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# POLICIES

*Please note the formatting change to this manual. To comply with our **Environmental Policy** and conserve paper used in this manual – all direct quotes from the Occupational Health & Safety Act, Regulation & Code have been removed. However, some sections may reference this publication.*

*It should also be noted that Element 3 no longer has one policy or procedure per page, but has been reformatted to conserve paper used. Ensure you use the table of contents to quickly find the section you are looking for.*

## HEALTH & SAFETY RULES & REGULATIONS

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Purpose is to develop, establish and maintain practical and effective Health & Safety policies and procedures, supplemental to Occupational Health and Safety regulations. It also must ensure that all employees performing work or having business at Swab Master Ltd. comply with such policies and procedures.

Management, who is responsible for the daily operation of the company, is responsible for this policy.

Health and Safety rules and regulations are designed to prevent injuries, damage, accidents and similar down grading incidents, in the workplace. Such rules and regulations in place at Swab Master Ltd. are considered conditions of employment and must be adhered to at all times during employment. All levels of employee are responsible for understanding and adhering to the Health & Safety Program as well as understanding their rights and responsibilities under Occupational Health & Safety legislation.

**Management along with employee input shall develop and implement Health and Safety policies and procedures.**

Such policies and procedures shall be approved by the Management prior to becoming official company rules.

### DEFINITIONS:

**Rule:** A directive that governs and controls conduct or action, and that is instituted by an organization. Rules should be enforced. Action should be taken every time a rule is violated, and not only when some loss occurs because of the violation of rules.

**Regulation:** An ordinance, a law, or a directive set by an outside organization or agency, such as Occupational Health and Safety, for control of people and their environment.

*Since our developing safety program already contains assignments of responsibility; safe work practices; and job procedures;  
And since regulations (discussed below) also control behaviour, rules have been kept to a minimum.*

## HEALTH & SAFETY RULES

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1. All necessary precautions must be taken to ensure the safety of all personnel at or around the work site.
2. Special attention must be paid to the young worker between the ages of 15 and 24. The new and young worker must be recognized as such by placing a green hand sticker on his hard hat and will remain there for at least 3 to 6 months, or until the employer determines the new and young worker has passed orientation and is able to perform all job tasks with an understanding of the rules and regulations.
3. Property and equipment on or adjacent to the work site must be properly protected from possible damage. Workers are required to perform a Daily Rig and Tank Truck Inspection and record it on the *Rig and Tank Truck Inspection* forms. During daily operations employees are required to perform an inspection every time the Derrick is raised in the air as per the guidelines provided by Kodiak Engineering.
4. Workers are to ensure all deficiencies are identified and if possible corrected by the employee.
5. Workers are to ensure the equipment and PPE is in proper state prior to use.
6. Any safety concerns expressed by the client must be immediately adhered to, with appropriate action taken.
7. **Near misses:** are events, which did not cause injury or damage but still provide a useful lesson. These events must be reported using the "Incident / Near Miss" reporting form. Forms may be found in the back section of this manual and at the main Swab Master Ltd. branch

8. **ALL accidents** no matter how small must be reported immediately to your Supervisor or Manager. These include vehicle accidents, lost tools, personal injury accidents, etc. These events should be reported on the "Incident/Near Miss" form.
9. Swab Master Ltd. will conduct general safety meetings on a monthly basis with their employees. Employees must be in attendance if they are available. A yearly company meeting will take place during Spring break up.
10. **Pre-job/Tailgate Safety Meeting /JSA:** Before any job is started, a pre-job/tailgate safety meeting will take place to discuss the job and any hazards with all persons involved. If the scope of work changes another pre job / assessment will be done before continuing work. All related procedures are to be discussed, understood, and documented by all persons. All employees should have "Hazard Identification, Assessment and Control as well as Inspections training to compliment this process.
11. **Records** of employee safety training are kept in the office of Swab Master Ltd. Workers will be notified of any updates required, but it is also the responsibility of the employee to keep track of their expiry dates. Our program must ensure workers are competent to operate equipment and perform job tasks.
12. Employees taking any medication must report this to their supervisor. The supervisor may then place restrictions on the employee's activities, as he feels appropriate.
13. Any handicaps such as hearing loss, poor vision, color blindness, phobias, or otherwise, should be reported.
14. **Right to Refuse Dangerous Work:** If an employee is of the opinion that performing a job will endanger person(s) on the work site that employee shall:
  - (a) Shut down operations.
  - (b) Notify the customer site representative to resolve the problem.
  - (c) Notify the office of Swab Master Ltd. if the problem is not dealt with in an effective manner.
  - (d) Continue only after authorization by the employee's supervisor.
15. **Safety Devices:** Employees shall not operate equipment where safeguards have been removed except for maintenance. Caution must be exercised, in this case, to minimize potential hazards. Hazard assessments must be done on equipment that poses a hazard, such as the use of the welder. Employees shall adhere to our lockout/tag out policy.
16. **Equipment:** All Swab Master Ltd. equipment (rigs, tanks, pickups, tools, etc.) will be maintained and kept in safe, operational, effective & efficient condition. Regular inspections and maintenance of vehicles and tools will be documented.
17. **Safeguards:** An employer must provide safeguards if a worker may accidentally, or through the work process, come into contact with:
  - (a) moving parts of machinery,
  - (b) points of machinery at which material is cut, shaped or bored,
  - (c) surfaces with temperatures that may cause skin to freeze, burn or blister,
  - (d) energized electrical cables,
  - (e) debris, material or objects thrown from equipment,
  - (f) material being fed into or removed from process equipment, or
  - (g) Machinery or equipment that may be hazardous.An employer must ensure that the design, installation, operation and maintenance of safeguards meet the requirements of CSA Standard Z432-04, Safeguarding of Machinery (OH&S)
18. **Substance Abuse:** Any person employed by Swab Master Ltd reporting for work suspected of being under the influence of alcohol or drugs / substances shall be sent home and is subject to, at management's discretion, disciplinary action. Swab Master Ltd. Has a ZERO TOLERANCE POLICY with regards to substance abuse. (Refer to **SUBSTANCE ABUSE PREVENTION POLICY**)
19. **Smoking:**
  - a) Smoking is only permitted in designated areas.
  - b) Only safety matches or safety lighters (double action) may be carried within classified hazardous areas.
  - c) Customer rules and regulations regarding the carrying of cigarettes and matches or lighters on work sites will prevail.

