daily hazard assessment and control meetings- Tailgate Safety Meetings
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Company Health and Safety Responsibilities and Accountability Policy – See Health and Safety Manual Section 2
- Working Alone Policy - See Health and Safety Manual Section 2
- Journey Management Program

Personal Protective Equipment (PPE)

- Radios, satellite phone, SPOT, IN-Reach, cell booster
- Personal first aid kit, truck first aid kit
- Maps and/or aerial photographs of study area
- Mandatory personal equipment: high visibility vests, compass, scale ruler, pen/pencil, GPS, rain gear, knife, lighter, cell phone
- Overnight kit (see Section 13.2 for full content list)
- Company bear mace, bangers, air horn
- Emergency and roadside equipment

1.1. SAFE WORK PRACTICES FOR SURVIVAL PREPAREDNESS

- Adhere to all *Woodlands* and Client Policies, Procedures and utilize PPE, and other safety equipment provided to you.
- Always prepare for an overnight stay. Bring extra food, water, clothes and mandatory personal survival essentials when working remotely as adverse weather or other factors may impair your travel back.
- Dress to the forecasted weather conditions but always be prepared for changes.

- Be aware of your surroundings during travel; know how to get to the work site and back without your GPS unit. Do not rely on technology to get you out of trouble.
- Clearly communicate to the project Supervisor your planned route and course of action for the day. Acknowledge that emergency response time will be delayed the farther away you are from help.
- Communicate with other crew members in the field frequently throughout the day.
- Double and triple check that all emergency and personal protective gear is packed before leaving the office.
- Discuss work site remoteness with your Supervisor to determine if a company overnight bag should be brought to the field for that day. Leave the overnight bag on your ATV or at the helicopter drop off/pickup point if applicable.

1.2. SAFE WORK PRACTICES FOR JOURNEY MANAGEMENT

Journey Management Program

Woodlands will provide in-house training to all workers for safe journey management as travelling to remote field work locations is a regular occurrence for the services we provide to our Clients. *Woodlands* defines remote or out of town work as project sites that are too far away from the home base office for safe and efficient daily travel, and this work requires employees to stay in hotels or other arranged accommodations to ensure adequate rest while away from home.

A Journey Management Plan (form available on the company shared drive and staff form hubs) will be documented and reviewed with travelers and Supervisors prior to departure. A copy must be readily available at both *Woodlands* facilities (posted on the safety boards) and not removed until safe return has been confirmed. A copy of the Journey Management Plan must also accompany the traveler (digital or paper). The Journey Management Plan includes:

- Driver(s) name(s), passenger names and contact information
- Vehicle unit number
- Confirmation of pre-trip vehicle inspection
- Purpose of travel (project name and Client information)
- Journey details (origin, destination, departure date, estimated time of travel, description of route to and from, expected road and weather conditions)
- Communication plan (equipment and check in procedures)

Under the Journey Management Program, the following safe work practices are applied for company related remote journeys:

- Long distance travel to and from remote work sites should only be taken when necessary and safe to do so. Determine if applicable work tasks can be conducted over the phone or via email etc.

- Try to complete multiple tasks in a single trip to reduce the amount of driving. This will improve safety and efficiency
- Travel should be completed during daylight hours and speed reduced if traveling during dawn/dusk hours to avoid wildlife encounters
- Driving long distances through adverse weather conditions should also be avoided when possible. Before leaving on an out of town trip ensure road and weather conditions are safe (www.ama.ab.ca/road-reports)
- It is imperative that persons traveling to an unfamiliar site obtain adequate directions. This can be a map, shapefile or clear concise written directions- preferably all three. It is illegal to read directions from a smartphone while driving. Have your passenger help with directions. If driving alone, pull over when in need of referring to a map or a GPS device
- Aside from the travelers and their Supervisor, at least one other person (usually the HSE Coordinator) who is not involved in the journey must be aware of the crew's trip itinerary (destination, arrival expectations, return plans)
- Drivers must always carry reliable methods of communication in case of an emergency. Cell phones must be operable and well charged prior to the journey. Cell boosters are available for remote work sites with poor cell coverage. Each crew must have a SPOT/Inreach. Additional communication equipment available to Workers are satellite phone, hand held radios and truck radios.
- Rest breaks are to be frequently taken during long journeys to prevent fatigue. Switch driving duties with your partner if needed. If travelling alone, pull over for fresh air
- Vehicle inspections must be conducted prior to journey to ensure all items on the form checklist are accounted for including truck emergency and roadside kits and equipment (booster cables, first aid kits, warning triangles, fire extinguisher, tow ropes, spill kits, spare tire tools etc)

2. WORKING IN EXTREME WEATHER CONDITIONS

Concerns: *Dehydration*

Heat cramps /heat exhaustion/ heat stroke

Hypothermia/ hyperthermia, frostbite

Lightning strike

Hazard Priority Rating: HIGH

Hazard Control: Administrative

- Extreme Weather Education Program
- Company Extreme Weather Stop Work Protocol
- Enforcement of the buddy system

- Survival training, first aid training, emergency response training

Personal Protective Equipment (PPE)

- First aid kit
- Hard hat (broad brimmed)

2.1. HEAT EMERGENCIES EDUCATION PROGRAM

The risks of heat emergencies/hyperthermia are increased with:

- Working in warm to hot environments
- Individuals who have had heat related illness in the past
- Insufficient fluid intake while in extreme conditions
- Inappropriate clothing (does not allow air circulation)
- Over-exertion

Signs and Symptoms of Heat Cramps:

- Severe muscle contractions, usually in the legs and the abdomen
- Usually normal body temperature
- Moist skin

First Aid for Heat Cramps:

- Cooling the body (shade, rest, liquids)
- Drink cool liquids
- Lightly stretch the muscle and gently massage area

When the cramps stop and if no other signs and symptoms of illness are present, the person can usually become active again but they should watch carefully for signs of heat exhaustion and drink plenty of fluids. If these symptoms arise, the crew should plan to leave the field.

Signs and Symptoms of Heat Exhaustion:

- Normal or slightly elevated body temperature
- Cool, moist, pale, or red skin
- Headache
- Nausea
- Dizziness and weakness
- Exhaustion

First Aid for Heat Exhaustion:
Heat exhaustion, if treated in the early stages is usually reversible.

- Cooling the body (move to a cool, shaded area and loosen tight clothing, remove perspiration soaked cloths - pour cool water on skin and fan body to increase evaporation)
- Drink cool liquids slowly
- Rest

Do not return to work during the heat of the day and monitor the condition in case it worsens.

Signs and Symptoms of Heat Stroke:

- High body temperature, often as high as 41°C (106°F)
- Red, hot, dry skin
- Irritable, bizarre, or combative behavior
- Progressive loss of consciousness
- Rapid, weak pulse becoming irregular (pulse may be strong at first but weakens as circulatory system begins to fail)
- Rapid breathing
- If an individual with Heat Stroke is not treated promptly the casualty could die!

First Aid for Heat Stroke:
Heat stroke is very serious and EMS should be called immediately. Treatment until they arrive is:

- Cool body any way possible (sponge body with tepid or cool water and fan to increase evaporation).
- Use ice packs if available on groin, under armpits and on neck.
- Monitor ABC's (airways, breathing, & circulation).
- DO NOT use rubbing alcohol on casualty as it constricts skin pores and prevents heat loss.
- Be prepared to administer rescue breathing or CPR because a person with heat stroke may stop breathing or have a heart attack.

2.2. SAFE WORK PRACTICES FOR EXPOSURE TO WARM/HOT CONDITIONS

- Obey *Woodlands* Extreme Weather Stop Work Protocol
- Always prepare for the worst possible conditions when working in the field. Check the forecast daily. Your Daily Tailgate Safety Meeting Form should reflect that you recognized extreme heat as a potential work site hazard and that the established controls were at the forefront of your mind.
- Use the knowledge gained from your training.

- Always ensure you have suitable (loose fitting, light in colour) and additional clothing with you; wear layers so that you can adjust to the weather conditions as temperatures rise and fall.
- Utilize PPE.
- Acknowledge that some forms of PPE such as ATV helmets do not permit proper ventilation. When travelling long distances by ATV be sure to take rest stops in the shade to break up the long, hot journey.
- Pack sufficient food & water for the day, plus extra in case of an emergency- **there are no suitable places in Alberta to replenish your water supply in the field.**
- Take water breaks often in the shade to reduce fatigue, muscle strain and overexertion.
- Monitor other crewmembers (your buddy) and yourself for possible symptoms. Report symptoms immediately to Management. It is your duty!
- Keep hydrated & eat high energy foods at regular intervals. Drink water before you even feel thirsty. Healthy foods such as fruits and veggies have high water content and provide good salt balance.
- Consider wearing polarized sunglasses to avoid eye strain from the sun. Use and reapply sunscreen often.
- Avoid use of caffeine and tabaco through the day as caffeine can speed up dehydration (often contributing to excessive sweating) and smoking constricts blood vessels and impairs the body's ability to properly acclimate to heat.

2.3. COLD EMERGENCIES EDUCATION PROGRAM

The risks of cold related emergencies are increased with:

- Low temperature and strong winds
- Weakened condition due to lack of food, fatigue, or use of alcohol
- Wet clothing
- Clothing that does not retain body heat (e.g. cotton)
- Exposure to cold for a long period of time

Localized cooling of the body can be categorized as:

- Frostnip – surface of the skin e.g. ears, nose, cheeks
- Superficial Frostbite – affects entire thickness of skin
- Deep Frostbite – affects entire thickness of skin and underlying tissues such as fatty tissues, muscle and tendons

Frostbite is the freezing of the body tissue and has a range of severity. It is usually restricted to the extremities (nose, ears, fingers, toes, etc.) or to areas like the heels, cheeks and chin. Frostbite occurs when the blood flow slows because of the cold, and

areas of skin actually freeze. Continued exposure to the cold and freezing can destroy the tissue involved. After experiencing frostbite, subsequent tolerance to the cold in the injured area can be substantially reduced.

Signs and Symptoms of Frostnip:

- Skin shows no sign of tissue damage
- Skin is pale but painless
- Feeling of numbness or tingling in affected part until warming begins

Signs and Symptoms of Superficial Frostbite:

- White waxy skin where freezing occurs
- Skin that is firm to touch
- Casualty may complain of pain in the early stages followed by numbness in the affected area
- Pain upon re-warming
- Swelling in the area
- Signs of tissue damage

Signs and Symptoms of Deep Frostbite:

- White waxy skin that turns greyish blue
- Skin is hard and cold
- Casualty may complain of lack of feeling in the affected area
- Severe pain upon re-warming
- Tissue damage is very evident during subsequent days ex: deep blood-filled blisters and hard black scabs

First Aid for Frostnip and Superficial Frostbite:
Frostbite and burns are similar both in damage and healing. Treatment consists of:

- Prevent further heat loss (cover affected area with warm material)
- Gradually re-warm the affected area using body heat
- Cup hand over area
- Put fingers into the armpits
- Remove boots, ensure that feet are dry and warm using your hands
- Seek medical aid as soon as possible
- Do not apply direct heat

First Aid for Deep Frostbite:

- Treat frozen part gently to avoid damage
- Prevent further heat loss
- Do not rub the frozen area

- Do not thaw
- Obtain medical help immediately

Never, Never, Never

- Rub the affected part with snow!
- Rub it at all - this will further damage the skin!
- Blow into a glove to warm your fingers - the condensation will wet the gloves and make you colder!
- Smoke - this constricts the blood vessels further!

Thawing of a frozen body part should only be attempted when:

1. Medical help is not available
2. Casualty is in a warm environment
3. There is no danger of refreezing

If thawing is required:
Re-warm the frozen area in warm water at 40 °C until skin color ceases to improve (warmer temperatures will cause pain).

Signs of Hypothermia:
As your body temperature drops below 35 °C (95 f) you may see the following changes as your condition becomes more severe:

SIGNS	MILD	MODERATE	SEVERE
Pulse	Normal	Slow and Weak	Weak, Irregular, or Absent
Breathing	Normal	Slow and Shallow	Slow, Absent
Appearance	Shivering, Slurred Speech	Violent Shivering, Clumsy, and Stumbles	Shivering Stopped
Mental State	Conscious, Withdrawn	Confused, Sleepy, Irrational	Unconscious

Normal body temperature is 37°C. As your internal temperature falls below this level, you begin to function less effectively. If your internal temperature remains low for an extended period of time, you can sustain serious injury. Hypothermia is the condition you experience as your body's internal temperature falls – your body loses more heat than it can produce.

Water conducts heat away from the body 32 times faster than air! Any time that moisture comes into contact with your body, whether by rain, wet clothing, or perspiration, the body loses heat at a rapid rate.

The body's initial reaction to cold is to prevent further heat loss. Blood vessels in the skin and extremities (fingers, toes, ears and nose) become constricted. This reduces the flow of blood away from the core of your body. As a result, you get numbness in your fingertips and a loss of the sense of touch. The muscles get weaker and your coordination is reduced. Your body is beginning to sacrifice its extremities in an effort to maintain the temperature of the vital organs in the core.

The body's second reaction is to increase heat production by shivering. Unfortunately, shivering uses a lot of energy. This can contribute to a further worsening of the condition of the body if the cold persists. When the body runs out of energy, the shivering stops and the core temperature falls rapidly. External heat must be added to re-warm the body.

Once the body's core starts to cool, the activity of the brain, heart and lungs is affected. If the body gets cold enough, these systems can fail.

First Aid for Hypothermia:

- Prevent further heat loss and seek medical attention
- Handle casualty gently and minimize movement
- Get out of the wind and into the best shelter you can find
- Cover head and try to insulate the body from the ground
- Remove casualty from cold
- Remove wet clothing and place casualty under warm covers (sleeping bags, jackets)
- If using external heat be very careful not to burn numb extremities
- Provide warm sweet drink (not coffee or alcohol)
- Monitor breathing and pulse
- If casualty becomes unconscious monitor closely and handle gently. The slightest rough handling may cause heart to fail. Be prepared to give CPR if heart does stop (dangerous situation)

Signs and Symptoms of Snowblindness:
Most often snowblindness results from excess exposure to the eyes of light reflecting off of the snow; particularly on bright, overcast days where there is little shadow.

- Feels like grit in the eyes
- Eyes become hot and sticky, begin to water
- Vision can become blurred

Prevention of Snowblindness:

- Wear polarized or amber glasses

- Blacken nose and cheekbones to reduce glare
- Make a pair of slit glasses if possible
- If you feel the symptoms, but have no glasses, keep eyes focused on a dark object in front of you
- Avoid looking at bright, snow-covered objects

Treatment of Snowblindness:

- Get out of the light
- Apply cold compresses
- Remain in the dark with eyes shielded as long as possible
- Seek medical advice if symptoms persist

Treatment of Skin Stuck to Cold Metal:

- Warm the stuck skin gently to remove it from the frozen metal
- Apply heat around stuck part with your hand until it is free
- If possible, gently pour warm (not hot) water over the part to remove
- Do not pull the stuck part off as this will tear the skin causing unnecessary damage and this will worsen the situation

2.4. SAFE WORK PRACTICES FOR WORKING IN COLD CONDITIONS

- Obey *Woodlands* Extreme Weather Stop Work Protocol
- Use the knowledge gained from your training, and always bring your mandatory personal equipment so that you can build a fire at any time.
- Always prepare for the worst possible conditions when working in the winter months. Check the forecast daily. Your Daily Tailgate Safety Meeting Form should reflect that you recognized extreme cold as a potential work site hazard and that the established controls were at the forefront of your mind.
- Always ensure you have suitable and additional clothing with you; wear layers so that you can adjust to the weather conditions as temperatures rise and fall
- Keep hydrated and eat high energy foods at regular intervals. Always pack extra in case of emergency
- Monitor other crew members (your buddy) and yourself for possible symptoms. Report symptoms immediately to Management. It is your duty!
- On sunny winter days consider wearing polarized sunglasses and sunscreen to prevent eye strain, snowblindness and sunburn
- Avoid rushing; sweating could lead to hypothermia. Regulate your body temperature with the appropriate level of exertion

- Communicate with other crew members frequently & monitor for changes in skin colour
- Double check that all emergency and PPE gear is packed before leaving the office
- Avoid tobacco or alcohol use as they decrease circulation

2.5. WOODLANDS NORTH EXTREME WEATHER STOP WORK PROTOCOL

Due to the risks involved with cold weather conditions, if the ambient temperature is (or forecasted to be) -30° C or colder, crews will not be involved in field work for that day. Crew members and Supervisors will keep abreast of forecasted weather conditions and plan for indoor work. This protocol is flexible; work tasks that require long sleds rides in the cold wind or little movement throughout the day should consider indoor work when the temperature is even less cold than -30° C. A worker can remain quite comfortable winter tracking at -30° C with appropriate field wear, however it is hard to stay warm measuring trees in a plot at that temperature.

Similarly, working in extreme hot weather poses dangerous risks to personal health and safety. *Woodlands* has adopted Occupational Health and Safety recommendations for heat stress exposure limits for workers expending moderate physical exertion (detailed in American Conference of Governmental Industrial Hygienists 2013 TLVs® and BEIs® publication). Crews will not be involved in field work when ambient temperature is +31.5° C or warmer or the humidex (aka "Feels Like" on The Weather Network) is warmer than 45° C. Common sense must be exercised. Discuss work tasks and mode of access with your Supervisor for the days that are expected to be very cold or hot and plan accordingly.

2.6. EXPOSURE TO LIGHTNING AND HEAVY WIND CONDITIONS

Lightning is generated in electrically charged storm systems. A lightning flash can carry 30-300 thousand amps at 15-125 million volts. A lightning bolt is five times hotter than the surface of the sun and sends shockwaves beaming out in all directions. Every year lightning kills approximately 10 Canadians and injures 100-150 others (Environment Canada, 2014). Thunder is the shockwave we hear that is caused by the rapid heating and cooling of the air around a lightning flash; it is something we must be cognizant of at all times.

To estimate the distance between you and a lightning flash, use the "Flash to Bang" Method. When you see lightning, count the number of seconds until you hear thunder. Divide the number of seconds by 5 to get the distance (miles) the lightning is away from you. Alternately, each second represents about 300 meters away from you (Environment Canada, 2014). **Lightning can strike as far away as 15 km (10 miles) from the storm cloud!**

Flash to Bang Method

If thunder is heard…	The lightning is…
5 seconds after a flash	1 mile away
10 seconds after a flash	2 miles away
15 seconds after a flash	3 miles away
20 seconds after a flash	4 miles away
25 seconds after a flash	5 miles away
30 seconds after a flash	6 miles away

Heavy winds are a concern in our line of work as workers are often within or close to trees. Debris such as large limbs and branches falling during heavy winds can kill. Hard hats will not suffice to protect you from large falling debris during heavy wind storms.

2.7. SAFE WORK PRACTICES FOR LIGHTNING AND HEAVY WINDS

- Leave the area immediately if lightning is ≤4 mile from where you are working, particularly if you are in a cutblock, on high ground or next to a water source.
- If you cannot get indoors or in your truck make yourself as small a target as possible. Put your feet close together and crouch down with your head between your legs and your hands over your ears. DO NOT lay down on the ground as the current will flow through you causing a heart attack, internal injuries and burns. Attempt to have just your feet contacting the ground and never huddle together as a group.
- Utilize PPE; however more importantly use common sense. Be aware of your surroundings. If the skies are threatening and trees are heavily swaying get out immediately!
- Avoid timber edges (where trees are more likely to come down).
- Don't hold any conducting objects/tools/equipment in your hands such as a planting shovel.
- If working indoors, stay away from windows and doors and avoid contact with anything that conducts electricity. Unplug sensitive electronic equipment as surge protectors may not be effective if the power line is struck by lightning.

3. WORKING NEAR WILDLIFE

Concerns: *Injury or death due to aggressive animals*

Dangerous encounters

Poor interpretation of wildlife behavior

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Wildlife awareness training and education program
- Emergency response training
- Working Alone Policy- See Health and Safety Manual Section 2
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Enforcement of the buddy system

Personal Protective Equipment (PPE)

- Pepper spray, air horns, bear bangers
- Mandatory personal equipment

3.1. WORKING NEAR WILDLIFE EDUCATION PROGRAM

Woodlands provides a detailed wildlife training session during the spring (May) Orientation week. Attendance is mandatory, and this session provides a thorough review of Alberta flora and fauna that are of concern for our line of work. Below are important reminders specific to bear (Grizzly and Black Bear) encounters as they are the most recurring animal encounter.

Deciphering Bear Behavior

There are three main types of bear behaviors displayed when encountered by humans. Accurate interpretation of this behavior may be the difference between avoiding an attack or being attacked. These behavior types are broadly grouped and signs of each may overlap. The only way to fully understand bear behavior is through experience. If you encounter a bear and are in a safe location, watch them closely and remain rational. Observe their behavior while you plan your exit from the area.

1. Predatory Behavior

If you encounter a bear displaying this behavior you have something to worry about but you must remain calm. The bear is essentially stalking you and has already considered you as a potential food source; it will attack if it believes it can defeat you. The key to escaping a predatory bear attack is to let the bear know you will not be an easy kill.

The bear will not make itself well known to you - it will be very stealthy. The bear's ears will be flat to the body, the body itself will be low to the ground, and the bear will always try to remain downwind from you. During a predatory stalking the bear will make very few vocalizations until it confronts you. Even when confronted it is not

trying to display its size and might; it is trying to decide if you can be taken without too much of a fight.

Do not run or move quickly. Acknowledge the bear in a steady low voice, look for a tree to climb, and have PPE (mace, horn, banger, and firearm) ready. Make yourself as large as possible, stand tall, hold your vest out or raise your arms above your head.

2. Aggressive Defensive Behavior

If you encounter a bear displaying aggressive defensive behavior you have traveled too close to
something that is important to it. This may be a food source, cubs, scratching tree, or den site. An aggressive defensive bear will not usually attack you; they only want you to leave the area. They will convince you to do this through a series of displays meant to impress you using their power and might. A display may include loud grunts or huffs, scraping or throwing dirt around; loud chomps of the teeth, and the bluff charge.

If you are bluff charged, never run. Stand your ground and don't look the bear in the eye. Be submissive and back away after the charge while facing the animal. Talk in a low steady voice. Leave the area immediately and ensure anyone in the area knows of the aggressive bear.

3. Inquisitive Behavior

This is the most common type of bear encounter. You may merely bump into the animal and it will simply want to observe you. The animal will usually stand on its hind legs and stretch out its torso sniffing the air to get a scent of you. At this point it may drop and run away or may come closer. Never run! Acknowledge the bear with a steady tone and back away from it leaving a clear escape route for the bear. While backing away watch the bear and wait for it to leave. Leave the area!

Bear Sign

1. Scat

Bear scat is obvious and its contents can tell you a great deal. Bears will leave abundant scat near a food source. If there is a high number of scat in the area then it is obviously regularly frequented - avoid the area. If the scat is full of berries then the animal is most likely satisfied in its diet. A scat of smooth materials with hair in it indicates the bear consumed meat and is likely satisfied. Runny scat or off colored scat can indicate sickness and/or hunger. This bear may not be satisfied and could be aggressive.

2. Trees

In the spring bears will often use their claws to strip the bark from the boles of Subalpine Fir trees to lick the pitch and chew on the soft cambium. This is a bad sign - this food source is low in nutrition and is considered a "filler" food. Animals exhibiting this behavior are more prone to be aggressive towards humans.

3. Digging

Bears will dig for ants, roots, marmots, grubs, and such. These diggings are obvious and cannot be mistaken for another animal. If fresh signs of digging are present in your work area discuss the matter with your Supervisor and plan to temporarily work in a new location.

4. Smell

Bears stink. A bear can often be smelled at a fair distance if the wind conditions are right. What stinks more than a bear is a bear kill. Bears will usually bury their kill for a few days or a week to allow it to ripen. A buried bear kill will often have a very large area scraped clean of forest debris and piled on top of the kill. The bear may also have a daybed nearby and there may be abundant scat in the area. If a bear is in possession of a kill and finds you on, at, or near it, you are in the most dangerous position possible. The bear will attack you to get you away from the kill. The bear does not want to kill you since it has plenty of food, but its sheer strength and determination may leave you severely injured.

3.2. Safe Work Practices for Working Near Wildlife

- Make noise and talk to your partner through the day to announce your presence and to avoid an encounter. This is especially important near rivers or streams where biodiversity is high and noise levels are higher.
- Avoid aromatic lunches, perfumes and highly scented personal hygiene products such as makeup and deodorant.
- Use the knowledge gained from your training.
- Bury your human waste when using the bush bathroom.
- Utilize provided PPE and have it easily accessible at all times (on your hip or easily reachable on your cruise vest-NOT buried in your day pack).
- Listen for signals of animal activity, and make note of the seasons when young may be with the adults, or rut season.
- If an animal is, or you suspect that one is near leave quietly in a direction opposite to the location of the animal.
- If you see an animal do not approach them. Leave the area and do not return until you are certain the individual has left the area. If needed consult a wildlife officer.
- During an aggressive encounter, avoid eye contact or moving towards the animal (this discourages an attack). If you are near your vehicle, get in a leave the area.
- If in a bear encounter, and leaving the area is unsafe, climb a large diameter tree as high as you can to avoid full reach of bear, and add a few feet. When the bear has left the area, climb down and leave the area. Inform a wildlife officer of the encounter.

- If charged, stand your ground (may be bluff charge);then after the charge is finished back away from the individual.
- Be prepared to use the pepper spray if the animal still persists; have it easily accessible, have the guard off and pointed directly at the animal's face. Know that the spray range is only ~10ft so the animal has to be within close range for it to be effective. Spray the animal with an awareness of the wind direction- you don't want it drifting back in your face!
- Inform your Supervisor of all wildlife encounters. You may need to stay away from that particular work site until the hazard has been reassessed.

4. WORKING IN CONDITIONS WITH POTENTIAL INFECTIOUS DISEASES

Concerns: illness, *Contracting a bacterial, viral or parasitic infection that can cause mild hospitalization or even death (if not properly diagnosed)*

Sickness from insect-borne diseases

Sickness from air-borne diseases

Sickness from water-borne diseases

Hazard Priority Rating: LOW

Hazard Control: Administrative

- Wildlife awareness training and education program
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3

Personal Protective Equipment (PPE)

- OHS approved masks and gloves
- Safety glasses, hard hat
- DEET, bug nets, long sleeves/pants (suggested)

4.1. WORKING NEAR POTENTIAL INFECTIOUS DISEASES EDUCATION PROGRAM

By far, the majority of individual wildlife species in Alberta are healthy (Alberta Environment and Sustainable Resource Development). It is a rare event to see a sick or dying animal. That said diseases and parasites are a natural part of an ecosystem and workers must be aware of the risks and controls as they relate to our work tasks. **For a full list of wildlife diseases in Alberta visit: http://esrd.alberta.ca/fish-wildlife/wildlife-diseases/.** Below are descriptions of the infectious diseases that have

been assessed as possible risks to *Woodlands* workers.

Insect-Borne Diseases

Insects that can carry disease in Alberta are ticks, fleas and mosquitos. One gets sick from getting bitten by an infected insect. Examples of diseases spread by insect bite are West Nile virus and Lyme disease.

West Nile virus belongs to a family of viruses called *Flaviviridae*. It is spread by mosquito bites that have fed on the blood of infected birds. Some people have no symptoms where other people with mild cases show flu-like symptoms. Severe cases could include symptoms such as: the rapid onset of severe headache, high fever, stiff neck, nausea, difficulty swallowing, vomiting, drowsiness, confusion, loss of consciousness, lack of coordination, muscle weakness, and paralysis. Seek immediate medical attention if you experience a sudden onset of any of these symptoms! There is no specific treatment, medication, or cure for West Nile virus. Serious cases are treated with supportive therapies to ease symptoms and prevent secondary infections.

Lyme Disease (*Borrelia burgdorferi*) can cause debilitating chronic disease in people. Although the bacterium is common in wildlife, the disease is rare. The bacteria can survive in a wide range of wild mammals and birds. Ticks feeding on the blood of infected animals have been identified as the vector to which people can contract this bacterium. Many infections of *Borrelia burgdorferi* in humans occur without clinical signs. However people who develop Lyme disease may have damage to the skin, heart, joints, and nervous system resulting in long-term illness but rarely death. A bulls-eye skin rash develops on 60-80% of the people with the disease (AESRD FactSheet 2004). This involves a pinpoint red spot where the tick bite occurred in the centre of a clear white area with an expanding red circular ring around it. Other non-specific early symptoms include fever, nausea, vomiting, and pain in the joints. Long-term serious neurologic complications can include headaches, stiff neck, paralysis of facial nerves, chronic arthritis, meningitis, inflammation of eye tissues and others. Seek immediate medical attention if you experience any of these symptoms! Surveys of ticks in Alberta are limited; however, studies have confirmed that the most common tick in Alberta (common on moose in the foothills) does not provide suitable habitat for the bacteria. The chance of contracting this disease during field work with *Woodlands* is thus very remote.

Air-Borne Diseases

Hantavirus pulmonary syndrome (HPS) is a respiratory illness associated with the inhalation of aerosolized rodent (deer mice) excreta (urine and feces) contaminated by Hantavirus particles. There could be an incubation period of approximately 9 to 35 days, after which symptoms such as fever, chills, occasional headaches, and sometimes gastrointestinal problems occur. Typically 5 days after the onset of initial symptoms, cough and shortness of breath develop; pulmonary edema and deterioration of

cardiopulmonary function may then rapidly occur over the ensuing 24 hours. There is no proven effective antiviral therapy for HPS. The work tasks that may be associated with greater risk are cleaning the shop, yard and storage areas, and small mammal live-trapping.

Water-Borne Diseases

Water from streams, rivers, ponds and lakes can contain harmful bacteria, viruses and parasites. You can become very ill after drinking water from these sources if they contain contaminated water with animal or human feces. As mentioned above in Section 2.2, there are no suitable places in Alberta to replenish your water supply in the field.

Beaver Fever (*Giardiasis*) is an infection of the small bowel that occurs mostly as a result of ingestion of contaminated water containing the parasite. Persistent diarrhea usually develops 1-3 weeks after ingestion. Other prominent early symptoms include abdominal cramping, bloating, weight loss and flatus. The disease is communicable for as long as the infected person excretes the *Giardiaintestinalis* cysts. Medical attention must be sought immediately to prevent severe dehydration, to receive antiparasitic therapy and to stop the spread of disease.

4.2. SAFE WORK PRACTICES TO PREVENT CONTRACTION OF WILDLIFE INFECTIOUS DISEASES

- Use the knowledge gained from your training.
- Regularly wash your hands with soap and water or use disinfectant lotion in the field.
- Avoid contact with insects by using repellent containing DEET (more than 20% DEET for longer protection) or oil of lemon eucalyptus to exposed skin and clothing.
- Carefully follow label directions for repellent use. As well, wear long sleeves, pants (light coloured) and socks and consider a bug face net.
- Inspect clothes and skin for ticks. Have a health professional remove the ticks immediately to ensure the whole insect is removed.
- Walk on cleared trails if possible.
- Avoid contact with rodents and their feces; utilize PPE (protective masks, gloves) when working in enclosed spaces such as the yard storage containers and shop and rodents may be present; as well, wear PPE if live trapping for ecological studies. See Section 6.2 for additional information on Respiration Protection.
- Mist any areas that have come into contact with rodent excreta/urine with a water and soap/bleach mixture.

- Use coveralls or clothes that can be discarded / washed before another use (into a container and disinfect).
- Do not travel with contaminated clothing in the crew cab.
- Always pack extra water from home; never drink surface water in the field nor rinse your fruit/vegetables with it. If home water is not available and you are in a desperate situation see Section 14.1 for Safe Work Practices for water purification in tent camps.
- Always be looking for symptoms in yourself and coworkers.
- Never approach, touch or move an animal that is behaving sick or in an odd manner.
- Never touch or consume a dead animal if encountered at the work site.

5. WORKING WITH ALLERGIES, MEDICAL CONDITIONS, AND VARYING LEVELS OF PHYSICAL FITNESS

Concerns: *Personal ailments or conditions acting up while in field*

Crewmembers not aware of an individual's conditions and concerns

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Fit for Duty Policy – See Health and Safety Manual Section 2
- Incident, Illness, Chronic Risky Mental or Physical State Injury Reporting Policy- See Health and Safety Manual Section 2
- Open Door Policy- See Health and Safety Manual Section 2
- Physical Demands Analysis during Project Initiation Meeting
- Training and education of crewmembers on administering medication in case of emergency
- Reinforcement of a healthy lifestyle and effective communications among workers

Personal Protective Equipment (PPE)

- Medications (on person)

5.1. SAFE WORK PRACTICES FOR ALLERGIES, MEDICAL CONDITIONS AND PHYSICAL LIMITATIONS

- Ensure you have informed the Project Manager and your Supervisor of any allergy, medical, psychological condition or physical limitation prior to start of any work.
- Most tasks undertaken at *Woodlands* require a healthy, rested, fed and energetic person. Adjust personal lifestyle decisions if needed to ensure a healthy, safe and happy life can be achieved both "on and off the clock".
- Always utilize PPE, safety equipment and the knowledge gained through training.
- Have the emergency medication required on your person, and ensure coworkers are informed of its location, and the conditions under which it should be used and how to administer it.
- Report even the small conditions such as blisters, cuts, twisting a joint, trips, falls, mild reactions to insect bites or abrasions; these could lead to serious conditions if not treated early enough.
- Always be cognizant of ailment signs/symptoms in yourself and coworkers.
- If an allergy, medical, psychological or physical condition is affecting a worker's ability to work, the worker must report to the Supervisor and Project Managers immediately so that the work tasks and schedule can be adjusted accordingly.
- Utilize the Company Open Door Policy if you want to approach the Project Manager with confidential concerns relating to the topic. Express concerns you may have with the physical or emotional demands of the tasks assigned to you well before they seem intolerable.
- See Drug and Alcohol Policy in the Health and Safety Manual Section 2.4.4 regarding prescription notification.

6. WHMIS-WORKING WITH CHEMICAL, BIOLOGICAL HAZARDS AND OTHER HARMFUL SUBSTANCES

Concerns: *Exposure to harmful substances that would negatively impact worker health and safety and the environment*

Hazard Priority Rating: LOW-MEDIUM

Hazard Control: Administrative

- Safe Work Practices for storage, handling, disposal
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Annual inventory of all chemicals/harmful substances at

Woodlands facilities

- Inspections and Maintenance Policy- See Health and Safety Manual Section 2
- Required on-line training for WHMIS
- WHMIS labelling and posters
- MSDS information for all hazardous products

Personal Protective Equipment (PPE)

- Leather and rubber gloves, coveralls, eye and face protection, hard hats, safety boots, eye wash and first aid stations (chemical specific)
- 4-head personal air gas monitors (as required)
- Respirators (N95 NIOSH approved lightweight masks or organic cartridge respirator NIOSH approved as required, chemical specific)

6.1. SAFE WORK PRACTICES FOR CHEMICAL, BIOLOGICAL HAZARDS AND OTHER HARMFUL SUBSTANCES

Occupational Health and Safety has set Occupational Exposure Limits (OELs) for many substances. The Code prohibits a worker being exposed to a chemical substance at a concentration exceeding its ceiling limit at any time and to a concentration that is immediately dangerous to life and health (IDLH). Schedule 1 of the Occupational Health and Safety Code (2009) provides a list of substances requiring a code of practice; as well as a table of OELs for chemical substances. **None of the work tasks that employees conduct are within a condition or involve use of substances that are IDLH or require a code of practice.**

Harmful substances are periodically stored at *Woodlands* facilities and used in the field/office for which some OELs have been established. Examples include *ingredients* found in diesel and gasoline fuel, Flash 21B hydrocarbon gallant, silviculture herbicide, cleaning agents, Xerox toner and pepper spray.