20. **Housekeeping:** Is the responsibility of all employees. Unsightly or hazardous conditions due to poor housekeeping will not be tolerated. If you see a hazard, eliminate it. If this is not possible, report it to your Supervisor or Manager. In addition, you are required to fill out an Opportunity Report and submit it as soon as possible.
21. **Driving** – see Driving and Travel procedure or Transportation (Element 11)
22. **Headlights** should be on at all times. The drivers of vehicles must comply with the speed limits as posted. Safety belts are compulsory. Flammable materials shall not be carried within the cab of the vehicle.
23. **Vehicle Traffic Control:** Workers must be protected from dangerous traffic at a work sight by controlling the traffic. If a worker is on foot and is exposed to traffic a highly visible piece of clothing must be worn. If a worker is designated as a traffic controller the employer must ensure they wear a highly visible piece of clothing that clearly identifies the worker as such and is retro reflective if it is dark or poor visibility. If it is dark and or poor visibility the worker must use a handheld signal light
24. **Highway Traffic:** If public traffic on a highway is dangerous to workers an employer must ensure that workers are protected by using:
- |                      |   |  |                 |
|----------------------|---|--|-----------------|
| Warning Signs        | Barriers                                | Flares                                 |                 |
| Lane Control Devices | Conspicuously identified pilot vehicles | Designated persons controlling traffic | Flashing Lights |
25. Conveyance or use of firearms on the work site is prohibited.
26. Fighting or horseplay will not be tolerated.
27. Ensure all loads and equipment are well secured during transport
28. No burning or littering of garbage or rubbish. It must be cleaned up and disposed of properly. Oil rags must be left at the work location and disposed of in clients approved bins. They are not to be brought back to the shop as per the Fire and Explosion Hazard Management Program
29. Emergency procedures to be on worksites and readily available
30. WHMIS and Transportation and Handling of Dangerous Goods regulations must be strictly adhered to.
31. Safety belts and lifelines must be worn when required.
32. When using a stepladder one must never use the top two rungs.
33. ***NO PERSONAL ELECTRONIC DEVICES (PED)*** is to be used during work hours by any Rig Assistant. At the shop, PED should be left in your locker or vehicle and not on your person. At ANY well location, no PED are permitted. The PED should be left in the vehicle and may be checked on lunch or break time only. Please ensure your next of kin has our office number in case of emergency. They can contact the office and we will get a hold of your supervisor. The Rig Supervisor may have his cell phone in the operators cab for emergency use. Refer to the **PERSONAL ELECTRONIC DEVICE POLICY**

## GENERAL ADMINISTRATION & APPLICATION OF RULES & REGULATIONS

Health and Safety rules and regulations shall be available to all employees. A record of receipt of these rules and regulations by all employees shall be maintained on file.

Health and Safety rules and regulations shall be reviewed annually through the Management; remain current, and enforced consistently by supervision on a daily basis.

In circumstances where employees fail to observe known Health and Safety rules and regulations, the supervisor and/or management shall apply discipline as per management's discretion.

Health and Safety Rules and Regulations Apply to:

- All employees
- Visitors
- Contractors
- Others having business in areas within the jurisdiction of Swab Master Ltd.

***Compliance with company rules and regulations is a mandatory condition of employment.***

## CORRECTION OF UNSAFE ACTS OR WORK CONDITIONS

This details the requirements and methods to be followed for correcting unsafe, hazardous conditions and correcting unsafe acts.