- Management will ensure that workers may not be exposed to a concentration of any of the harmful substances that exceeds its OEL.
- All employees who work with or near controlled products are required to obtain WHMIS training, and to provide a copy of the training certificate to the HSE Coordinator prior to commencing assigned work tasks.

- *Woodlands* will ensure that worker exposure to a harmful substance is kept as low as reasonably achievable. This includes exposure through inhalation, ingestion or skin absorption.
- *Woodlands* conducts an annual chemical/product inventory to ensure all products/substances of potential harm are accounted for, properly labelled, MSDS information is obtained and readily available and proper controls and training are in place.
- Supplier labels must not be removed, modified or altered on any controlled product. If a supplier label becomes illegible or detached, *Woodlands* will immediately replace the label with another supplier label or an appropriate workplace label. A workplace label must be affixed to any secondary container to which chemical has been transferred into.
- *Woodlands* determines safe levels of exposure to these harmful substances by referring to the OHS Code and the product manufacturer (MSDS) guidance information.
- When required *Woodlands* will conduct measurements of exposure concentrations at the office workplaces (methods approved by the Director of Occupational Hygiene) to ensure measured levels are in compliance with the OELs specified in the OHS Code.
- See the Corporate Health and Safety Manual Section 3.6 Hydrogen Sulfide Safe Work Procedures and PPE Policy and Procedures Section 3.10 regarding monitoring and air sampling in the field using 4-head gas monitors for all workers conducting well site reclamation works or working within close proximity to the hazard. Currently, this is the only harmful substance to which potential exposure is monitored through air sampling to ensure OELs are not exceeded.
- Detailed information on harmful substances is readily available to all workers. The MSDS binders are found in the shop bays and in every field truck. As well digital copies are found in the shared drive. A copy of the most current OHS Code (2009) can also be found in the shared drive.
- *Woodlands* Supervisors will review MSDS information with the crew before any handling of harmful substances; workers will be fully trained on the chemical or biological hazards they may be exposed to during their works, the potential impacts on personal and environmental health and safety, and the appropriate first aid measures, storage, handling and disposal procedures, and finally emergency response procedures.
- Emergency washing stations are available in the bays. Portable eye wash stations will be provided if the risk of exposure to harmful substances exists in remote field work sites.
- These safe work practices may be revisited in the case of a worker with extreme sensitivities to certain industrial chemicals due to genetic factors, pre-existing medical conditions etc.

- See the Safe Work Practices for Office/Shop/Yard Work chapter for further details on activities not permitted in the shop bay and storage areas, and for further details on proper storage and use of products that have been inventoried.

6.2. SAFE WORK PRACTICES FOR RESPIRATORY PROTECTION

As mentioned in Section 6.1, none of the work tasks that employees conduct are within a condition or involve use of substances that are IDLH or require a code of practice. As such air respiratory protection equipment for this level of respiratory hazard is not a required piece of PPE. That being said, there are work tasks infrequently assigned to workers, where respiratory protection is recommended: workers stirring up dust in the shop and equipment storage areas that may contain waste products from animals such as small rodents, applying herbicide and mixing Flash 21B/A for pile burning. Contaminated dust may contain materials that could cause disease in humans as well inhalation of chemical mists may cause respiratory tract irritation.

- The respiratory protection equipment currently available to all workers (N95 NIOSH approved lightweight masks) was chosen based on the assessed respiratory hazards. The hazards will be reviewed annually (*Woodlands* Annual Hazard Assessment and Control Exercise) or as new chemicals are introduced.
- Workers are trained on proper fitting, use, care and storage of these masks. They are disposable so regular maintenance is not required; these masks are to be thrown out after each use and never transferred between coworkers.
- Upon inspection of the masks (as part of the Monthly Facility Inspections) any worn, torn or dirty masks are to be immediately thrown out. The N95 lightweight masks are to remain easily accessible in the bay shops near the equipment storage area. They are to be stored and maintained in a manner that prevents contamination (the box of masks always kept sealed in the large Ziplock bag) and ensures cleanliness and sanitation upon use.
- In the event that new equipment, new airborne chemical agents and new work processes/practices/procedures that could affect worker exposure are introduced, or workers complain of adverse effects during or after work shifts, *Woodlands* will ensure workers receive and wear appropriate respiratory protective equipment when airborne contaminants exceed OELs. The selection, use, maintenance, care and inspection of the new required respirators will comply with OHS Code and CSA Standards. *Woodlands* will also provide training for signs, symptoms and first aid.
- *Woodlands* will ensure the level of protection any new respiratory protection equipment is appropriate for the new airborne hazards. They will be easily accessible, stored in a manner than prevents contamination, maintained in a clean and sanitary condition, inspected before and after each use as well as during the Monthly Facility Inspection to ensure they are in good working condition.

- When required, workers must ensure they are clean shaven where the face piece of the equipment seals to the skin of the face.
- See the Safe Work Practices within the Office/Shop/Yard Work chapter Section 3.2 for further details on activities not permitted in the shop bay and storage areas (no activity that produces noxious or flammable vapors, no running of vehicles/ATVs in bay shop), and further details on proper storage and use of products that have been inventoried.
- See the Safe Work Practices for Silviculture chapter for specifics on health hazards, first aid measures, handling and storage and preventative measures regarding Flash 21A/B. Organic cartridge respirator NIOSH approved will be worn when the threshold limit value of 50 ppm (vapour) are exceeded.
- See Section 4.2 above for specific Safe Work Practices to prevent contraction of air-borne diseases such as Hanta Virus.
- See Section 8.1 of the Safe Work Practices Chapter for Reclamation regarding handling, mixing and storage of herbicide.

7. MANAGING FATIGUE

Concerns: *Personal habits affecting health and safety in the workplace*

Work conditions and schedules not allowing for adequate rest

Alertness throughout day not sustained

Hazard Priority Rating: MED-HIGH

Hazard Control: Administrative

- Fatigue Management Program & SAFESTART Training
- Fit for Duty Policy – See Health and Safety Manual Section 2
- Incident, Illness, Chronic Risky Mental or Physical State Injury Reporting Policy- See Health and Safety Manual Section 2
- Open Door Policy- See Health and Safety Manual Section 2
- Management of Change Policy- See Health and Safety Manual Section 2
- Task/Workplace/Crew Hazard Analysis as part of Daily Tailgate Safety Meeting
- Journey Management Program
- Reinforcement of a healthy lifestyle and effective

communications among workers

7.1. FATIGUE EDUCATION PROGRAM

Chronic Fatigue Syndrome (CFS) is a common name for a group of significantly debilitating medical conditions characterized by persistent fatigue and other specific symptoms. The fatigue is not due to exertion, not significantly relieved by rest, and is not caused by other medical conditions. CFS may have multiple causes; there is controversy as to its proposed causes, diagnosis and treatment. Symptoms of CFS include malaise after exertion, never feeling refreshed even after a good sleep, widespread muscle and joint pain, sore throat, headaches, cognitive difficulties, chronic mental and physical exhaustion, increased sensitivity to light, noise and smell, as well as digestive disturbances and depression. Reviews of this condition state that CFS is quite rare (7-3,000 cases for every 100,000 adults, American Journal of Psychiatry 160 (2)).

General fatigue is the state of feeling very tired, weary or sleepy resulting from insufficient sleep, prolonged mental or physical work, or extended periods of stress or anxiety. Boring and repetitive tasks can intensify feelings of fatigue. Sleep disorders may also cause fatigue. *Woodlands* will ensure training on fatigue management at the work and personal level is provided to all Workers, fatigue management controls are understood and practiced, and all Workers know how to recognize signs of personal and coworker fatigue.

It is your duty to recognize and report any of the following signs of fatigue in the workplace:

- Reduced decision making ability
- Reduced communication skills
- Reduced productivity / performance
- Reduced attention and vigilance
- Reduced ability to hand stress on the job
- Reduced reaction time- both in speed and thought
- Increased errors in judgment
- Increased sick time, absenteeism, rate of turnover
- Increased medical costs
- Increased incident rates

7.2. SAFE WORK PRACTICES FOR FATIGUE MANAGEMENT

All workers are provided training on the Woodlands Fatigue Management Program

- Utilize the training you acquired to manage fatigue both at the work site and at home. Fatigue management, like safety, must be a way of life.

- The best remedy for fatigue is sleep. Don't push it! Proper nutrition and exercise will also help you sustain alertness each day.
- Adhere to and respect the company policies that relate to this matter and take frequent breaks within each work day to minimize fatigue and increase mental fitness.
- Report and document fatigue to your Supervisor and coworkers as part of the Daily Tailgate Safety Meeting, Safety Observation Form or any time as per *Woodlands'* Open Door Policy. You must not work while impaired by fatigue. Speak up before a critical error occurs!
- Looks for signs of this mental and physical state at all times in your own behaviour and your coworkers.
- Communicate concerns with Management to ensure schedules, hours, habits, and task rotations are managed to control fatigue.
- Do not drive a company truck or ATV nor use any powered hand tools or equipment if excessively fatigued- ask your coworker to perform the task! If driving alone, pull over, get some fresh air and take a brisk walk to clear your head before driving again.
- Take all necessary equipment to the field to ensure that you are able to switch tasks if a mental break is needed.

8. WORKING IN REMOTE INDUSTRIAL WORK SITES

Concerns: *Personal injury or death*

Exposure to high levels of industrial sound

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- See Section 1.0 Administrative Controls for Survival Preparedness for Remote Field Sites
- Adjustment of work schedules and tasks to reduce noise hazard exposure

Personal Protective Equipment (PPE)

- See Section 1.0 PPE Controls for Survival Preparedness for Remote Field Sites
- CSA approved hearing protection
- H_2S monitor, safety glasses, leather or rubber gloves, fire retardant coveralls (when applicable)

8.1. SAFE WORK PRACTICES FOR WORKING ON REMOTE INDUSTRIAL SITES

- Respect and adhere to all policies and procedures outlined in the Health and Safety Manual.
- Utilize required PPE and safety equipment and apply the knowledge gained from your training to your daily tasks.
- Be sure to attend site orientations if applicable, and maintain current health and safety certificates/skills required for the industrial work site.
- Avoid using electronic devices near well heads (or hydrocarbons); they provide a source for electrostatic ignition and may lead to an explosion.
- Stay 5m away from all wellheads at all times due to unstable ground.
- Supervisors are to keep in contact with industrial site personnel (if applicable) to ensure the *Woodlands* crew is up to date on the most current industrial activities, hazards and controls on site that may impact our work.
- Always have a planned escape route in case of an emergency and know where the mustering areas are.
- Always stay aware of your surroundings.

8.2. SAFE WORK PRACTICES FOR WORKING AROUND HEAVY EQUIPMENT

- Always utilize high visibility outerwear and other mandatory PPE and safety equipment.
- Use hand gestures when working around/with heavy equipment operators.
- Respect a minimal 10 meter buffer radius around any operating equipment. You work around them, not the other way around.
- Ensure the operator knows where you are at all times. Always ensure eye contact or an obvious signal has been achieved before proceeding towards or around heavy equipment.
- Avoid putting yourself in the line of fire at all costs.
- Be aware of how the weather is progressing through the day and how a sudden change in the physical environment could impact access safety and functioning of heavy equipment.

8.3. NOISE PROTECTION PROGRAM

Exposure to high levels of noise may cause hearing loss and other harmful effects. The extent of damage depends primarily on the intensity of the noise and the duration of the exposure. To reduce this risk while working on industrial sites and near heavy or powered equipment Woodlands North has a hearing conservation program. The following safe work practices will be implemented when projects require employees to conduct tasks at noisy work sites. Generally, this would be in areas where workers must significantly raise their voices in order to be heard over the background noise. Also see PPE Policy and Procedures Section 3.10 of the Woodlands North Corporate Health and

Safety Manual for a complete list of work tasks that require mandatory hearing protection PPE.

- When workers are sent to noisy work sites or are required to work with noisy equipment such as brush saws or chainsaws, Management will monitor and measure noise exposure levels in a way that ensures workers are never exposed to noise that exceeds 85 decibels (dBA) at any time during the working day as required by Occupational Health and Safety legislation. This includes assessment done by a qualified person using appropriate equipment as defined in the OHS Code and in accordance with the Canadian Standards Association (CSA).
- In the rare event that a worker does get exposed to 85 dBA or greater (ex: not wearing required hearing PPE while chain sawing) Management will arrange for audiometric tests to determine the extent of existing hearing loss and to monitor for ongoing changes in hearing ability.
- Management will educate workers how noise-induced hearing loss occurs and how workers can protect themselves. Training will cover worker and employer responsibilities and compliance expectations.
- Management will provide PPE controls to noise exposure in the event that Client engineering controls on their heavy equipment/at the industrial site are not practicable to ensure workers are not exposed to 85 dBA or greater.
- Personal hearing protection will meet the CSA requirements and must be worn properly to be effective. Hearing protection will be compatible with other pieces of required PPE (hard hats etc).
- In the event that hearing protection is necessary, Management will train workers on proper selection, use and maintenance of personal hearing protectors.
- Periodic surveys will be performed when new noise-generating equipment or work processes are introduced or when workers notice changes to the noise level or their own hearing.
- Management will adjust work schedules as needed so the amount of time that a worker is exposed to noise is within acceptable limits.
- Management will evaluate the hearing conservation program to verify work-related hearing loss is prevented.

9. MOUNTING AND DISMOUNTING EQUIPMENT

Concerns: *Potential injury/strain*

Slips, trips, and falls

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Three-Point Contact Rule
- Slips, Trips and Falls Education Program (See Section 11 for full details)
- Inspections and Maintenance Policy- See Health and Safety Manual Section 2

Personal Protective Equipment (PPE)

- Gloves
- CSA approved work boots
- OHV helmets

Engineering

- Sideboards, railings on ramps

9.1. THREE POINT CONTACT RULE

Falling while getting into or out of a truck cab, truck box, trailers or large equipment can cause serious injuries. Many knee, ankle and back injuries result from jumping off or slipping off equipment. The biggest cause of falls from a vehicle is human error and failure to follow the "Three Point Rule" (safetytoolboxtopics.com, 2013). This rule requires three of four points of contact to be maintained with the vehicle/equipment at all times meaning two hands and one foot, or two feet and one hand. This system allows maximum stability and support, reducing the likelihood of slipping and falling.

Three Point Contact mount and dismount guidelines:

- Break 3-point contact only when you reach the ground, the cab, or a stable platform.
- Mount and dismount facing the equipment.
- Climb on and off only when the equipment is stationary.
- Use the parts designed by the manufacturer for mounting and dismounting – steps, running boards, footholds, handgrips etc.
- Keep these parts clear of mud, snow, grease, and other hazards that can cause slips, trips, or falls.
- Don't use wheel hubs, machine tracks, or door handles for mounting and dismounting.
- Mind your step; keeping a 3rd point of contact with the ground helps with balance and traction.
- Use extra caution when the ground is soft such as in a bog or muddy area.

9.2. SAFE WORK PRACTICES FOR MOUNTING AND DISMOUNTING

- Use the Three Point Contact Rule and guidelines for all mounting and dismounting of equipment.
- Evaluate every truck and piece of equipment daily as per company inspection procedures. Document inspection findings on the Daily Tailgate Safety Meeting Form.
- When using equipment that takes you off the ground always utilize the required PPE, and other safety equipment.
- Keep steps, ladders and standing surfaces free of snow, mud and debris.
- Don't climb down/up with something in your hand.
- Don't rush; descend/ascend slowly to avoid straining a muscle.
- Never jump! You may land on an uneven surface, off balance or on something. Look before exiting.

10. WORKING WITH AND CARRYING FIELD EQUIPMENT

Concerns: *Personal injury from use of field equipment or emergency equipment*

Personal injury from falling trees and branches while using equipment or while transporting it through thick vegetation

Strain from packing heavy equipment

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Training and instruction of equipment use
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Inspections and Maintenance Policy- See Health and Safety Manual Section 2
- Supervision and job task rotation when tiring
- Lock Out Tag Out System

Personal Protective Equipment (PPE)

- Gloves
- Hardhat
- Safety glasses
- CSA approved steel-toed boots

- Large backpacks (available)

10.1. SAFE WORK PRACTICES FOR OPERATION AND TRANSPORTATION OF FIELD EQUIPMENT

- Utilize required PPE for all works with field equipment and other safety equipment such as axe, Pulaski or shovel.
- Utilize training provided by your Supervisor on proper use, maintenance and storage of all field equipment.
- If required to haul in many pieces of equipment in to the field, utilize a company backpack to avoid back and arm strain. Carrying your load close to your body will avoid unexpected weight movement.
- Avoid packing an uneven load in to your cruise vest. Distribute the weight of your equipment as evenly as possible.
- Avoid following too close to a person walking ahead of you in the trees. Their bodies and equipment may have gotten caught on a branch and you want to stay clear of any back lash of trees, branches or sticks.
- Choose your own path; another person's trail may not be safe for you.
- Inspect field and emergency equipment regularly. Look for burrs, flaws, loose connections, etc. to ensure equipment is safe to use. Ensure the axe/Pulaksi is sharp before using and the heads are secured to the handle.
- Lock out Tag out any piece of field equipment that is unsafe for use. Tell your Supervisor so that remedial action can be implemented.

How to use an axe safely:

- Chop away from your body.
- Clear debris from the work area that could hinder your range of motion.
- Chop wood on even ground to ensure proper footing and stand with your feet approximately 1 foot apart.
- Position your hands on the axe handle closer to the head of the axe to properly control each swing.
- Swing the axe at an angle down toward the log, chipping into the right side of the log. Repeat chopping using consistent power and speed. Follow through each chop, allowing the axe head to fully enter the log before repeating the process. Alternate between the right side of the log and left side of log by changing the angle of the axe.