*An unsafe hazardous condition is defined as: A condition in the work place that is likely to cause property damage or injury. Examples include:*

- Defective tools, equipment, or supplies.
- Inadequate supports or guards.
- Congestion in the workplace.
- Inadequate warning systems.
- Fire and explosion hazards.
- Poor housekeeping such as slippery floor and improper storage
- Hazardous atmospheric condition.
- Excessive noise.
- Poor ventilation.
- Misuse of fire protection equipment

*An unsafe act is defined as: Performance of a task or other activity that is conducted in a manner that may threaten the health and/or safety of workers. Examples include:*

- Operating without qualification or authorization.
- Lack of or improper use of PPE.
- Failure to Lock Out / Tag Out
- Operating equipment at unsafe speed.
- Failure to warn.
- Bypass or removal of safety devices.
- Using defective equipment.
- Use of tools for other than their intended purpose.
- Working in hazardous locations without adequate protection or warning.
- Improper repair of equipment.
- Horseplay.
- Wearing unsafe clothing.
- Taking an unsafe position.

**Methods to correct unsafe conditions include the following:**

- Tailgate/Hazard Assessment Meeting – Pre-job
- Management directives – employee discipline – retraining
- Inspection tour initiatives
- Opportunity Report with recommended corrective actions.

**Methods to correct unsafe acts include the following:**

- Worker observation and correction.
- Opportunity Report with recommended corrective actions.
- Inspection tour observation and correction.
- Health and Safety meeting education topic.

## ACCIDENT/INCIDENT REPORT RECOMMENDATIONS

Unsafe hazardous conditions are to be corrected according to the accident/incident report procedures.

**CORRECTING UNSAFE ACTS:** This portion of the policy is written with the understanding that:



1. Job safety analysis & job safety training has been conducted thoroughly, safe work procedures are in place and each employee has received necessary training, and a record of each employee's training is available and current.
2. The company encourages the correction of unsafe acts and supports employee's efforts to correct them without exposing himself to the threat of injury.
3. PERSONAL PROTECTIVE EQUIPMENT: Appropriate personal protective equipment must be worn to overcome the hazards of the task being performed. If specialized or different equipment is required consult your supervisor or manager. Adhere to the following company policies for your area and tasks:

#### PERSONAL PROTECTIVE EQUIPMENT POLICIES

EYE & FACE PROTECTION POLICY

FLAME RESISTANT CLOTHING POLICY

FOOT PROTECTION POLICY

HEAD PROTECTION POLICY

GLOVE PROTECTION POLICY

LIMB & BODY PROTECTION POLICY

SKIN PROTECTION POLICY

RESPIRATORY PROTECTION POLICY

FALL PROTECTION POLICY

HEARING PROTECTION POLICY

4. In addition, follow Safety Data Sheets (SDS) for personal protective equipment while working with any controlled product. SDS binders are provided in each unit, shop, office and online @ [www.swabmaster.com](http://www.swabmaster.com).
5. FIRST AID (see emergency procedures, Element 8): Medical attention for minor accidents such as scrapes, scratches, and minor burns are normally given on site. For more serious accidents requiring a physician, a designated employee will transport the injured person to the nearest hospital. If the injured person cannot be moved, an ambulance will be called.

### USE AND PURPOSE OF TAILGATE/PRE JOB/HAZARD ASSESSMENT FORM

- To provide a record of action taken regarding hazard assessments by the employee.
- To assist in maintaining a safe work environment and encourage employee participation in the Health and Safety program.
- The pre job assessment / tailgate meeting forms, confined space pre-entry hazard assessment and opportunity report forms, will be made available to all employees. You can find copies of these forms in the back section of this manual, or at the office.

The employee must:

Make an attempt to personally correct the unsafe condition without exposing him or herself to the threat of personal injury. If this cannot be accomplished, the employees must notify his Supervisor or Manager to control the hazard(s).

Management shall:

Review the forms periodically to ensure employees are completing the forms correctly and initiate corrective action and follow up to final resolution on any concern.

### INSPECTION TOUR INITIATIVES

- Management representatives on each tour must ensure any hazardous condition(s) noted during the tour are rendered harmless without delay.
- A written inspection report will identify all unsafe acts and unsafe conditions and will identify corrective action, which is contemplated for each hazard.

- Outstanding items on the status report will be afforded due consideration and corrective action taken.
- Shop inspections will be done on a monthly basis, office inspections will be done on a quarterly basis and work site inspections will be done on a monthly basis.

## **ACCIDENT PREVENTION POLICY**

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Management is committed to the principle that all undertakings at Swab Master Ltd. strive for prevention of accidents and incidents and the health and safety of our employees.

Management accepts responsibility for the development of effective health and safety programs. Management will fulfill their obligations in accordance with Company policy and applicable regulations.

Every employee of Swab Master Ltd. is expected to be committed to the development of a positive attitude toward accident and incident prevention, perform in a safe work manner, and follow safe work practices.

All employees are required to be observant of their work area and report at least one hazard identification or near miss opportunity per week. They are required to do a pre-job hazard on a daily basis before commencing work.

Near misses, hazard identifications and opportunity reports are tracked and patterned so that management can have a better understanding of where the likeliest problems may occur. It will be the responsibility of all employees to review this data in developing controls for known hazards and decreasing the number of accidents and incidents.

## **CHEMICAL, BIOLOGICAL AND HARMFUL SUBSTANCES POLICIES**

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Rev: April, 2016

The purpose of this standard is to ensure that the health & safety of all Swab Master Ltd. employees and contractors, who are engaged in any operations where the potential for exposure to chemical and biological hazards is not compromised. All employees and contractors shall follow safe operating procedures and take appropriate precautionary measures to avoid the risk of serious health effects. It is a mandatory requirement for all employees to complete WHMIS 1988 and/or WHMIS 2015 training.

### **GENERAL REQUIREMENTS**

Where chemicals are known to have toxicological effects with similar modes of toxic action, or additive effects, Part 4 of the Occupational Health and Safety Code contains a formula which is intended to prevent overexposure:

Each Rig unit will have access to: Handi-Guide to Alberta's Occupational Health and Safety Act, Regulation and Code.

\*\*\*To prevent overexposure, the sum of the standardized exposures must not exceed 1.

The assessment of worker exposure must be comprehensive to ensure that total exposure is not underestimated.

The potential for exposure from all forms of contaminants such as:

- Gases
- Vapours and Dust

And all routes of exposure such as:

- Dermal

- Oral and
- Inhalation,

must be considered. In addition, the interaction of these materials and the duration of exposure must be accounted for. Only when all factors are considered and adjusted are workers protected.

TYPES OF CHEMICAL AND BIOLOGICAL HAZARDS, SWAB MASTER LTD. EMPLOYEES MAY BE EXPOSED TO on LEASE SITES AND SHOP/YARD. The following table includes the types of chemical hazards, Swab Master Ltd employees may be exposed to on a lease site.

Substance	CAS Number	ppm	mg/m3	f/cc	ppm	mg/m3
Hydrogen sulphide	7783-06-4	10	14	-	( c ) 10	( c ) 21
Diesel exhaust		-	-	-	-	-
Methanol (Methyl mercaptan)	74-93-1	0.5	0.98	-	-	-
Propane	74-98-6	1000	1800	-	1500	2700

## HYDROGEN SULFIDE GAS (H2S)

The purpose of this standard and procedure is to ensure that the health & safety of all Swab Master Ltd. employees and contractors who are engaged in any operations where the potential for exposure to hydrogen sulphide (H2S) or other toxic gasses exist, is not compromised. All employees and contractors shall follow safe operating procedures and take appropriate precautionary measures to avoid the risk of serious and life threatening health effects.

**References:** Canadian Association of Petroleum Producers (CAPP) H2S Guidelines  
Safety Data Sheet (SDS) for H2S

### DEFINITION:

Hydrogen Sulphide Commonly referred to as H2S or sour gas.

In the oil and gas industry, you can expect to find H2S in wellheads or wellbores, piping systems, tanks, vessels, pipelines, production facilities, confined spaces, restricted space pits & low lying areas, berm or diked areas, and in production buildings.

### H2S CODE OF PRACTICE

**Application:** The Hydrogen Sulphide (H2S) Code of Practice is intended to provide a guideline for identification of the properties of H2S, protection from the hazards associated with this gas, and minimum training requirements. This Code of Practice is also intended to provide the basis for facilities to develop site-specific procedures for dealing with H2S.

This Code of Practice applies to all the company operations. The type, size, and location of operations vary, so it is necessary to use site-specific procedures for H2S. The Code of Practice provides guidance on how to develop and use a site-specific procedure.

**Definition:** Hydrogen sulphide (H2S) is a highly toxic gas. In high concentrations it can kill in seconds by paralyzing the respiratory system H2S is colorless, flammable, heavier than air, and highly soluble in water. In low concentrations, H2S smells like rotten eggs; in moderate concentrations it quickly deadens the sense of smell.

## EXAMPLES OF POTENTIAL H2S SOURCES

Hydrogen sulphide (H2S) is a common contaminant in the upstream oil and gas industry. H2S occurs as a vapor, or dissolved in produced water, crude oil, or natural gas condensate. Hydrocarbons contaminated with H2S are commonly called “sour.” For health and safety purposes, all wells and facilities processing hydrocarbons contaminated with any concentration of H2S will be evaluated for potential hazards to the workers.

Refer to Table 1 for health effects of Hydrogen Sulphide

Examples of potential H2S sources include, but not limited to, are:

- Leaks from sour gas wellheads, pipelines, piping, equipment and processes
- Breaking equipment integrity (i.e. Instrumentation lines, piping flanges, pump seals, rotating equipment)
- Well maintenance
- Uncoupling vent lines and load lines
- Vents or thief hatches on sour liquid storage tanks
- Gauging tanks
- Rig floor or under the sub-structure
- Entering sour compressor basements, sour well buildings
- Sampling with open or closed containers
- Maintenance on purged equipment
- Flaring sour gas
- Entering dikes

Prior to entering an area where H2S is known to be present or may reasonably be expected to be encountered, all personnel shall proceed as follows:

- Receive orientation on the work site's rules and procedures.
- Receive relevant rescue and evacuation procedure information.
- Hold a current H2S Alive training certificate,
- or be under the direct supervision of a Swab Master Ltd. representative with a current H2S Alive training certificate (i.e. visitor)

## PERSONAL PROTECTIVE EQUIPMENT

**Reference** RESPIRATORY PROTECTION POLICY

Respiratory protection is required when entering areas where:

- H2S concentrations are above 10 ppm (0.001%). Workers will not be exposed to 10ppm of H2S for more than an 8 hour period and not exposed to a concentration higher than 15ppm.
- Breaking sour equipment integrity may expose the worker to concentrations in excess of 10 ppm (0.001%)
- There is any indication of equipment failure or product leak.
- Entry is into a confined space or restricted space containing sour gas or liquids.
- Respiratory protection must be:
  - a full-face, positive pressure SCBA, or
  - a full-face, positive pressure SABA equipped with a 5-minute escape air bottle.
- Important: Backup personnel are required whenever respiratory protection is required or in use
- with respiratory protective equipment, personnel shall proceed with the following safe work practices:
  - Ensure that personnel who may be required to wear respiratory protective equipment are clean-shaven. No part of a beard, moustache, or sideburns may extend into the seal area of the respiratory protective equipment.
- Ensure there are proper working respiratory equipment and support services available where the potential for H2S exists.
- When working on the company sour drilling & well servicing locations, ensure there are adequate (a minimum of 2) self-contained breathing apparatus (SCBA) units are available on site when a supplied air trailer is not present.

- Ensure workers inform their supervisor of any changes, problems, or variations from normal conditions encountered during their shift.
- Check all respiratory equipment for proper operating condition prior to use.
- Ensure all workers are adequately trained in the use, care and proper storage of the equipment that they may be using.

## DETECTION of H<sub>2</sub>S

H<sub>2</sub>S detection will be conducted using detection tubes or electronic sensing instruments. Personnel using the devices must be aware of the potential limitations and interference associated with the use of the equipment.

SCBA /SABA respirators must be worn to use detectors when determining the workplace H<sub>2</sub>S concentrations. Respirators may not be required when detectors are used in low risk situations, such as sampling process streams.

## GAS DETECTION MONITORS

Workers will be assigned a gas detection monitor and LEL monitor. Training will be supplied by the Company. Use of manufacturer's guidelines and industry standards will be the guide for Swab Master Ltd.'s procedures.

## PERSONAL GAS MONITOR – USE & CARE

- All H<sub>2</sub>S monitoring equipment shall be inspected and calibrated, as needed by competent personnel.
- Equipment must be inspected and tested prior to use to ensure the equipment is operating properly.
- Safe Use and care of the personnel gas monitors are the responsibility of the Swabbing Operator and Helper at all times.
- Prior to working on any location where toxic or flammable gasses will be encountered the monitor shall be bump tested using calibrated test gas.
- Calibration gas carried on the swabbing vehicles shall be inspected prior to departure so as to full enough to conduct bump tests in the field locations.
- Gas monitors are to be used as only an indicator of toxic or flammable gases and not to determine exact amounts.
- The Operator and Helper will both wear a monitor at all times while working in toxic or flammable areas.
- A bump test record handbook is required for each monitor and gas monitor bumps check results are to be recorded in each booklet.

## PROCEDURE WHEN WORKING WITH H<sub>2</sub>S GAS

Hydrogen Sulphide Concentration	Respiratory Protective Equipment Required	Additional Precautions/Requirements
Less than 10 ppm	None	In all areas where H <sub>2</sub> S may exist, a personal detector equipped with a H <sub>2</sub> S sensor, pre-set to alarm at 10 ppm, is required OR the use of a portable H <sub>2</sub> S detector to give warning of any H <sub>2</sub> S release is required OR a fixed H <sub>2</sub> S detector system must be in place to give warning of a H <sub>2</sub> S release. If a H <sub>2</sub> S alarm (personal, portable or fixed detector) is activated, workers must immediately retreat to a safe location and call for assistance if required.

10 ppm or greater	Self-Contained Breathing Apparatus (SCBA) or Supplied Air Breathing Apparatus (SABA) with a 5 minute escape cylinder is required at & beyond the level of 10 ppm. H2S	<p>H2S monitoring as above.</p> <p>If H2S readings are 10 ppm or greater in a work area, employees are to communicate this immediately to their supervisor.</p> <p>Personnel shall not enter the contaminated area unless approved positive pressure SCBA or SABA is worn.</p> <p>Positive pressure SCBA or SABA shall be worn at all times while in the exposed area.</p> <p>A suitable rescue plan must be developed and implemented accordingly.</p> <p>Heavy, non-routine maintenance work or repairs is not to be conducted until two or more persons are present.</p> <p>While performing these duties, a communication system must be maintained.</p> <p>Company Representative must be notified.</p>
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Always make sure the unit has been properly maintained, in good repair, and used according to the manufacturer's operating instructions. All Swab Master Ltd. employees are responsible for tracking use, cleaning, and calibration. Documentation is to be kept on file.

It is the responsibility of each Swab Master Ltd. employee using a personal detection monitor to be aware of the correct operating instructions for that device.