11. WORKING OR WALKING ON UNEVEN GROUND

Concerns: *Slips, trips falls*

Personal injury

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Supervision and job task training
- Reinforcement of good housekeeping
- Contracts with snow removal and office cleaning service providers
- Annual Field Allowance can be put towards maintaining proper footwear
- Inspections and Maintenance Policy- See Health and Safety Manual Section 2

Personal Protective Equipment (PPE)

- CSA approved steel toed boots

Engineering

- Extra traction on ATV ramps

11.1. SAFE WORK PRACTICES TO PREVENT SLIPS, TRIPS, FALLS

In Canada, about 60,000 workers are injured on the job from slips, trips and falls every year (Enform Guide to Safe Work, 2005). This accounts for 15% of the lost time injuries accepted by WCB. Besides being a huge financial loss, these injuries can cause people pain, suffering and unfortunately death in some cases. Walking is something we usually take for granted and we can usually perform the task with skill and dignity. At work however, where the job site and environment are constantly changing one must apply special skills and knowledge to avoid injury while walking through uneven ground.

- Always take a look at your environment and walking surfaces. Are they wet, bumpy, sloped, etc.? If you were to fall, are there objects you may bump against or even get impaled on?
- Always choose the path of least resistance and hazard.
- Use the Three Point Contact Rule when scaling over slash and debris.
- Shorten your strides to suit walking surfaces and tasks. Point your feet slightly outward for extra balance and make calculated moves rather than abrupt sharp movements.

- Your approved steel toed boots may work well for most walking surfaces and prevention of impact, compression and puncture injuries. However consider wearing caulk boots with good ankle support particularly during rainy and frosty days in the field.
- Choosing and maintaining appropriate footwear is needed to protect yourself from the hazards of slips, trips, falls. Use your field allowance money wisely.
- Adhere to and utilize barriers, flagging, signage to warn others of hazards.
- Loss of mental focus takes your mind away from the task at hand putting yourself at risk. Maintain a good mental condition. See Safe Work Practices in Sections 5.1 and 7.2 as they apply to mental alertness.
- Physical conditioning and stretching may not always prevent slips, trips and falls, however if you are in good physical condition you will have quicker reflexes and limber, toned muscles to help you recover your balance. It will also help you recover faster.
- Practice good housekeeping in the office, yard, shop, vehicle and work station. Help to clear snow, frost, ice, spills, water, mud, clutter as you encounter them. Together we can greatly reduce causes of slips, trips and falls.
- Report other factors that can cause slips, trips and falls such as poor lighting, obstructions and lack of warning signage.

12. WORKING NEAR WATERCOURSES

Concerns: *Drowning*

Falling through ice

Slips, trips, falls leading to personal injury

Eye strain

Hazard Priority Rating: LOW

Hazard Control: Administrative

- Supervision and planning to minimize working near the hazards
- Survival training, first aid training, emergency response training,
- Daily hazard assessment and control meetings- Tailgate Safety Meetings
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Working Alone Policy - See Health and Safety Manual

Section 2

Personal Protective Equipment (PPE)

- Probing object/ tool (recommended for checking ice thickness and/or stability of ice)

12.1. SAFE WORK PRACTICES FOR WORKING NEAR WATERCOURSES

Working near watercourses implies cooler temperatures, increased humidity, higher risks of getting wet and slipping and encountering wildlife. To remain healthy and safe while working near watercourses workers will:

- Review Sections 1.1, 3.2, and 11.1 for Safe Work Practices to control for basic survival in remote field work sites, working amongst wildlife, and prevention of slips, trips, falls.
- Maintain loud voices while communicating with your partner as rushing water creates a lot of noise; eye contact and hand gestures will aid in communication.
- Watch your footing especially around steep, muddy and unstable banks.
- Sun glare from the water can create temporary blind spots and eye strain. Respect the company PPE policy and recognize that polarized sunglasses are mandatory PPE for works conducted near waterbodies.
- Be sure to immediately communicate an inability to swim/phobia of water to your Supervisor if your work takes you within or adjacent to a body of water. Work tasks and locations can be adjusted as required.

12.2. SAFE WORK PRACTICES WHEN CROSSING A FLOWING/FROZEN CREEK BY FOOT

Always assess the risks of crossing any kind of water body by foot no matter how unthreatening it may appear. It may be deeper, faster, have a more hazardous substrate than you think. A person can drown in shallow water. Ice thickness on a waterbody is dependent on many factors such as depth of water, size of waterbody, snow coverage on top of the waterbody and local climate fluctuations. Therefore, ensure you determine the safety of crossing a creek by foot using a combination of factors.

- Avoid the following if possible:
    - The outside bend of a channel because it is deeper.
    - Above a beaver dam, because pooling water is deep and not frozen.
    - Below a beaver dam, because fast flowing water may come through the dam.
    - Slushy ice as it is a sign of weakness.
    - Ice on or near moving water as they pose drowning hazards.
    - Ice that has thawed and refrozen as it is weaker.

  - Layered or rotten ice caused by a sudden temperature change. Remember this ditty "Thick and blue is tried and true! Thin and crispy is way too risky!"
  - Crossing gray, black, white or opaque coloured ice as they are signs of weakness.
- If you assess that crossing the water body is unsafe DO NOT CROSS IT! Inform your Supervisor who will then find alternate routes or provide the appropriate equipment.
- If the stream is flowing the following precautions should be taken:
  - When the bed is not visible use something to probe the bed in front of you.
  - Fast flowing streams should be crossed by the largest person first, breaking the current for others behind.
  - DO NOT tie yourself to equipment or trees.
  - All waist and chest harnesses should be undone on vests and packs before attempting the crossing.
  - If footing is lost, turn feet downstream, and attempt to direct yourself towards shore/to slower water. This allows you to prevent running into obstacles head first.
- If the stream is frozen the following precautions should be taken:
  - One person is to test the thickness of ice in several places to obtain an average. Remember the edge is shallower and freezes first.
  - Use the buddy system with the partner ready to assist at the shoreline.
  - The stick method can determine any weak spots in the frozen creek. You can also chip the ice with an axe or sharp tool to create a small hole in the ice. Use a measuring tape to evaluate depth of ice.
  - All frozen creeks must be checked and rechecked each time they are crossed.
  - The recommended minimum ice thickness are as follows:
  - 3" (7 cm) or less – STAY OFF!
  - 4" (10 cm) or greater – ok for ice fishing, walking, cross country skiing.
  - See Chapter 4.1 for Powered Mobile Equipment for additional minimum ice thicknesses for ATV crossing etc.
  - Cross at a slow constant speed if the creek is deemed safe.

12.3. SAFE WORK PRACTICES IF A WORKER HAS BROKEN THROUGH ICE

If you are the victim:

- Stay calm.
- Swim to the edge of the ice and keep moving in attempts to stay warm.
- If the ice is thin, spread your arms over the ice and wait for rescue.
- If help isn't available, break the ice ahead of you until you get to a solid surface

(try to head towards the shore). With arms extended in front of you, carefully try to roll out. If you have a knife, use it as a pick to help pull yourself out.

If you are trying to help someone:

- Stay calm.
- Don't rush onto the ice.
- Try to reach the victim from the shore with a rope, pole, branch, coat or anything that will reach. Try to include a loop in the assist for the victim to put their arm through. As the victim gets cold their fingers lose the ability to grasp.
- If you have to go onto the ice, lie down flat on the ice and edge yourself close enough to use your assist. Don't be a victim yourself.
- If you have more than one person to help, form a human chain.

Treatment:

- Remove the victim from the water. Get to a shelter immediately.
- Take off all wet clothes and dry the victim before wrapping in sleeping bags or jackets to keep warm. Don't forget to cover the head!
- Seek medical attention immediately and follow *Woodlands* Emergency Response Procedures outlined in the Health and Safety Manual Section 3.

13. ACCESSING WORK SITES WITH A HELICOPTER

Concerns: *Personal injury or death*

Potential overnight stay in the bush

Miscommunication with pilot

Fuel spills

Damage to equipment (helicopter or other)

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Helicopter safety training and pilot orientation
- Company Communication Procedures- See Health and Safety Manual Section 3
- Survival training, first aid training, emergency response training, SAFESTART training
- Company Inspections and Maintenance Policy and Procedures- See Health and Safety Manual Section 2

- Daily hazard assessment and control meetings- Tailgate Safety Meetings
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Working Alone Policy - See Health and Safety Manual Section 2

Personal Protective Equipment (PPE)

- Radio, satellite phone, SPOT
- Maps and/or aerial photographs of study area
- Mandatory personal equipment: High visibility vests, compass, scale ruler, pen/pencil, GPS, rain gear, knife, lighter, cell phone
- Overnight kit
- Company bear mace, bangers, air horn
- First Aid kits
- Safety glasses

13.1. SAFE WORK PRACTICES WHEN WORKING WITH A HELICOPTER

In many situations, remote work will be accessed by helicopter. It is important during these scenarios that crews are aware of the inherent dangers of being around these machines. Prior to entering a helicopter for the first time, the pilot must perform a pre-flight safety meeting with the crew regarding the particular machine in use. If the meeting does not occur, it is the responsibility of the *Woodlands* Supervisor/Crew Leader to remind the pilot of the pre-flight safety meeting. **Every worker must receive the pilot's orientation! Client procedures must also be understood and followed.**

- Before you leave triple check you have everything you need to do the job.
- Be prepared to spend the night. Bring the overnight bag on all helicopter access work sites and leave it at the drop off/pick up site.
- Carry extra food (high energy) and extra water on top of the other mandatory personal items to bring. You can leave extra items at the drop off site if you have a distance to walk to the work site.
- Ensure radios are charged to the fullest capacity AND have an extra battery as back up. Be sure to bring In Reach devices (client specific) and back up batteries. Keep the batteries warm if possible during cold days.
- Make sure you have spare batteries for other field equipment such as your GPS unit.

- Be attentive during the pre-flight safety meeting; absorb what you hear.
- To ensure in-flight safety fasten safety harness securely; ensure headsets are worn by all passengers. Use proper protocol as advised by pilot in the event of sickness.
- The pilot is responsible to communicate any flight restraints such as mechanical trouble, high winds, extreme temperatures, fog, darkness etc. If the pilot advises a “no fly” do not challenge his/her decision. Safety always takes priority over project completion.
- Conversely if you do not feel it is safe to fly but the pilot is suggesting lift off, you have the right to refuse work and not fly regardless of the pilot’s judgment.
- Point out any hazards to the pilot as you see them when flying or at the take-off or landing. Be an active, attentive passenger.
- Ensure that the pilot and your crew all clearly understand the planned course of action for the day and an emergency back-up plan. Clearly communicate pick up time and place, radio channel usage, phone numbers etc.
- If uncomfortable with helicopter flights or if you have a tendency to have motion sickness voice this to people involved and take appropriate action (gravol, paper bag)
- Physically check your radio with the pilot to ensure communications work before the pilot leaves you in the bush for the day. Make sure all crew members are aware of the radio frequency (channel) used by the pilot. When the pilot is on the ground and powered down his/her radio and SAT phone may not work. Ensure the pilot has a 5 watt hand held radio with appropriate radio channel (ex LADD 2) if need be so communications are possible at all times.
- Only move toward the running machine after the pilot has indicated it is okay to do so.
- Only approach a running machine from the front or side (never go further back than the rear cargo door).
- Never approach a running machine from the uphill side, always approach from the lower side.
- While waiting for the machine to land, ensure all equipment is securely packed away (hardhat).
- When approaching a running machine, carry any equipment low to the ground, not overhead.
- Ensure all firearms are unloaded (if the breach is open dirt can get into the action and damage the gun), and kept in the rear storage compartment and not in the fuselage. See Section 15.1 regarding permission protocol for carrying firearms.
- Ensure bear spray is kept in the rear storage compartment with the guard on. Ensure bear bangers are carried in the rear storage area and not assembled.
- Ensure that caulk boots are not worn in helicopter unless allowed by pilot, bring a pair of sandals or light running shoes for the flight just in case.
- Wear safety glasses and shield your face from the dust and debris from

downdraft of the helicopter during take-off and landing.

- If you are getting picked up in an area with unstable ground (ex. beside a waterbody or in a fen) check all possible landing sites first and choose the most stable ground. Clear the landing pad area of debris. If necessary strategically place logs on the ground for the skids to land on. This should be done by experienced workers only and the pilot must be fully aware before landing.
- Use Three Point Contact Rule when mounting/dismounting the helicopter.
- If you are splitting your crew up, ensure that a senior is always partnered with a junior and communication equipment is equally split so that each crew has the ability for two-way communications.

13.2. SAFE WORK PRACTICES FOR OVERNIGHT KITS AND SATELLITE PHONES

All work conducted out of a helicopter has uncertainties in terms of scheduling and execution of plans. It is important that crews be prepared to wait for weather to clear, machines to become available, and operations to begin. Similarly, after work, crews may have to wait their turn for pick up. It is not uncommon for a crew not to be picked up due to unforeseen circumstances such as weather or other emergencies the machine is needed for. Any crew that is working on a helicopter accessed job should be prepared to wait in the bush for an extended period. Overnight kits and satellite phones are to be used when there is no possibility to walk to safety.

Necessary Equipment for an Overnight Kit:

- Fire starter sticks (not liquid because it could leak)
- Waterproof matches, flint, or lighter
- Flashlight with batteries
- Solar blankets
- Water iodine tabs
- 10’x10’ tarp
- Rope
- Snare wire
- Cooking pot
- High energy food (power bars)
- Coffee and tea
- Spork
- Axe and saw
- Reading material
- Toilet paper
- Duct tape
- First Aid kit

Please remember you are also required to carry personal equipment that ensures you can always start a fire no matter where you are. Always bring to the bush: high visibility vests, compass, scale ruler, pen/pencil, GPS, rain gear, knife, lighter and personal cell phone.

Company Satellite Phone (INFOSAT IRIDIUM PHONE: 8816-316-83778 March 2014)

Personal cell phones most likely won't work at the helicopter drop off sites due to remoteness or lack of towers in the area. Therefore, it is important to pack the company satellite (SAT) phone.

- Yes- the SAT phone number is correct! See below for proper dialing instructions.
- The SAT phone will not get a local operator. You must have the local emergency numbers on your person to then dial with the SAT (on a print out or programmed in your personal cell to look up).
- Always ensure it has a fully charged battery.
- For optimum signal strength, use the same principals as with your GPS unit: call from an open area, not to be used indoors, the positions of satellites change so monitor the signal strength throughout your call.

Dialing Protocols:

1. **Calling FROM SAT phone** to public telephone network (ex. distress call from the bush to Pilot's cell or Bruce's cell)
   a) Every phone call from the SAT phone must be dialed in an international format.
   b) Begin all "from" phone numbers with "00"
   c) Then dial destination country code "1" for Canada
   d) Then dial area code "780" or "403" etc.
   e) Then dial phone number
   f) Then press green button

Example: Calling Bruce from SAT phone dial "00-1-780-720-2402-green button"

*After you dial you will get an automated message telling you how many minutes you have for the phone call. Then you are automatically directed to the number you dialed.

2. **Calling TO SAT phone** from the public telephone network (ex. Pilot unable to communicate with you by radio, he/she calls you on SAT to let you know poor weather is coming…change of plans)
   a) Every phone call to the SAT phone must also be dialed in an international format.
   b) Begin all "to" phone numbers with country access code "011" for Canada

c) Then dial SAT phone number

Example: Pilot calling SAT phone dial "011-8816-316-83778"

3. To **RECEIVE a call or END a call** on the SAT phone:

a) Press green button or red button respectively

4. **To test the SAT phone** at no charge call "00-1-480-752-5105"

5. **24 hour Customer Service** for the SAT phone:
a) From land line/cell dial "1-403-543-8199"
b) Toll free calling from SAT phone dial "8111"

6. Please see the manual for unlocking/locking keypad, texting options, checking voice messages etc. You should be familiar with the device and be prepared to use it in any fashion possible if injury prevents verbal communication.

14. TENT CAMP MANAGEMENT

Concerns: *Working in remote areas*

Animal encounters

Contaminated water source

Extreme weather exposure

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Safe Work Practices for remote work, working near wildlife, extreme weather- See Sections 1, 2, 3
- Safe Work Practices for camping in backcountry
- Survival training, first aid training, emergency response training, wildlife awareness training, SAFESTART training

Personal Protective Equipment (PPE)

- Radios, satellite phone, SPOT, IN-Reach, cell booster
- Personal first aid kit, truck first aid kit
- Maps and/or aerial photographs of study area
- Mandatory personal equipment: high visibility vests, compass, scale ruler, pen/pencil, GPS, rain gear, knife,

lighter, cell phone

- Overnight kit (see Section 13.2 for full content list)
- Company bear mace, bangers, air horn
- Emergency equipment

Engineering

- Electric bear fence surrounding camp
- Primus stoves for areas with fire bans

14.1. SAFE WORK PRACTICES FOR COOKING/CLEANING IN TENT CAMPS

- All food, cooking equipment, and clothing worn when preparing food should be stored in a permanent bear cache where available. A sealable tote will work if nothing else is available.
- All personal hygiene products (toothpaste, lotions, soaps etc) should also be stored in a bear cache, not in your tent.
    - Cache high in a tree and secured by a rope to another tree. Bear caches should be placed at least 25 meters from tents.
- Cooking should be done at least 25 meters from tents and all wastewater from cooking/cleaning should be disposed in a campfire or in a location well removed from the campsite.
- Solid waste (e.g. food packaging) should be stored in the bear cache and packed out of the area.
- Remote conditions may require hauling water from creeks or other water sources that could be contaminated.
    - All drinking water should be collected from a clean source, boil for ≥7 minutes, and treated with iodine or with microfilters.
- When preparing food, avoid leftovers since they will be difficult to dispose of.
    - If unavoidable, these materials should be stored in the bear cache and never buried or stored on the ground (especially near tents).