***NOTE: Routine replacement of parts authorized by the manufacturer (e.g. headbands, nose cups, cylinders, filters, cartridges) is permissible; however, repairs must only be made with parts designated for the equipment by trained persons authorized by the manufacturer.***

## DETECTOR TUBES

When handling detector tubes, personnel shall proceed with the following safe work practices:

- Detector tubes provide a rough measure of H2S concentrations. Detector tubes do not provide continuous monitoring or sound an alarm. Readings may take up to one minute.
- Ensure that the operator of the detector knows the detector tube range. The tube also needs to be for that specific detector.

## MONITORING

When monitoring for H2S, personnel shall proceed with following safe work practices:

- Ensure all monitoring equipment is set to alarm at 10 ppm of H2S.
- Bump test personal and hand-held monitors prior to their use, or the manufacturer's recommendation.
- Ensure all monitors are maintained and calibrated according to manufacturer's recommendations.
- Ensure workers contact a second party before entering an area where H2S is suspected.

Workers must check for wind direction, sour gas contamination of the atmosphere, and abnormalities regarding the affected area.

- Pay special attention to all H2S leaks. Report leaks and initiate corrective action at once. If concentrations of H2S greater than 10 ppm are encountered, ensure workers communicate the H2S hazard to other workers in the area and conduct further testing to determine the hazard level. All additional testing must be conducted while wearing approved breathing apparatus, either self-contained breathing apparatus (SCBA) or supplied air breathing apparatus (SABA).
- Test and calibrate fixed monitors according to the manufacturer's recommendations.

## EMERGENCY RESPONSE

1) Pre-Job Planning: Before starting a job, review the following with on-site personnel:

- H2S hazards and where they may be found.
- Monitoring requirements (continuous or specified intervals).

- Backup personnel requirements.
- Safety-watch requirements.
- Muster point location.
- Respirator requirements and locations.
- Alarms and emergency notification procedures.
- Communication procedures.
- Atmospheric conditions.

## 2) Rescue

Seven steps to take during an H<sub>2</sub>S emergency are as follows:

1. Evacuate immediately. A 1-125 alarm indicates that there may be hazardous H<sub>2</sub>S concentrations in the building or area. Get to a safe area immediately by moving upwind or crosswind from the release. Move to higher ground if possible.
2. Sound the alarm. Immediately notify someone that there is an H<sub>2</sub>S release, relay any information you may have and that you may require assistance.
3. Assess the situation. Do a head count and consider other hazards. Control other hazards that can affect the rescue.
4. Protect rescue personnel. Use SCBA/SABA to protect rescue personnel. If necessary, shut down operations.
5. Rescue victim. Start by ventilating the building with fans or by opening all doors. If safe, perform the rescue yourself with backup or with assistance. Enter the area and remove the victim to fresh air (upwind if possible).
6. Revive victim. Apply artificial respiration or CPR on the victim until the victim revives or help arrives. Only qualified personnel may use mechanical resuscitators or oxygen.
7. Get medical aid. All H<sub>2</sub>S victims require medical attention. Even if they revive quickly, there is still a possibility that the lungs may collect fluid some hours after the exposure. Arrange transport of the victim to medical aid and provide the necessary information to Emergency Medical Services.

## RESCUE TECHNIQUES

Goal is to get the victim(s) to fresh air as quickly as possible (Remember to protect yourself and wear respiratory protection)

Priority H<sub>2</sub>S Rescue preservation of life over limb

Pre-Plan Rescue Routes assess situation for hazards

Must pre-plan the rescue to get victim(s) to fresh air in less than three minutes

## HAZARDS OF HYDROGEN SULPHIDE

Acute Health Hazards

Hydrogen sulphide (H<sub>2</sub>S) is extremely toxic at very low concentrations. In concentrations of 700 ppm (0.07%) or more, it can kill in seconds by paralyzing the respiratory system. More than 100 parts of H<sub>2</sub>S per million parts air (100 ppm /0.01%) is immediately dangerous to life and health (IDLH).

H<sub>2</sub>S is colorless, flammable, heavier than air, and highly soluble in water. It has a rotten egg odour at low concentrations. Above 100 ppm, H<sub>2</sub>S quickly deadens the sense of smell and cannot be detected by odour.

Table 1 summarizes the toxic effects that result from inhaling various concentrations of H<sub>2</sub>S.

10ppm or less	No known short-term effects from 8 hour exposures
10 ppm – 20 ppm	Borderline concentration for eye irritation. No worker exposure of 10ppm over 8 hours; No worker exposure to 15ppm
20 ppm - 50 ppm	Eye, nose, throat and lung irritation
50 ppm -100 ppm	Marked eye, nose, throat and lung irritation



100 ppm - 150 ppm	Severe eye, nose, throat and lung irritation, loss of smell, <b>exposures of 8 to 48 hours may be fatal</b>
200 ppm - 300 ppm	Headaches, drowsiness, prolonged exposures of several hours may cause the lungs to fill with fluids
300 ppm - 500 ppm	May cause unconsciousness and death in 1 to 4 hours
500 ppm -700 ppm	Fatal with 1-hour exposure
Greater than 700 ppm	Immediately fatal

## HAZARDS ASSOCIATED WITH SOUR LIQUIDS

Hydrocarbon liquid and produced water process vessels and storage tanks have a vapor space, immediately above the liquid. Produced water and hydrocarbon liquids will hold only so much gas at atmospheric pressure.