14.2. SAFE WORK PRACTICES FOR EQUIPMENT IN TENT CAMPS

- Ensure proper training has been achieved for chainsaw and axe use and always utilize provided PPE.
- Ensure the equipment assembled for the trip is appropriate for the site conditions and the time of year.
- Always have adequate amount of food, gas, battery power in radios, or other equipment necessary to conduct the work, as well as for emergency situations and a safe return home.

14.3. SAFE WORK PRACTICES FOR COMMUNICATION IN TENT CAMPS

- Utilize *Woodlands'* Check Out/In Procedures (Health and Safety Manual Section 3.2.1) and always double check communications equipment to ensure that if an emergency situation arises, help could be mobilized as soon as possible.
    - If crews are staying together, a nightly check-in system with a return time and an internal search procedure should be used.
    - If crews are working in separate areas for several days, check-ins by radio, cell phone, or satellite phone may be required.
    - Under extreme conditions, more frequent check-ins throughout the day are required.
- All crews should have access maps of each other's working area and the location of where they will be working day to day.
- In all cases, you must indicate the area in which you plan to work, the approximate schedule of your work plan, and any anticipated difficulties; BE SPECIFIC!
- For situations requiring backcountry camping, a route plan showing expected work areas, camp locations and a proposed schedule will be left with other crew members and the office.
- If difficulties (caused by injury, fatigue or frustration etc.) are encountered this must be communicated immediately to your working partner and Supervisor.
- Be aware of the limitations of other crewmembers. Look for non-verbal clues that your partner needs help or needs a break. Rotate tasks and take breaks to avoid fatigue. Work at the speed of SAFE!

14.4. SAFE WORK PRACTICES FOR TENT CAMP LOCATION

- The following ideas are to be used as a guide in locating a camp in the bush
    - Ensure the camp is far enough from a stream that floodwater won't affect it.
    - Be aware of fuel sources and camp fire location to reduce the possibility of a forest fire.
    - Ensure all dead or hazardous trees are removed before setting up camp.
    - Ensure the campsite is large enough to carry out operations safely.

14.5. SAFE WORK PRACTICES FOR TENT CAMP LAYOUT

- Gasoline caches and flammables are to be stored away from the camp and watercourses.

    - Observe and obey the specific Client Environmental Management System (EMS) for specific guidelines for gasoline cache setup.
- Helicopter pads should also be located away from the camp if applicable.
- All garbage, bush potties, and cooking equipment should be kept away from the sleeping area to avoid possible encounters with wildlife.
- Set up the electric bear fence around the entire camp and ensure to alert your coworkers when it is live.

15. OPERATION OF FIREARMS / WORKING DURING HUNTING SEASON

Concerns: Serious injury or death

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Company Firearms Permission Protocol
- Training, certification and instruction of gun safety and use
- Maintenance and inspections of firearm

Personal Protective Equipment (PPE)

- Earplugs
- Eye protection

Engineering

- Trigger lock guard

15.1. SAFE WORK PRACTICES FOR OPERATION OF FIREARMS

Woodlands North Firearms Permission Protocol

Before a firearm is brought to any work site, permission must be obtained from the Principal Bruce Nielsen. Contact him directly to arrange a field assessment and review of the required certification documents (PAL, POL, Alberta Conservation and Hunter Education CORE course or equivalent). Once you have proven adequate knowledge, suitable training and sufficient experience in the operation and handling of firearms and are granted permission the following safe work practices must be followed:

- Always handle firearms with care.
- Treat every firearm with the same respect you would give to a loaded firearm.
- Be sure of your target before you pull the trigger.
- Always be sure that the barrel and action are clear of obstruction.
- Never point your gun at anything you do not want to kill.

- Never leave your gun unattended unless you unload it first.
- Never climb a tree or cross a fence with a loaded gun.
- All firearms should be unloaded and properly locked up during all forms of transportation and storage.
- Both the firearm and ammunition should be stored together in the event of a situation that requires the use of a firearm.
- Person responsible for the firearm should ensure that the proper ammunition is provided (to prevent misfire/ backfire).
- After use, ensure that all firearms are cleaned.
- Only one person on a crew may carry a firearm, unless the Project Manager decides otherwise.
- The most experienced and certified person will always carry the firearm.
- Necessary equipment:
    - Firearm cleaning kit appropriate for the weapon being carried.
    - A carrying case, lockable and easily stored out of sight.
    - A trigger lock for when the weapon is stored and especially while being transported.
    - All necessary documentation for the weapon, (PAL, POL, registration, proof of ownership, permission to transport and carry (handguns only)).

15.2. SAFE WORK PRACTICES FOR WORKING DURING HUNTING SEASON

- Always wear your high visibility PPE.
- Make noise as you work.
- Company signage is available to alert hunters in the area that a crew is working in the vicinity. Place the signage at your parking spot in a location that is easily viewed. Signage is not required- use at your own discretion.
- Obey Company Communication Procedures- See Health and Safety Manual Section 3.

16. PREVENTING AND FIGHTING REMOTE FIRES

Concerns: *Injury or loss of life*

Loss of natural resources

Hazard Priority Rating: LOW

Hazard Control: Administrative

- Training and instruction on using fire equipment
- Safe work practices and Company Emergency Response Procedures- see Health and Safety Manual Section 3.4
- Preventative maintenance and inspections of firefighting

equipment

Personal Protective Equipment (PPE)

- Fire suppression tools on truck during fire season (Mar 1-Oct 31)
    - Wajax-full and secure, shovel, Pulaski, collapsible pail
- Fire suppression tools on ATV during fire season
    - *Client specific
- CSA approved steel toed boots
- Hard hats
- Eye protection

16.1. SAFE WORK PRACTICES FOR REMOTE FIRES

- Utilize provided PPE.
- Attend AESRD fire training provided at the spring orientation and use the knowledge gained.
- Extreme care to prevent ignition of a fire from the following causes:
    - Refueling ATVs.
    - Driving ATVs through tall grass.
    - Driving pickups through tall grass.
    - Any campfire scenario.
    - Any open flame.
- **NO SMOKING permitted while working in the woods!**
- All campfires or survival fires should be located in a secure location, away from any potential fuel sources (dry vegetation, explosive materials, or other flammable materials)
- The following procedures should be done before you leave the area or at the end of the evening:
    - Spread embers out to expose hot spots.
    - Repeatedly pour water or cover with snow to extinguish flames and burning coals
    - Coals should be cold to the touch before considered out.
- All crews are to have firefighting equipment.
- Full water jugs (windshield wiper container) or 5 lb fire extinguisher should be firmly attached to all ATVs during dry conditions. Other Clients may also request a collapsible pail, shovel and Pulaski.
- Know and obey Client requirements.

- Gasoline, volatile solvents or any other flammable substances must be stored in containers that are clearly labeled, approved for their contents and located in a safe place away from any source of open flame.
- Flammable liquid containers must be electrically bonded when liquids are being transferred from one to another.
- Any portable container which is being used, or has been used, for storage of a flammable agent must never be left exposed to the direct rays of the sun.
- The fuel tanks of gasoline engines must be filled away from work areas and only when the engines are turned off. Approved safety cans and proper grounding techniques must be used when the tank is not filled directly from the storage container or other source of supply.
- Access to all fire and safety equipment must be kept clear of obstructions at all times.

17. PREVENTING REMOTE ENVIRONMENTAL SPILLS

Concerns: *Injury or illness due to accidental release*

Damage to the environment, flora, fauna

Hazard Priority Rating: LOW

Hazard Control: Administrative

- Training and instruction on using spill equipment
- Safe work practices and Company Emergency Response Procedures- see Health and Safety Manual Section 3.5
- Maintenance and inspections of spill kit materials, emergency equipment, and good housekeeping for pickups and remote work sites
- Annual Chemical Inventory
- WHMIS labels, MSDS sheets
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Lock Out Tag Out System

Personal Protective Equipment (PPE)

- Spill Kit
- Chemical specific PPE including gloves, eye and face protection

- Chemical resistant clothing and footwear
- Chemical specific respirators
- First Aid Kits

17.1. SAFE WORK PRACTICES FOR REMOTE ENVIRONMENTAL SPILLS

Training on environmental spill prevention practices will occur annually at spring orientation.

- Review chemical MSDS in detail prior to heading to the field to ensure knowledge of potential health and environmental hazards, appropriate PPE, First Aid measures, accidental release measures, handling, storage and disposal considerations.
- Attend *Woodlands* spill emergency training and use the knowledge gained.
- Obey all Client procedures regarding environmental spill emergencies.
- Use extreme care to prevent spill from the following causes:
  - Refueling ATVs or pickups.
  - Transporting chemicals by truck or ATV.
  - Loading or unloading of chemicals.
  - Mixing chemicals.
- If transporting a portable container of chemical from the shop to the field, use bungee cords or straps to secure its upright position on the truck or ATV. This will minimize potential for spill along the journey.
- Always practice good housekeeping in the pickup truck and remote field work sites to minimize the potential for a spill, which could lead to slips, trips, falls or environmental damage.
- Clear access to the pickup spill kit and emergency equipment is mandatory.
- See Safe Work Practices for Hazardous Office/Shop/Yard products for additional information on WHMIS and MSDS.
- Lock Out Tag Out any piece of project equipment, pickup, ATV etc that shows signs of leaking. Immediately tell your Supervisor to get the problem remedied.

CHAPTER TWO: OFFICE, SHOP AND YARD WORK

Often when we imagine the kind of employees who get workplace injuries, we think of those who exert a lot of physical energy on the job or those who work with heavy machinery. It is important to remember that office workers too are at risk. Many office injuries are caused by the repetitive tasks that put strain on our muscles and joints. It is *Woodlands* goal to have happy and healthy workers in the field and office.

A list of facility-based job tasks within *Woodlands* operations include:

- Office computer work
- General office work including use of office electrical items phones, TVs, photocopiers, fridge, microwave, cleaning, organizing and communications
- Yard work
- Shop work including basic equipment maintenance

Herein details the task hazards, methods of hazard control, safe work practices and educational programs for the work tasks mentioned above.

1. OFFICE COMPUTER WORK

Concerns: *Repetitive Strain Injuries (RSI)*

Poor office ergonomics

Eye, neck, strain

Sedentary back injuries

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Knowledge, training and mentorship programs
- Task variety and promotion of healthy and safe work pace

Engineering

- Adjustments to chair, armrests, lumbar support
- Monitor elevators, document holders, foot rests
- Specialized ergonomic mouse pads, keyboards

1.1. REPETITIVE STRAIN INJURY (RSI) EDUCATION PROGRAM

Our bones and muscles make up our musculoskeletal system. As strong as this system

might be, overuse of the muscles through repeated movements can put stress on your body causing a repetitive strain injury also called repetitive motion injury. The following information is taken from the Office Ergonomics booklet produced by WCB-Alberta with permission granted.

Symptoms

The first signs of an RSI may be subtle and mild, and the symptoms may appear long after performing the activity. For these reasons, people often ignore the slight aches and pains, but eventually these slight aches and pains can become serious problems down the road if ignored. Symptoms may include:

- Dull aching
- Loss of sensation (numbness) especially at night
- Aches/pains which may be worse at night
- Tingling and burning sensations
- Swelling around the wrist and hand
- Dry, shiny palm
- "Pins and needles" discomfort
- Clumsiness (loss of ability to grasp items, impaired thumb and finger dexterity
- Muscle weakness and fatigue
- Muscle spasm
- Joint restriction/loss of movement
- A "crackling" feeling when swollen tendons are pressed tightly
- A cyst-like swelling or node, known as a ganglion, near a tendon or joint

Stages of RSI

Early Stage
At work the body aches and individuals feel tired, but symptoms disappear when away from work. The aches and fatigue do not interfere with the ability to work. The injury will heal completely if given immediate attention.

Intermediate Stage
The injured area aches and feels weak soon after the start of work, until well after work has ended. The injury will heal completely if given immediate attention.

Advanced Stage
The injured area aches and feels weak, even at rest or while asleep. Even light duties are very difficult. It is possible to fully recover from an injury in its advanced stages, however it may require more work to correct it.

The earlier you can detect the development on an RSI, the better your chance of recovering from it. Warding off discomfort and possible injury could be as easy as

making a few simple adjustments to your work environment or behaviour. Always report any pain or discomfort you are experiencing to Woodlands Management to make a game plan to alleviate your discomfort.

Risk Factors of RSI

The risk factors closely associated with the development of an RSI are physical, psychological/organizational, and environmental factors.

Physical Factors
Factors such as force, posture and frequency/duration of work are associated with the likelihood of developing an RSI because they stress our joints and muscles. Positioning the body in unnatural positions can put strain on areas such as our spine and wrists. Even if we do not use excessive force and have good posture while working, the simple repetition of tasks can movements for long periods of time can cause RSIs.

Psychological/Organizational Factors
When we are stressed, we tend to tense up certain muscles and pay little attention to proper posture and movement. Stress, therefore is an indirect player because it is not the stress that causes injury- it's our bodies' physical reaction to stress that cause or aggravate an RSI. Stress and poor health habits can increase the likelihood of injury at the office. Also when employees work overtime, they are exposed to longer hours of repetitive tasks, which can increase the chance of injury. If you have any concern about being overloaded, interactions with coworkers, your work schedule etc that is causing stress please report to Management immediately.

Environmental Factors
Some environmental factors may contribute to the possibility of developing an RSI while others simply reduce productivity. Limiting office noise can facilitate concentration and prevent stress and annoyance. Office temperature should never be cold such that blood vessels constrict and reduce sensitivity and coordination of body parts. Sometimes office workers can experience eye strain. Poor lighting makes the employee work harder to see. Seek Management immediately if you have any concern about the environment of your working space.

1.2. SAFE WORK PRACTICES FOR OFFICE COMPUTER WORKS

- Ensure your computer station is set up to your specific needs. Ergonomic training will be provided at spring orientation to ensure the chair height, seat depth, back support, armrests are adjusted to make them as comfortable as possible.
- Take sufficient breaks during computer work to reduce eye strain, neck strain, wrist strain, and back strain. Remember that the body wasn't designed to sit in a

chair for eight hours a day. Get up and stretch; aim to move your back, neck, shoulders at least every 10 minutes.

- Adjust work station to receive enough light. Adjust monitor height and angle to minimize glare. Always consider adjusting monitor brightness and contrast and increased font for better viewing.
- Avoid twisting or stretching to perform tasks. Rearrange your work station or use a rolling and swiveling chair if constantly stretching or twisting.
- Think posture. Keep your feet flat on the floor using a floor rest if necessary and lean into the back rest at all times. Keep your back in good alignment and your chin tucked in.
- Consider using the speakerphone if using the phone for a long period.
- Consider using more ergonomically-friendly peripherals if you can't use the keyboard or mouse comfortably (e.g. wireless mouse/keyboard, padded mouse, split keyboard, etc.).
- Position your keyboard so your wrists are straight when elbows are 90 degrees. Position the mouse at the same height as the keyboard.
- Your legs should be allowed to move freely underneath the desk. Large purses, trash cans and boxes need not be under your desk.
- Minimize the risk of injury by having the items you frequently use close at hand.
- The computer monitor should be directly in front of you when your head is in a neutral position and your eyes looking forward.
- Screen height should be at eye level or just slightly below eye level.
- The monitor should be 18-30'' from your eyes or use the arm's length rule- your monitor should be just beyond your reach if you extend your arm directly in front of you.
- For a few seconds every hour, focus on something farther away than the computer monitor.
- Wear glasses if you need them!
- When possible, use the keyboard instead of the mouse to perform computer commands. Learn the shortcuts for your operating system so you minimize wrist strain.

2. HEALTH AND SAFETY FOR GENERAL OFFICE WORK

Concerns: *Electrical shock*

Personal ailments or conditions acting up at office

Coworkers not aware of staff allergies, medical concerns or physical limitations

Air quality

Trips, slips, falls

Pinched fingers, scalds, burns, skin irritations, cuts

Chronic fatigue

"Stranger Danger"

Hazard Priority Rating: LOW to MEDIUM

Hazard Control: Administrative

- Knowledge, training and mentorship programs
- Maintain healthy work space through formal inspections (monthly) and follow up actions
- Task variety and promotion of healthy and safe work pace
- Monthly office staff meetings
- Task Hazard Analysis
- Reporting system and Open Door Policy
- Emergency Response Procedures for Office Injury- See Health and Safety Manual Section 3.3.2

Engineering

- Electrical panel
- Safety shut offs for certain appliances

Personal Protective Equipment (PPE)

- Medications on person
- First Aid Kits

2.1. SAFE WORK PRACTICES FOR GENERAL OFFICE WORK

- Keep the floors of the kitchen and office spaces clean and dry. Small or loose objects can cause someone to slip, trip, or fall.
- Avoid stringing electrical cords across walkways. If a cord must lie across a walkway, it should be placed within a cord conduit that protects the cord and limits the trip hazard or taped down.
- No running up or down the stairs at any time but especially with sharp office equipment in hand.
- Always use office electrical items as per the manufacture's guidelines.

- Do not put finger near roller after photocopier has been running. Paper jams should be dealt with when the machine is turned off and has cooled.
- Keep body out of the line of fire when opening or closing doors such as filing cabinets, the fridge and cupboards.
- Unplug the paper shredder when not in use.
- Use caution when using the kitchen facilities such as the coffee machine and microwave.
- Review all MSDS for all office supplies that relate to electrical items such as pressurized dusters, and photocopier toners, as well as cleaning supplies.
- Keep electrical cords organized and inspect them regularly.
- Conduct monthly office inspections to look for hazards.
- Ensure adequate communication and training (how to administer medication) to your peers regarding your medical conditions and where to find your medication in case of emergency.
- Positive reinforcement of healthy lifestyles to co-workers.
- Allergies- If you have allergies, medical conditions, or other physical limitations that could affect work at your work site you must inform the Project Manager prior to starting up. You must ensure that you have emergency medication required with you and that you have informed your co- workers of its location, the emergency conditions under which it will be required, and the method of administration.
- Medical Conditions- If you have a medical or physical condition that could affect your ability to perform the required duties or if you require additional training for work under some conditions you must inform your Supervisor. It is important to inform your Supervisor prior working so adequate preparations can be made to allow you to work safely and in the safest manner. If your condition will seriously impede your ability to participate in the Health and Safety Program, the Project Manager will consult with you to attempt to find safe alternatives for the work activity. Physical conditions such as new or recurring injuries (eg. weak ankles, back strain or knee injuries), allergies to insects, food or prescription drugs, or psychological conditions such as a fear of heights must all be considered.
- Physical Fitness- While suitable technical and administrative skills to perform the work are essential criteria in selecting appropriate office personnel, medical or physical factors that could affect your performance must also be considered for your health and safety as well as those of your fellow co-workers. Acknowledgement of your personal capabilities and limitations is vital to your health and safety as well as those of your co-workers.
- Co-workers must be informed of minor problems such as blisters, cuts, abrasions, strained or pulled muscles. These may not prevent you from continuing your duties, but could slow you down, or if left unattended, could worsen. Ensure that appropriate medical attention is given to these injuries to

prevent further injury. Do not push yourself beyond your physical abilities or the limitations of your injury (e.g. further straining of injured muscles). If the condition is affecting your ability to perform certain types of work, the program can be adjusted.

- Attend mandatory Fatigue Management training at spring kick off and utilize knowledge gained. Revisit Section 7 of this Manual.
- Make sure a ladder is secure and wear proper footing when cleaning windows or changing light bulbs etc.
- Keep file and desk drawers closed.
- Keep chairs solidly on the floor. Tilting back in chairs can cause injuries.
- Use care with utility knives, tacks & other cutting or stapling instruments. In most cases, cutting away from your hand or body is preferred. Keep body out of the line of fire.
- Sweep pieces of broken glass instead of picking them up by hand. Glass splinters can be picked up with a damp paper towel.
- Never overload your electrical outlets or extension cords.
- If you are working alone in the office, lock the doors to prevent "Stranger Danger"

3. HEALTH AND SAFETY FOR FACILITY SHOP & YARD WORK

Very limited manual material handling is performed for office-based employees conducting work in either the yard or shop areas. Generally these areas are used for basic maintenance and repair of small equipment and storage. Regardless, during those odd times you may be asked to conduct work in these areas, be sure to abide to the following safe work practices and ask for help when needed. A hazard assessment MUST be performed before manually lifting and handling any load. Always ask for help when the load or task has been assessed as potentially hazardous or beyond your comfort level.

Concerns: *Heavy lifting*

Slips, trips, falls

Strains and injury

Skin irritations

Spills, fire

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Knowledge, training and mentorship programs

- Maintain healthy work space through formal inspections (monthly) and follow up actions
- Annual Chemical Inventory
- Monthly office staff meetings
- Reporting system and Open Door Policy
- Signage
- WHMIS labels
- MSDS sheets
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Lock Out Tag Out

Engineering

- Drainage system in floors
- Tool safety shut offs and guards
- Loading ramps, hoist

Personal Protective Equipment (PPE)

- Coveralls
- Safety glasses
- Gloves
- Face shields
- Hearing protection
- Safety boots
- Hard hats
- Masks

3.1. LOCK OUT TAG OUT PROCEDURE

The Lock Out Tag Out System is a safety procedure which is used to ensure that equipment is properly shut off or taken out of service and not started up again prior to the completion of maintenance or servicing work. When a piece of equipment (powered tools, non-powered tools, powered mobile equipment etc.) is not working correctly attach a Lock Out Tag Out label with your name, date and what is wrong or broken on the equipment. Contact your Supervisor and let him/her know about the situation.

3.2. SAFE WORK PRACTICES FOR WORKING IN THE SHOP

- No activity that produces noxious or flammable vapors can be completed in the shop.
- No activity that produces smoke can be completed in the shop.
- Vehicles cannot be run in the shop.
- Check MSDS binder on the wall before using any chemical.
- If there is a need to ventilate the shop - open the bay door and close all other doors to the shop. Inform others in the building that the shop is being vented of vapors.
- If the sump starts operating then an employee should pour sump anti-bacterial liquid into the sump to reduce the bacteria. Also do not lie on the ground when the sump has started and if you must, then you must wear a respirator or face mask.
- Keep all sources of ignition away from inside the shop. Do not use grinders, saws, drills, or other equipment that creates sparks inside the shop. Use this equipment outdoors – in the yard.
- Keep the bay door closed at all times unless ventilating in order to maintain room temperature.
- Keep the heater on in the winter and off in summer.
- Keep the radio very low if on at all so that you can easily hear any warning or calls for help.
- Wear gloves when hammering tags, gloves and paper towel when checking vehicle oil and never use tools you do not know how nor feel comfortable to use.
- Use proper lifting techniques for heavier equipment.
- Mechanized equipment should be used for handling larger items whenever practicable. Use the hoist available and always request help/a spot when using hoist.
- Keep shop floors and working stations clean, dry and free of clutter.
- Steady the ladder before retrieving equipment up on shelving unit. Always ask for a spot.
- Throw away any old and broken bungee cords and ratchet straps. Keep fingers and body out of line of fire.
- Never overload your electrical outlets or extension cords.
- Check electrical wiring and replace if cracked or frayed.

3.2.1. PROPER LIFTING TECHNIQUES

Prior to manually lifting any object, assess the object for size, weight, shape, and distance to deliver it. Utilize provided equipment such as ramps or the hoist in the shop whenever any hazard is identified after your assessment. If at all in doubt on your capability to lift the object, **DO NOT LIFT IT** and seek assistance. When you have

assessed that you are able to lift the object respect the following safe work practices for proper ergonomics to reduce the chance of injury and strain:

1. Stand close to the load and center yourself over it with your feet shoulder width apart.
2. Tighten your abdominal muscles.
3. Keeping your back straight, bend your knees and squat down to the floor.
4. Get a good grasp on the load with both hands.
5. Keeping the load close to your body use your leg muscles to stand up lifting the load off the floor.
6. Your back should remain straight throughout lifting, using only the muscles in the legs to lift the load.
7. Do not twist your body when moving the load. Instead take small steps with your feet turning until you are in the correct position.
8. Again bend at the knees using only your leg muscles and place the load in the appropriate spot.

3.3. SAFE WORK PRACTICES FOR WORKING IN THE YARD

- Help other staff members complete their tasks.
- Identify and deal with hazards, do not create any hazards. Ensure all equipment is put away properly. Take initiative!
- When working in and around the storage trailer, keep the trailer well ventilated when exposed to ATV exhaust or chainsaw exhaust. Do not run these devices more than necessary. Secure all chemicals in air tight containers.
- Turn work light on in trailer before entering it to avoid bumping in to equipment.
- “Lock” the doors open in windy conditions when loading or unloading ATVs and equipment from the trailer to avoid getting hit.
- Wear gloves and don’t rush when closing the trailer doors. Keep your fingers clear of closing latches.
- Wear gloves and face shield when cutting EMT pipe in the yard.
- Clean all spills on the ground and clean dirty equipment.
- When pulling invasive weeds, ensure to bag the weeds and dispose of properly to reduce spread of seeds. Wear gloves as some weeds are prickly and sharp.
- Stay out of the way of coworkers using grinders, saws, drills, or other equipment.
- In the winter, set the park brake if you park a truck next to the shop door.
- Spread sand or salt in the yard and parking areas if they are icy.
- Lock then block the Whitecourt office gate with a truck.
- Obey posted speed limit within the yard.
- Watch out for fellow co-workers when working in the yard. Drive slowly and make eye contact before proceeding with an ATV or truck. Signal properly. Large equipment is often noisy and you may not be able to hear everyone in the

yard. Use non-verbal communication.
- Always wear required PPE such as ATV helmet, gloves, safety glasses etc.
- When throwing a strap over the quads on a truck, let others know what you are doing.
- Adhere to all *Woodlands* safe working practices outlined in the Powdered Mobile Equipment Chapter.
- If ever called to shovel snow from the roof of the trailer or building, make sure the ladder is secure, stay a good distance from the edge and always wear proper footwear. Make sure someone knows where you are. Consider a spot.

3.4. SAFE WORK PRACTICES FOR POWER TOOLS

- Keep your work area clean and well lit.
- Do not operate power tools in explosive atmospheres such as in the presence of flammable liquids, gasses, or dust.
- Keep by-standers, children, and visitors away while operating power tools.
- Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit only into polarized outlet. Do not try and force the plug or alter it in any way if the polarized plug will not fit in the outlet.
- Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.
- Do not expose power tools to rain or wet conditions.
- Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately.
- When operating a tool outdoors, use an outdoor extension cord marked “W-A” or “W”.
- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while tired or under the influence of drugs, alcohol, or medication.
- Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.
- Always use required PPE. Refer to the User’s Manual for recommended PPE for the specific power tool you are using.
- Avoid accidental starting of the tool. Be sure the switch is “OFF” before plugging the tool in.
- Remove adjustable keys or wrenches before turning the tool “ON”.
- Do not overreach. Keep proper footing and balance at all times when the tool is switched “ON”.
- Always secure and support the work piece to a stable platform before using the tool.
- Do not force the tool. Use the correct tool for your application.

- Do not use a tool if the switch does not turn “ON” or “OFF”.
- Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.
- Store idle tools out of the reach of children or other untrained personnel.
- Maintain tools with care. Keep cutting tools sharp and clean.
- Prior to use, check for misalignment or binding of moving parts, breakage of parts, cutting blades are free from nicks or damage, and any other condition that may affect the tool’s operation. If damaged, have the tool serviced before using.
- Use only accessories that are recommended by the manufacturer for your model.
- Tool servicing must be performed only by a qualified repairman.
- Never overload your electrical outlets or extension cords.

3.5. SAFE WORK PRACTICES FOR HAZARDOUS OFFICE/SHOP/YARD PRODUCTS

All employees who work with or near *controlled* products must have adequate WHMIS training prior to starting work, otherwise training will be provided. Training consists of web-based instruction and certification, an annual review of company environmental spill prevention practices and emergency response procedures at spring orientation, as well as hands-on practice training for certain products such as bear mace and herbicide. Controlled products are materials or substances that are regulated by WHIMIS legislation (Hazardous Products Act enforced by Labour Branch of Human Resources Development Canada).

- Always maintain good housekeeping at the facilities, and store all chemicals in their upright position to minimize the potential for a spill, which could lead to slips, trips, falls or environmental damage.
- Familiarize yourself with the WHMIS signs and what they mean as posted on the safety boards.
- Do not use any marked or unmarked product or substance in a container if you are not sure what it is.
- Let *Woodlands* know the name of the product, the manufacturer, and the item number every time you buy a new product with a WHMIS label. Provide prior WHMIS certificates to *Woodlands*.
- Ensure that controlled products are affixed with appropriate supplier labels or, in their absence, appropriate work labels.
- Ensure that controlled products transferred from one container to another have appropriate work labels and the new container meets the applicable CSA or ULC Standards.
- It is the responsibility of *Woodlands* to ensure up-to date MSDS information sheets are readily available to all workers for all controlled products used. Communicate to Management immediately if you notice anything missing from the MSDS binders in the shops or in the field trucks.
- Identify all hazardous products during the *Woodlands* annual chemical inventory and ensure any new products brought in to the company after the inventory are

accounted for, the appropriate WHMIS label is securely placed on all containers, and the MSDS is available in the correct location.

- Management will refer to MSDS sheets and legislation to ensure proper storage, handling, transport, required PPE, first aid, emergency equipment and disposal of all chemicals.
- Gasoline, volatile solvents or any other flammable substances must be stored in containers that are clearly labeled, approved for their contents and located in the storage trailer outside of the main facility building and away from electrical and heating equipment. Quantities of these chemicals in excess of that needed for one day's operation must be stored in a proper storage facility (well-vented and away from potential sources of ignition), isolated from the actual work areas.
- Flammable liquid containers must be electrically bonded when liquids are being transferred from one to another.
- Access to all exits, fire and safety equipment must be kept clear of obstructions at all times.
- See Section 6.1 Chemical and Biological Hazards and Other Harmful Substances for additional information on Occupational Exposure Limits and emergency washing stations.

3.6. SAFE WORK PRACTICES FOR PREVENTING AND FIGHTING OFFICE FIRE

3.6.1. FIRE EXTINGUISHERS

All fire extinguishers must be fully recharged and serviced after use and at periodic intervals. They must be tagged to verify that they are ready for service. Using a fire extinguisher on a small fire, and containing it until the Fire Department arrives, can save lives and/or property, so they are useful under certain conditions but extreme care should be taken when attempting to extinguish any fire in the office, shop or yard. Portable fire extinguishers are not designed to fight large or spreading fires as they have a very limited capacity. Also note that not all fire extinguishers are suitable for use on all fires. We have dry chemical extinguishers that can extinguish virtually all types of fires. The Edmonton facility also has a dry hose system that automatically sends a signal to the local health and safety authorities upon activation. Training for extinguisher use will be provided to all workers.

- *Woodlands* will install and maintain smoke alarms (ULC and\or CSA approved if hardwired) and fire extinguishers. Monthly facility inspection personnel must check the batteries and extinguisher charge levels.
- *Woodlands* will develop, post, and practice an escape plan for both facilities.
- Participate in fire drills and contact Management any time if you feel you require additional fire extinguisher training.
- Know where A-B-C type extinguishers for small fires are located. Signs are posted throughout the facilities.

- Call 911 immediately when a facility fire is noted. Proceed to use a fire extinguisher only if safe to do so.

When deploying a fire extinguisher, **the PASS System** can be a helpful reminder of the correct steps to follow when attempting to extinguish a fire:

- **P**ull the pin.
- **A**im low; point at the base of the fire
- **S**queeze the handle
- **S**weep from side to side keeping the extinguisher aimed at the base of the fire

3.6.2. DURING A FIRE

- Obey all emergency response procedures outlined in the Corporate Health and Safety Manual for Fire and Spill (Section 3.4.2)
- Close doors to each room as you leave to hinder fire spread.
- If smoke is pouring into a room with a closed door, or if the door feels hot do not open it.
- Open a window for fresh air and wait for the firefighters.
- If there is no smoke seeping into the room and the door does not feel hot, you can attempt to escape by opening the door slowly - if the hallway is smoky, stay inside and close door and call 911.
- Get out quickly and assemble at the muster station, call 911 from an exterior location if not safe to do so inside.
- After exiting the building, never return indoors to claim personal articles or pets

3.6.3. AFTER AN OFFICE FIRE

- Refer to Health and Safety Manual Section 3.9 for proper post incident management procedures.
- Give first aid where appropriate.
- Seriously injured victims should be transported immediately to hospital.
- Never go back inside a damaged building to assess damage - wait for firefighters to escort you.
- Discard food exposed to heat, smoke and soot.
- Contact the insurance agent - do not remove any contents until an insurance agent assesses the damage.

4. OPERATION OF A CHAINSAW AND BRUSHSAW

Concerns: Personal injury from use of chainsaw and brushsaw

Personal injury from falling trees and branches

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Training and instruction of chainsaw/brushsaw use
- Safe work practices and inspections of chainsaw/brushsaw, and PPE
- Supervision and job rotation when tiring

Personal Protective Equipment (PPE)

- Gloves
- Chainsaw chaps/pants
- Hardhat
- Ear protection
- Eye protection (safety glasses & face shield)
- CSA approved steel-toed boots or chainsaw boots

4.1. SAFE WORK PRACTICES FOR OPERATION OF A CHAINSAW

To avoid injury when operating a chainsaw workers will:

- Utilize PPE, and other safety equipment.
- Obtain proper training.
- Check the chainsaw frequently to ensure all parts are tight and chain is properly adjusted.
- Maintain the saw so that when the saw is idling the chain is stopped.
- Keep the chain bar to the rear while carrying the saw. If you trip, you won't fall on top of the chain. In addition, the dogs and the bars won't get caught in the brush with body of saw between leg and bar.
- Shut off motor when carrying the saw any distance.
- Hold saw firmly against body when using the tip of the bar to reduce impact from kick-back.
- When cutting limbs, remember that the top end of the bar causes the most kick-backs.
- Always work to one side of the saw to minimize injury.
- **When cutting fallen trees assess the tree for stress.**
- Carry a portable first-aid kit.
- Follow falling procedures for chainsaw:

- Accurately judge the lean of the tree.
- Plan a retreat route.
- Clear the ground of debris surrounding the tree and along the escape route.
- Always look above for falling debris.
- Take special care in making a proper undercut and leaving adequate hinge wood to maintain control of falling direction.
- Ensure that no one is in the immediate area and/or that they are aware of your activity.

4.2. SAFE WORK PRACTICES FOR OPERATION OF A BRUSHSAW

To avoid injury when operating a brush saw, employees and sub-contractors will:

- Utilize PPE, and other safety equipment.
- Obtain proper training.
- Inspect the brushsaw frequently to ensure all parts are tight, properly adjusted, and the saw has not loosened itself.
- Inspect the saw several times daily – ensure the blade is sharp. If not, file to appropriate sharpness or replace blade.
- Before attempting any maintenance make sure brushsaw is off.
- Shut off motor when carrying the saw any distance.
- Always work to one side of the saw to minimize injury.
- When cutting fallen trees, assess the tree for stress.
- Carry a portable first-aid kit.
- Stop your machine if any other person comes within 5 m of you.
- Good balance - wide stance.
- Even distribution of saw weight.
- Back and forth sweeping motion rotating at the waist.
- Hip thrust cutting action.
- Relaxed guiding motion of the arms.
- Straight wrists, bent elbows, erect posture.
- Accelerate to full throttle prior to commencing cut. Maintain smooth steady pace.
- Follow terrain and other natural boundaries.
- Ensure that the saw blade is free to turn before attempting to start the engine.
- Factors that could affect direction of fall:
    - Stem displacement.
    - Blade rotation.
    - Position on the blade of the cut (starting point, Ex. 3 o`clock).
    - Tilt of blade.
    - Force or thrust applied - follow through.