As is the case for any gas present in solution, H<sub>2</sub>S gas will break out of solution to the point that the concentration of H<sub>2</sub>S in the vapor space will far exceed that in the liquid. Special precautions need to be taken if an individual is likely to be exposed to the vapors while performing a task. It is important to remember that people do not breathe the liquid; they will breathe the vapor above the liquid.

The table shows the relationship between H<sub>2</sub>S in the liquid, and the corresponding concentration in the vapor space above the liquid. The calculations make the assumption that the tank is at atmospheric pressure and 20°C and are based on the solubility of H<sub>2</sub>S in water and in Hexane (C<sub>6</sub>).

PPM H <sub>2</sub> S in liquid	PPM H <sub>2</sub> S above H <sub>2</sub> O	PPM H <sub>2</sub> S above C <sub>6</sub>
0.06	20	5
0.25	82	20
1	326	81
2	652	162
5	1630	405
10	3261	810
15	4891	1215
20	6521	1619

Example: A 500 barrel storage tank contains crude oil with 10 ppm H<sub>2</sub>S. From the table, the concentration of H<sub>2</sub>S in the vapor space is 810 ppm.

A 10,000 barrel storage tank contains produced water at 10 ppm H<sub>2</sub>S. From the table, the concentration of H<sub>2</sub>S in the vapor space is 3261 ppm.

**Important Note:** For static storage tanks, i.e. vessels that primarily store and do not continually have product flow through them, the vapor space will contain concentrations of H<sub>2</sub>S as described above, but it is not an endless supply.

As the gases are released into the atmosphere, they are quickly diluted and not readily replaced from the liquid. As time passes under a venting scenario, with no new liquids being added, the concentration will decrease.

For a more dynamic system, i.e. process vessels that have liquids continually flowing through them, H<sub>2</sub>S in the vapor phase will be readily replaced. Concentrations of toxic gas in this situation will remain higher even though the space may be venting.

## SIGNAGE AND PRODUCT LABELS

- All facilities and sites where there is H<sub>2</sub>S present must have suitable signs at the entrance warning of the presence of poisonous gas.



- Any product that has the potential for H2S to be present must be labeled accordingly under WHMIS legislation.

## BIOLOGICAL HAZARDS

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Biological hazards are organisms or products of organisms that present a health hazard to humans. “Biohazardous material” means a pathogenic organism, including a blood-borne pathogen, that, because of its known or reasonably believed ability to cause disease in humans, would be classified as Risk Group 2, 3 or 4 as defined by the Medical Research Council of Canada, or any material contaminated with such an organism.

Refer to **WILDLIFE PROCEDURES** for more information regarding biological hazards transferred from animals. If no occupational exposure limit is established for a harmful substance present at a work site, an employer must ensure that all reasonably practicable steps are taken to keep each worker’s exposure to that harmful substance as low as reasonably practicable.

## PANDEMIC INFLUENZA POLICY

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### PREPARING FOR PANDEMIC INFLUENZA

It’s not a matter of if, but when. For Alberta, here are the projected numbers: Between approximately 500,000 and 1.2 million Albertans will become ill – our total population is 3.3 million. That’s 15 seasonal influenza years. 1,000 to 3,000 Albertans will die – that’s eight times a normal influenza year. % to 35% of all Albertans affected. 3,000 to 12,000 Albertans will be hospitalized – that’s four times a normal.

With so many people ill at once, and the healthy ones caring for ill friends and family members, 20-25% or more of all workers will be absent from work for a period of one to three weeks.

Our policy is to educate and provide information to our employees on such outbreaks and to keep them informed of the severity and risks to their health and wellbeing. They will be provided with information such as:

Websites that provide information on how to protect oneself from having the flu or passing it on are:

[www.health.alberta.ca](http://www.health.alberta.ca)

[www.albertahealthservices.ca](http://www.albertahealthservices.ca)

[www.phac-aspc.gc.ca](http://www.phac-aspc.gc.ca)

Potential impact on our business - There may be a shortage of workers due to illness, Safety will not be compromised due to a shortage of workers, jobs will be rescheduled, or crews will be reassigned. If you are ill or exposed to the influenza you must report to your Rig Supervisor or General Manager. If onsite, communication must be made to all parties of potential exposure.

Please seek medical treatment if you are ill and follow the guidelines for protecting yourself from getting or passing on the influenza. Immunization is encouraged.

#### Pandemic Influenza Procedure

If the outbreak is wide spread throughout the company work may have to be shut down. Because we operate with 2 man crews, some crews maybe able to work. Employees may have to join another crew other than their regular one. Rig operators are trained to work on each other’s rigs, as well as other employees are trained to do each other’s jobs on other rigs.

### UNCOMPROMISED SAFETY STANDARD

- You will not be asked to perform a task you are not trained to do
- You will not be asked to perform a task alone that is considered hazardous
- You will be given sufficient time to recover from an illness
- If you are or have high risk individuals in your family please notify the office
- Any new information will be updated in the policy and communicated to all employees

## CONTAGIOUSNESS

More research is being done on how long a person can be infectious (be able to spread the virus to others), but it is believed that this period is for one day before the onset of symptoms and continues for approximately seven days after symptoms have started. The time it takes between being infected and experiencing symptoms is between two and seven days.