- Other Factors wind slope crown shape adjacent trees.
- Concept of stump displacement 2. Possible directions of fall.
- Forward to the right - blade angle left - starting position 8-9 o`clock - pulling thrust.
- Backward to the right - blade angle left - starting position 3-4 o`clock - pushing thrust.
- Backward to the left - blade angle right - starting position 3-4 o`clock - pushing thrust.

CHAPTER THREE: POWERED MOBILE EQUIPMENT

The task of getting from the office to the field work site is by far one of the most dangerous tasks involved for employees. Motor vehicle accidents and ATV accidents claim many field worker lives every year. It is *Woodlands* goal to never experience such a tragedy. *Woodlands* has adopted OHS's definition of powered mobile equipment: a land vehicle to assist in the movement or transport of an employer's materials, equipment, workers, and products as a means of access. For more information about powered equipment (chainsaws, tools etc) see Section 3.3 of the Office/Shop/Yard Chapter).

A list of powered mobile equipment-based job tasks within Woodlands North operations include:

- Operation of an ATV (quad, snowmobile)
- Transporting, loading and unloading ATV
- Winching an ATV
- Towing ATVs with other ATVs
- Operation of an Argo
- Crossing streams, rivers or creeks with powered mobile equipment
- Operation of pickup truck
- Trailer towing with pickup truck
- Securing loads on trailer or on back of pickup truck
- Getting pickup truck unstuck
- Fueling

Herein details the task hazards, methods of hazard control and safe work practices identified for each of the above mentioned job tasks.

1. ZERO ENERGY SAFE PRACTICE

Concerns: *Potential injury*

Putting oneself in the line of fire

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Safe Work Practices, education and mentor programs
- Company PPE Policy and Procedures- See Health and Safety Manual Section 3
- Lock Out Tag Out

Engineering

- Secure and or tie down equipment

Personal Protective Equipment (PPE)

- Gloves, chaps, eye protection
- CSA approved work boots
- Hard hat

Securing an object in a Zero Energy State means ridding it of any sort of potential or stored energy. Always verify that the object has been secured in a Zero Energy State after "locking it out". Be aware at all times of the potential release of energy while working on or around a machine. Below is a list of some objects that can have stored energy; however, for this Chapter we will only focus on Zero Energy Safe Work Practices for powered mobile equipment. Examples of objects that can have stored energy include:

- Jack- alls
- Trees
- Storage on shelves
- ATVs
- Trucks
- Chainsaws
- Bungee straps

1.1. SAFE WORK PRACTICES FOR ZERO ENERGY STATE OF ATVS

- Tie down the ATV or leave it in gear with the park brake on.
- Take extra caution in the winter when the deck of the truck may be icy and cause the ATV to slide even with the brake on.
- Park the truck on level ground when possible to help lessen the potential of sliding.
- Take note of the ground once the ATV is unloaded.
- Be aware that when turning off a quad it is usually in neutral, if the ground is sloped the ATV could possibly start to roll.
- Park quads on level ground when possible and get in the habit of putting the park brake on.

1.2. SAFE WORK PRACTICES FOR ZERO ENERGY STATE OF TRUCKS

- Always try to find the most level ground when parking a vehicle.
- Use the emergency brake when parking on a slope.
- Put a log or rock behind the tires to ensure that the vehicle is not going to roll when on a severe slope.

- Put something behind the tires when changing a tire.
- Use extra precaution when roads are icy or muddy- the brakes may be on but the truck may still move.

2. OPERATION OF A QUAD AND SNOWMOBILE

Concerns: *Personal injury/fatality from use of ATV*

Breakdown of ATV

Hazard Priority Rating: HIGH

Hazard Control: Administrative

- Training and instruction of ATV use
- Safe work procedures and practices
- Inspection and Maintenance Policy- See Health and Safety Manual Section 2.8

Engineering

- Construction of sideboards for flatdeck trucks
- Wide and stable quad ramps with securing apparatus for loading quads
- Motorized winches

Personal Protective Equipment (PPE)

- Use of helmets approved by the Canadian Standards Association, Department of Transportation/Federal Motor Vehicle Safety Standard
- Recommend gloves, protective eye wear, long pants
- CSA Approved Work boots
- Required fire suppression equipment specific to Client
- Recommend to carry a saw and rope
- Recommend a fold-up shovel for sled

2.1. SAFE WORK PRACTICES FOR OPERATING A QUAD OR SNOWMOBILE

Projects that fall under the Inventory, Reclamation, Ecology & Silviculture Business Units will require extensive work with ATVs (quads, snowmobiles). To avoid injury when using these ATVs, employees and sub-contractors will:

- Utilize the required ATV PPE.
- Obtain proper training and use knowledge gained.

- Do not operate machines at speeds too fast for your skills or the conditions. Manufacturer stickers on Honda units provide additional information.
- Never speed or stunt when in control of the machine.
- **Never drive above 25 km/hr on any road.**
- Never attempt maneuvers that you are not comfortable with - ask for help from other crew members.
- Always securely tie down loose items on the ATV.
- Avoid rushing/complacency when using ATVs and walk or drive slowly through all unknown hazards the first time to a new site.
- Perform pre-ride inspections DAILY on the ATV.
- Whenever an ATV is not being used, park it on level ground with the emergency brake engaged.
- Avoid carrying passengers.
- Avoid tight turns and, when driving downhill, drive straight down rather than at an angle – be in low gear to minimize speed.
- Climb hills in low gear to avoid the chance of a back flip. Do not turn suddenly, pop the clutch or rev the throttle, as the ATV will pivot on the back axle and flip over, crushing the rider.
- Do not drive an ATV that needs repair - keep it in good mechanical condition.
- When using a winch ensure not to exceed manufacturer's specifications and place a coat or blanket over the winch cable to help prevent the cable from springing back. Be careful of fingers and always wear gloves when using a winch.

Pre-ride Inspection

Inspecting the mechanical condition of your ATV before each day's use is important for minimizing the risk of injury or becoming stranded. It also minimizes damage to the machine. The owner's manual should be used to ensure proper understanding of all critical points on your machine.

Check the following components before using your ATV:

- **Tires** - Always maintain the recommended tire pressure consistently in each tire. If the tires on your ATV have unequal pressure, the ATV will pull toward the tire with the least air pressure. A gauge designed for low pressure should be used. Wheel lug nuts should be checked to make sure they are tight. Grasp each tire at the front and rear, and then try to rock the tire on its axle to check for worn-out axle bearings and loose nuts. Always use a torque wrench while following the tightening procedures and specifications for all fasteners outlined in your operator's manual.
- **Throttle** - Check throttle operation while moving the handlebars fully to the left and then fully to the right. An accumulation of mud and dirt can restrict cable

movement and prevent the throttle from closing.

- **Brakes** - Your brakes are a crucial part of riding and they must always be in top condition. Make sure they work smoothly and that they are in adjustment according to the instructions in the owner's manual.
- **Lights and switches** - Be sure all lights are working. Check engine stop switches by switching them off and on during the warm-up period.
- **Oil and fuel** - Check the oil and fuel with the engine off. Look for fuel or oil leaks.
- **Drivetrain and chassis** - Inspect your chain for proper adjustment, adequate lubrication and signs of wear. If your ATV is equipped with a drive shaft rather than a chain, check for oil leaks and maintain its oil supply as outlined in your owner's manual. Rough terrain will loosen chassis parts. “Look and feel for loose parts while the engine is off. Shake handlebars, footrests and other similar components before each ride, and periodically check major fasteners with a wrench.” (Baker and Lee, 2002)
- **Free movement of track**, **bogies**, **rollers on sleds/snowmobiles.**

Obey all municipal and provincial safety regulations and bylaws regarding the use of ATVs by:

- Always use an approved helmet and protective gear.
- Never use on public roads.
- Never use with drugs or alcohol.
- If crossing a highway is necessary, the driver must first
    1. stop the ATV
    2. all passengers must be off before crossing
    3. driver must yield to all vehicles and persons on the highway
    4. drive the most direct and shortest route across

Never operate:

- Without proper training or instruction.
- At speeds too fast for your skills or the conditions.
- On public roads – a collision can occur with another vehicle.
- With a passenger – passengers affect balance and steering and increase risk of losing control.

Always:

- Use proper rider techniques to avoid vehicle turnovers on hills, rough terrain, and in turns.
- Avoid paved surfaces – pavement may seriously affect handling and control in turns.

2.2. SAFE WORK PRACTICES FOR TRANSPORTING, LOADING, AND UNLOADING QUADS AND SNOWMOBILES

Always obey the following when transporting, loading and unloading an ATV:

- ATVs must be transported in a safe manner, either in the back of a pickup, on a trailer, or on an approved pick-up mounted ramp.
- The law states that a minimum of 2 tie down straps are used for every Quad. Tie-downs must be in good condition. If you are using 1000lb tie-downs use four for every corner of an ATV, and if using 5000lb tie-downs use two for every ATV.
- When transporting an ATV on a crew cab use the hooks that are in the box or the hitch. You must have one strap on the front and one strap on the back of the ATV.
- Only ramps which are in good condition and will support the weight of the ATV and rider can be used to load/unload the machines. Long ramps must be used when loading and unloading onto a flatdeck.

2.3. SAFE WORK PRACTICES FOR LOADING AND UNLOADING QUADS/SNOWMOBILES ONTO A FLAT-DECK, REGULAR PICK-UP, OR TRAILER

Loading and unloading of an ATV is the source of many injuries and accidents in Alberta. This task is completed several hundred times within a summer season; therefore, it is easy to become complacent.

- Treat each loading/unloading with caution and communicate with your partner.
- Position the flatdeck, regular pick-up, or trailer on as flat of ground as possible and away from heavy traffic areas. (Ensure the trailer is secured to the truck prior to attempting to load an ATV)
- Clean flatdeck of any debris, mud or snow before loading.
- Attach the ramps securely. Make sure both ends are even and on flat ground.

Method 1 for Flatdeck: metal ramps contain a drill hole on the portion that rests on deck of the pick- up. This hole is intended to lineup with a hole previously drilled into the flatdeck. Once holes are lined up, place metal pin/bolt through the holes securing the ramp to the pick-up bed.

Method 2 for Flatdeck or Regular Pick-Up: use tie-down straps to secure the ramps to the bed of the truck.

Method 3 for Trailers: trailers often include a set of ramps that fasten to the trailer. If there is no mechanism to fasten the ramps to the trailer use tie-down straps.

1. Have your partner make minor adjustments to the ramps to ensure they line up with the front ATV tires.
2. Make sure your partner watches you load the ATV - if you have a problem they can help.
3. Ensure you are wearing a helmet and slowly drive up the ramps and ease into the flatdeck or regular pick-up. Stop once on the bed of the truck. **ALWAYS have the far sideboard up when loading into a flatdeck pick-up.**
4. Shut off the ATV once on the flatdeck. Move ATV into appropriate position for travel. Put the emerg**ency brake 'on' and t**he ATV into first gear. Tie down the ATV for safe transport.
5. Take keys out of ignition when traveling. Keys have been known to fall out of ignition when traveling. Store keys in the same location within the truck.

There are two ways to safely unload an ATV from a flatdeck, regular pick-up, or trailer:

1. The first way is for both people to be off the ATV and to collectively walk the ATV down the ramps while the ATV is in reverse. Clearly communicate as to who will control the handlebars. Use caution, ensuring not to touch the throttle while unloading. Use slow controlled movements.
2. The second way is to reverse off the vehicle while driving the ATV. Again, your partner should ensure the ramps line up with your back tires before you back down. Practice these methods and use the one that you feel most comfortable with.

2.4. SAFE WORK PRACTICES FOR WINCHING A QUAD OR SNOWMOBILE

Gloves must be worn when using a winch to protect you from rope burn and any burrs or slivers. Use a heavy coat or blanket to throw over the line to prevent it from springing back. The winch can be used for a variety of functions: going over logs, getting unstuck, loading onto truck.

Safety procedures to use a winch:

- Read the Operations guide and Basic Guide to Winching Techniques in order to fully understand your winch and the winching operation.
- Never operate a winch when under the influence of drugs, alcohol or medication.
- Never exceed winch or wire rope rated capacity. Double line using a snatch block to reduce winch load.
- Always inspect winch installation and wire rope condition before operating winch. Frayed, kinked or damaged wire rope must be replaced immediately.
- Loose or damaged winch installation must be corrected when appropriate.
- Prior to winching, remove any element that may interfere with safe winch operation.
- Always take your time when rigging for a winch pull.

- Never winch with less than 5 wraps of wire rope around the drum, the wire rope could come loose from the drum.
- Always stand clear of wire rope and load during operation.
- Never touch wire rope or hook while someone else is at the control switch or during winching operation.
- Always keep hands clear of wire rope, hook loop, hook and fairlead opening during operation, and when spooling in or out.
- Never use winch to tow other vehicles. Shock loads can momentarily exceed capacity of wire rope and winch.
- Always use care to not damage your frame when anchoring your vehicle during a winching operation.

Choosing an Anchor Point:

- Choose a solid anchor point such as a tree, large rock, stump, or other vehicle.
- When using a **tree** use a tree strap rather than a chain to attach the winch rope. The chain can damage or kill the tree.
- Never wrap the cable around an anchor point and back on itself, this can cause the winch cable to snap or damage, unless a sweater is tied to the cable.
- If possible, choose an anchor point directly in line with the ATV, rather than to the side at an angle. Angle pulls are less efficient and may cause winch cable to wrap only on one side.
- The more line you spool out, the greater the load your winch can handle.
- If choose another vehicle as anchor point, be sure to block wheels. Put vehicle in neutral and set the park brake.
- Always be certain the anchor you select will withstand the load, and the strap or chain will **not** slip.

Using a winch:

- Put the winch on free-spool by turning the dial.
- Attach the winch to an anchor point.
- Turn the free-spool off when ready to winch.
- The quad must be running when using the winch so the battery does not get drained.
- If the winch comes from the stuck quad to another quad, then the stuck quad must be in first gear with a light pressure on throttle as winch is spooled in.
- If winch comes from free moving quad then that quad must be put in reverse with light pressure on throttle as winch is reeled in. The stuck quad must be in first gear with light throttle pressure. This takes some strain away from the winch and does not make the winch become a towing operation.
- If winch anchored to non-moving structure, then quad should be put in first gear with a light pressure on throttle as winch is spooled in.

- Hook the end of the winch cable to a secure location on the truck and winch the quad onto the truck. Be sure to leave the quad in gear and apply pressure to throttle as the winch is spooled in.

How to wind a winch:

- Tie the hook of the winch to the bulb of the truck. Make sure the hitch is properly secured.
- Put the winch on free spool and backup the quad.
- Take off free spool to roll up the winch cable.
- Put the quad in first gear and slowly winch the quad to the truck. Do not let the cable go slack.
- Move the quad back and forth so the cable is wound up on all parts of the spool, not just bunched up on one side.

2.5. SAFE WORK PRACTICES FOR TOWING ATVS WITH OTHER ATVS

Snowmobile:
Tie tow rope through the loop at the front of the skies and then back to the lead sled in the form of a triangle. The other person should push sled out if stuck or they can ride and steer if sled will not start or is inoperable.

Quad:
Tie tow rope to rack or frame of quad and person should steer that quad as well as attempt to start it. If towing, ensure the quad is in neutral.

3. OPERATION OF AN ARGO

Concerns: *Personal injury/fatality from use of Argo*

Breakdown of Argo-stranded in remote area

Hazard Priority Rating: HIGH

Hazard Control: Administrative

- Training and instruction of Argo use
- Safe Work Procedures and Practices
- Inspection and Maintenance Policy- See Health and Safety Manual Section 2.8

Engineering

- Trailer specific for Argo loading and transport is available

with Argo rental.

- Motorized winches

Personal Protective Equipment (PPE)

- Use of helmets approved by the Canadian Standards Association, Department of Transportation/Federal Motor Vehicle Safety Standard
- Recommend gloves, protective eyewear, long pants
- CSA Approved Work boots
- Required fire suppression equipment specific to Client
- Recommend to carry a saw and rope

3.1. SAFE WORK PRACTICES FOR OPERATING AN ARGO

Projects that fall under the Inventory, Reclamation, Ecology & Silviculture Business Units might require work with Argos. To avoid injury when using an Argo, employees and sub-contractors will:

- Utilize required PPE.
- Obtain proper training and utilize knowledge gained. Heed all manufacturers' warnings.
- Always wear seatbelts.
- Wear hearing protection when used for extended periods of time.
- Although amphibious, never operate an Agro through open water without additional training.
- Do not operate machines at speeds too fast for your skills or the conditions.
- Never speed or stunt when in control of the machine.
- Average speed for rough terrain is 10-12 km/hr. Argos are not built for speed.
- Be cautious of side hills, Argos can tip and roll.
- Never attempt maneuvers that you are not comfortable with - ask for help from other crew members.
- Always securely tie down loose items.
- Avoid rushing/complacency when using Argo, and walk or drive slowly through all unknown hazards the first time to a new site.
- Perform pre-ride inspections on Agros.
- Start the Argo in accordance with the proper starting procedure (located on Argo pre-ride inspection form).
- Whenever an Argo is not being used, park it on level ground, in neutral, with the emergency brake engaged.

- Do not carry passengers in back without a bench seat and seatbelts.

Pre-ride Inspection

Inspecting the mechanical condition of your Argo before each day's use, as well as at critical hour usages, is important for minimizing the risk of injury or becoming stranded. It also minimizes damage to the machine. The owner's manual should be used to ensure proper understanding of all critical points on your machine.

Check the following components before using your Argo:

- **Tires and Tracks** - Always maintain the recommended tire pressure consistently in each tire (Front 5, Middle 7.7, rear 6 psi). If the tires on your Agro are not at the correct pressures the Argo has an increased chance of losing a track. Tire pressures should all be at 6psi if tracks are not needed. A gauge designed for low pressure should be used. Wheel lug nuts should be checked to make sure they are tight. Check track and track guides for missing or damaged pieces.
- **Air Intake** – Ensure air intake is free of debris (I.e. leaves, twigs, mud).
- **Throttle** - Check throttle operation while moving the handlebars fully to the left and then fully to the right. Ensure the twist grip returns to the starting position upon release. An accumulation of mud and dirt can restrict cable movement and prevent the throttle from closing. Recheck the throttle after starting.
- **Drain plugs** – Ensure drain plugs are secured at the start of the day and unscrewed at the end of the day to allow for any water to drain.
- **Brakes** – Check both the handle and park brake.
- **Battery** – check battery levels, a voltage while running should be above 12V. Do not use Argo if battery levels fall below 12V.
- **Oil, transmission, coolant and fuel levels** - Check the oil, transmission oil, coolant, and fuel with the engine off. Look for fuel, coolant or oil leaks.
- **Drive chain and sliders** - Inspect your chain and sliders for proper adjustment, adequate lubrication and signs of wear after 8 hours of use. Chains should be lubricated every 8 hours of running time with a food grade lubricant.
- **Servicing** – Argos should be returned to the rental company after 25 hours of use to be properly serviced. Servicing will include the greasing of the inner axel bearings and outer axel flange.

Obey all municipal and provincial safety regulations and bylaws regarding the use of ATVs, including Argos, by:

- Always use an approved helmet and protective gear.
- Never use on public roads.
- Never use with drugs or alcohol.

- If crossing a highway is necessary, the driver must:
    - stop the Argo
    - yield to all vehicles and persons on the highway
    - cross perpendicular to the road

The following is taken off the Argo Owner's Manual (No. 671-21, 05/2013):

- Plan your route, drive at a reasonable speed for the terrain, and pay attention.
- Never overload the Argo, load capacities can be found in the owner's manual.
- Avoid climbing or attempting to transverse steep hills.
- Avoid using the Argo on asphalt or concrete, this cause's premature wear of tires or tracks.
- Do not drive an Argo that needs repair - keep it in good mechanical condition.
- Know or be trained in the loading and unloading as well as some basic maintenance techniques.
- When using a winch ensure not to exceed manufacturer's specifications and place a coat or blanket over the winch cable to help prevent the cable from springing back. Be careful of fingers and always wear gloves when using a winch.

3.2. SAFE WORK PRACTICES FOR TRANSPORTING, LOADING, AND UNLOADING ARGOS

Always obey the following when transporting, loading and unloading an Argo:

- Argos should be transported on a trailer designated for the Argo- available upon rental.
- The Argo is attached to the trailer by a chain in the front and a 5000lb ratchet in the rear.
- Place a lightweight ratchet strap across the hood of the Argo, or remove the hood and place within the vehicle.

4. CREEK/STREAM/RIVER CROSSINGS WITH AN ATV

Concerns: *Drowning or being injured in high or fast water*

Falling through ice

Hazard Priority Rating: LOW

Hazard Control: Administrative

- Safe work practices
- Buddy system

Engineering

- Construction of adequate bridges

Personal Protective Equipment (PPE)

- All ATV protective gear

4.1. SAFE WORK PRACTICES WHEN CROSSING A CREEK WITH AN ATV

Stream crossings via ATV are often required when working in backcountry conditions. Planning your route in advance must be done to minimize the number of crossings required. Despite planning measures, small or unmapped streams may be occasionally encountered while traveling to remote sites. In these situations, the site conditions including existing bridge condition (if applicable) must be inspected and evaluated to assess the risks of crossing.

- If the channel is fast flowing, then the entire channel should be walked to determine if there are any falls or unsafe zones downstream.
- Assess all marginal crossing sites by foot. Do not become complacent and use a well-worn summer crossing site without first getting off the ATV to evaluate its condition.
- There should be two people onsite when assessing whether a creek is safe to cross; both parties must agree before crossing.
- If using the crossing site regularly, you must reassess it regularly.
- Assess the hazards such as: amount of water, flow/speed of water, thickness of ice, creek bed, and bank depth and stability.
- You must be able to see the creek bottom for the duration of the crossing.
- If the water is deep or murky you must get off the quad and wade through the creek to assess the hazard. Use a pole or a long stick to assist in gauging if the creek is of safe depth to cross.
- After determining the watercourse is safe to cross:
    - Make sure you and all other crew members are ready for an emergency, before the stream is crossed.
    - Make sure you undo the snaps/buckles on cruise vest before the crossing.
    - Cross a frozen creek at a slow constant ATV speed.
    - If the ice breaks and the machine goes down, separate yourself from the machine, remove your cruise vest immediately.
    - Initiate ice rescue procedures. See Section 12 in the General Chapter.

Recommended minimum ice thicknesses for ATV crossing are as follows:

- 3” (7 cm) or less – STAY OFF.
- 4” (10 cm) – ice fishing, walking, cross country skiing.
- 5” (12 cm) one vehicle – snowmobile or ATV.

- 8 – 12” (20-30 cm) – one vehicle – car or small pickup.
- 12 – 15” (30-38 cm) – one vehicle – medium truck.

Ask yourself the following questions every time you cross a frozen water body:

1. Is it safe to cross at this location?
2. Can we cross here at the end of the day or will it be thawed?
3. Is the channel too deep or fast flowing to not freeze properly?
4. Does the creek need to be crossed, or is there a better location?
5. Can we use an alternative access route to get on other side of channel?
6. Does the work need to be done in the winter or can we do it in late spring or summer?
7. Has the weather been cold lately or has it recently been warm?
8. Has it recently snowed or rained?
9. Can we safely cross the channel from the other side or is it too steep, not frozen?
10. How many times are we crossing here? (build bridge)

5. DRIVING BEHAVIOR, LOGGING ROADS, AND COMMUNICATIONS

Concerns: *Encounter with loaded logging trucks*

Vehicular accidents

Poor road conditions

Hazard Priority Rating: HIGH

Hazard Control: Administrative

- Instruction of driving on winter roads, 4x4 on muddy or dusty roads
- Safe work practices
- Preventative maintenance and inspections of company vehicles
- Properly securing loads

Personal Protective Equipment (PPE)

- Two-way radios
- Truck kits (first aid kit, tow rope, fire extinguisher etc.

***Woodlands* employees must follow all Federal, Provincial, and Municipal laws, and client policies pertaining to driving company vehicles!**

5.1. SAFE WORK PRACTICES FOR DRIVING AND MAINTENANCE OF A TRUCK

Remember, if you do not feel safe about driving in certain conditions, then trade with another crew member. The driver has the responsibility to drive safely and the passengers have the right to refuse to ride with someone that they feel is not driving safe. The passengers have a responsibility to act in a safe manner to aid the driver. **Remember- truck inspections must be done at the beginning and end of every shift.** Talk to management immediately if discrepancies or maintenance issues become apparent on the inspections.

- Always use seatbelts when driving and ensure that passengers do the same.
- Never drive under the influence of drugs (prescription or otherwise) or alcohol.
- Never operate your cell phone, SPOT or other technical devices while driving. This includes use of hand-free devices. Pull over to a designated pull out station for all texting, phoning etc.
- Report and tag-out/lockout any vehicle in need of repair or maintenance.
- Do not pass on highways if conditions are icy.
- Do not pass on bush roads without verbal or direct communication.
- Do not follow closer than 100m to any truck on a dirt road.
- When being passed head-on on gravel roads by any vehicle, slow down and pull towards the side of the road, depending on the vehicle you can stop or drive slower.
- Drivers must engage the reverse alarm on their pickups. If the pickup does not have this function use a spotter or walk around vehicles prior to backing up.
- Do not park at an active or heavily used H2S well site. Report any suspected H_2S leaks immediately to your project manager.
- Drive to road conditions, not speed limit.
- Ensure 100% visibility at all times, 360 degrees.
- Do not keep with flow of traffic if speeding, let tailgating vehicles pass.
- Avoid rushing/fatigue at end of day.
- If a crew encounters slippery or icy roads - call the office and let other employees know.
- Stay to the right when approaching sharp turns or hill tops where visibility is restricted.
- Do not drive in the dust cloud of other vehicles. Pull over to the right and slow down (ensure you pull over to avoid being rear-ended).
- Re-torque all tires (by a professional) that have been changed after 80 km. Change tires with care. This should only be done by someone who feels confident and trained.
- Keep the cab and floor area clean and free of loose materials that may jam in controls.
- Keep headlights on when visibility is restricted (dust, fog etc.).
- Headlights must be clean regardless of condition of truck.

- Cruise control and over-drive should not be used if truck is in 4x4, on steep slopes, on gravel roads or conditions are icy and/or slippery.
- Use pull-through parking techniques or back in to parking spots at all field and office based work sites. This is to ensure you can directly pull out of spot given any emergency event. When able face the truck heading "home" when parked in the field.

5.2. SAFE WORK PRACTICES FOR DRIVING IN 4X4

Driving a large pick-up truck with rear wheel drive is very different then driving a car or SUV with front/all-wheel drive. The basics need to be explained so employees know the limitations and strengths of this type of truck.

- In 4x4 drive smoothly – no abrupt turns and no sudden braking.
- If there is no load over the rear tires in the winter, then 4x4 must be used at all times when the conditions are likely of being icy or slippery.
- When driving in 4x4, the turning radius is reduced thus you should not make tight turns around corners.
- 4x4 trucks are usually heavier than non-4x4 vehicles so they require more time to stop. Therefore, you must drive according to the conditions of the road - not the posted speed limit.
- With ABS brakes you need to apply firm, steady pressure to stop. ABS helps you maintain some degree of steering while you brake.
- There are two kinds of skids to recognize and recover from. They are:
    1. Oversteer Skid: occurs when the rear wheels break free and skid sideways toward the outside of a curve. Slow down before you drive through a slippery turn. As soon as you feel the rear of the truck loose traction, turn the steering wheel slightly to the direction the rear wheels are sliding. If the rear wheels are sliding left into oncoming traffic, then you should turn the steering wheel slightly to the left, this is known as counter-steering. Remain on the accelerator and d**o not apply the brakes.** Do not crank the wheel quickly and to the wrong side, because this may cause instability of the vehicle and it could roll.
    2. Understeer Skid: this occurs when you turn the steering wheel to try to steer around a curve, but the front end keeps going straight. It can happen if you make the mistake of accelerating too much as you enter a slippery turn. The acceleration shifts the weight of the vehicle to the rear wheels, and the front wheels lose traction. Avoid an understeer skid by slowing down before the curve, and coasting around the turn until you're well into it. Recover from an understeer skid by turning the steering wheel toward the direction the front wheels are sliding. Come off the accelerator to shift weight back onto the front wheels, then gently turning back into the curve.

- If the road is icy and you feel as though the truck is going to spin out, put on chains.

5.3. SAFE WORK PRACTICES FOR RADIO CONTROLLED BUSH ROADS

- **Speed limits must be obeyed at all times**.
- Bush roads used by *Woodlands* vehicles become very slick and slippery. **Slow down** and use your lower gears and 4x4.
- Turn on headlights on all off-highway roads and always wear seatbelts.
- **Read your truck manual**. Each truck is slightly different. Some trucks require you get out of the truck to manually lock the hubs. Others do it automatically when you switch into 4x4.
- New employees who have never driven bush roads must prove their capabilities before driving into new areas. No new employee can drive company trucks without first talking with crew supervisors or project managers.
- The winter log haul is the most dangerous time to be on the roads. Always make sure you have a truck radio with the appropriate logging channels programmed before going to the field.
- Communications while on the road are via two-way VHF radio. Loaded logging trucks will call their location (kilometer marker) to all oncoming traffic. If a loaded truck (includes low-beds, fuel trucks and reefer trucks) is close, pull over and stop until the truck has passed.
- *Woodlands* will call their kilometers on radio controlled roads at least every other kilometer during heavy traffic times, less so when the haul roads are quiet.
    - Ex. " Empty pickup truck km 7" when heading in to the bush
    - Ex. "Loaded pickup truck km 7" when leaving the bush
- Employees will announce the presence of any "silent" vehicles (without a radio) we encounter on the road (their location, direction of travel, and vehicle type).

5.4. SAFE WORK PRACTICES FOR TRAILER TOWING

- When hauling with a trailer, ensure the ball and hitch are securely locked in and no chains are dragging.
- At the beginning of each day ensure all proper connections and hook-ups are used properly and in good operating condition (hitch, ball, lights, and safety chains).
- Pre-inspection of truck and trailer must be done every day before use.
- Do not overload the trailer. Ensure the gross vehicle weight and tongue load is not exceeded.
- Maneuvering a trailer can be tricky. Persons with no experience maneuvering a trailer should not do so on the off-roads without first gaining some practice and experience.

- Remember, towing a trailer changes the vehicles maneuverability. Plan ahead and take additional caution. Some trailer towing tips are:
    - Counter steering out of a skid with the truck and trailer can be quite tricky, but are the same procedures as with a truck.
    - If the wind pushes the trailer to the right then you should steer to the left to correct.
    - Keep the vehicle on the road and slow down.
    - When backing up the trailer turns the opposite way you turn your wheels. Make slow, easy steering adjustments. Practice this skill until you are comfortable with it. Make wider turns at curves and corners. Because your trailer's wheels are closer to the inside of a turn than the wheels of your tow vehicle, they are more likely to hit or ride up over curbs.
- Ensure the load is secure and will not shift during travel.
- Assess conditions of a road to see if too icy, slippery or room to turn around before continuing with a trailer. All people need to get out of the truck and walk the questionable location. Unload sleds if not sure if trailer will make up a hill.
- If you find you are continually going to the same location, leave the ATV's in the field chained to a tree (min of 200m from main road). Find a secure place to lock up the trailer in town and continue to check to make sure that it is secure.

5.5. SAFE WORK PRACTICES FOR SECURING A LOAD

- Ensure everything in truck box is tied down properly including shovels and Pulaskis.
- Ensure all quads are ratcheted to the truck in an X format that allows for 4 tie in points. Snowmobiles must also have 4 tie in points. Tie the two fronts and two ends together.
- Secure the ramp in place with a ratchet when there are no ATV's in the truck box.
- If there is no headache rack in the truck box, make sure you put a piece of plywood or lumber between the ATV and the back window.
- Make sure there is no unnecessary equipment in the truck that will become a projectile if there is an accident.
- Secure all equipment and personal belongings inside the truck.
- Make sure the load is checked prior to travelling on highway.

5.6. SAFE WORK PRACTICES FOR TOWING A TRUCK

If a vehicle is broken down and needs to be towed to town for repairs the situation must be assessed to ensure safety of the employee and the potential for damage to property is minimized. Often the vehicle can be towed out of the bush to the pavement using a tow rope, a tow truck can then transport the vehicle to town. If towing a vehicle on the bush

roads you must not exceed 15km/hr to reduce dust, increase visibility for everyone, and to prevent incidents from flying rocks.

5.7. SAFE WORK PRACTICES FOR GETTING TRUCKS UNSTUCK

Towing

Towing a truck that is stuck can be a dangerous situation if not done correctly and safely. There are two main ways to tow a truck out of the mud: by trucks and quads.

Trucks:

- Obtain help through another crew or other another truck.
- Depending on road conditions, make sure stuck vehicle is in 4x4 low before towing.
- Make sure there is dry ground for towing truck to pull the vehicle out, before getting both vehicles stuck.
- Put safety triangles up at blind corners or hills to alert on-coming traffic.
- Tie tow rope to frame-mounted tow hook or use a short sling and tuck it up around the framehook of truck.
- Never tie a tow rope on bulb of hitch. The square tube of the Class III receiver hitch will accommodate the looped end of a recovery strap. Slide it in and use the pin that comes with the hitch to hold the loop.
- Tie a blanket or coat over tensed rope near stuck vehicle.
- Lead vehicle to tighten tension in rope.
- Stuck vehicle to be in gear with driver put slight pressure on throttle.
- All by-standers to be at non-towing end of the stuck vehicle.
- Make sure vehicle is fully unstuck before undoing the tow rope.

Quads:

- Unload quad from truck.
- Determine the best placement for the quad to pull out the truck.
- If a winch is used to winch out truck, make sure a blanket or sweater is tied to each point of connection (truck and quad) in case the cable snaps.
- The truck should be in 4x4 low and in gear to the direction that the quad is pulling.
- The quad should be placed behind a permanent structure (stump, large tree or large rock) that will not move when towing/ winching occurs.
- The quad driver will wear all protective equipment as required to operate an ATV and winch.

6. REFUELING

Concerns: *Injury due to explosion*

Spill

Skin exposure to harmful substance

Hazard Priority Rating: MEDIUM

Hazard Control: Administrative

- Safe work practices

Personal Protective Equipment (PPE)

- Gloves

6.1. SAFE WORK PRACTICES FOR REFUELING VEHICLES/ATVS

- Turn off engine.
- DO NOT smoke or use an ignition source.
- DO NOT use your cell phone (turn it off or leave in vehicle).
- DO NOT re-enter your vehicle during fueling (static electricity could produce a spark).
- Wearing gloves is mandatory when refueling vehicle or jerry can in winter

Transportation:

- Jerry cans must be properly labeled with a WHMIS label containing the contents.
- Jerry cans must be properly secured on the back of a truck with a tie strap.
- Any jerry cans that are left in field with ATV must not have any leaks, the air release must be open in summer, and must not have the potential to spill, they must not be stored within 100m of a stream.
- Jerry cans that are stored in a tent camp must follow the specific Clients Environmental Management System (EMS).
- All ATVs will be refueled on the road or seismic line.
- No ATVs will be refueled near (within 50m) or in any watercourse or water body (streams, wetlands, lakes).