## SYMPTOMS

Almost always: Cough and fever

Common: Fatigue, muscle aches, sore throat, headache, decreased appetite, runny nose

Sometimes: Nausea, vomiting, diarrhea

Prevention – this is important to follow at work and at home

- Wash hands often - see proper washing of hands chart – these should be placed in washrooms and work areas.
- Keep common surfaces disinfected
- Cough and sneeze into your arm, instead of your hand or towards other people
- If you are sick, stay home until your symptoms are gone and you feel well enough to participate in all activities
- If your symptoms become severe seek medical attention,
- If you get flu-like symptoms and are pregnant, have underlying health problems or if your symptoms get worse, contact your health care provider.
- During an outbreak avoid large gatherings

## WEST NILE VIRUS

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West Nile (WN) virus is a mosquito-borne virus. Mosquitoes transmit the virus after becoming infected by feeding on the blood of birds which carry the virus. For most Canadians, the risk of illness from West Nile virus is low, and the risk of serious health effects is even lower. Nevertheless, it is important to know the symptoms of illness related to infection and how to minimize your risk, especially if virus activity is reported in an area near you.

### Symptoms of West Nile (WN) virus infection

Many infected people have no symptoms and do not get sick or have only mild symptoms. When infection does cause illness, symptoms will usually appear within two to 15 days. The extent and severity of symptoms vary widely from person to person. In mild cases, there may be **flu-like symptoms, including fever, headache and body aches**. Some people may also develop a **mild rash, or swollen lymph glands**. Some individuals have weaker immune systems; they are at greater risk of developing symptoms and health effects that are more serious, including **meningitis and encephalitis**. Meningitis is inflammation of the lining of the brain or spinal cord. Encephalitis is inflammation of the brain itself. These conditions can be fatal. In such cases, symptoms could include the rapid onset **of severe headache, high fever, stiff neck, nausea, difficulty swallowing, vomiting, drowsiness and confusion, loss of consciousness, lack of coordination, muscle weakness and paralysis**.

### Who is at risk for serious health effects from WN virus?

While persons of any age and health status can be at risk for serious health effects associated with West Nile virus infection, the overall risk of serious health effects increases with age. People with weaker immune systems are considered to be at greater risk for serious health effects. This higher risk group includes:

- People with chronic diseases, such as cancer, diabetes, alcoholism, or heart disease

- People that require medical treatment that may weaken the immune system, i.e. chemotherapy.

Although individuals with weaker immune systems are at greater risk, WN virus can cause severe health effects for people of any age and any health status. This is why it is so important to reduce the risk of getting bitten by mosquitoes. Anyone exposed to mosquitoes in an area where WN virus has been detected is at some degree of risk for infection.

#### **What are the long-term effects of WN virus?**

Because WN virus is an emerging disease, the long-term effects are not fully understood. Studies have shown that some people with serious symptoms and health effects recover completely, while others experience prolonged health problems. These problems can include:

- Physical effects, such as long-term muscle weakness and paralysis, fatigue and headache
- Cognitive effects, such as confusion, depression, problems with concentration and memory loss
- Functional effects, such as difficulty with preparing meals, going out, shopping, etc.

Scientists do not know why some people recover while others continue to have varying degrees of health problems.

### **PROTECT YOURSELF**

People can get West Nile virus if they are bitten by an infected mosquito. While, it is important to remember that the risks of being bitten by an infected mosquito are low and the chances of becoming seriously ill are even lower, anyone who is exposed to mosquitoes in an area that has West Nile virus has the potential to become infected.

**Protection:** To protect yourself, you should avoid being bitten by mosquitoes. You can take action on two fronts:

#### **1. Minimize your exposure to mosquitoes:**

- When going outdoors, use insect repellents that contain DEET or other approved ingredients.
- Try to avoid spending time outdoors at dawn and at dusk when mosquitoes are most active.
- Wear protective clothing such long-sleeved shirts, long pants and a hat. Light coloured clothing is best because mosquitoes tend to be more attracted to dark colours.
- Make sure that door and window screens fit tightly and have no holes that may allow mosquitoes indoors.

#### **2. Eliminate mosquito breeding sites**

Mosquitoes lay eggs in standing water and it takes about four days for the eggs to grow into adults that are ready to fly. Even a small amount of water, for example, in a saucer under a flower pot, is enough to act as a breeding ground. As a result, it is important to eliminate as much standing water around your work area as possible.

### **CORONAVIRUS (COVID-19)**

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This company policy includes the measures we are actively taking to mitigate the spread of coronavirus. You are kindly requested to follow all these rules diligently, to sustain a healthy and safe workplace in this unique environment. It's important that we all respond responsibly and transparently to these health precautions, We assure you that we will always treat your private health and personal data with high confidentiality and sensitivity.

This coronavirus (COVID-19) company policy is susceptible to changes with the introduction of additional governmental guidelines. If so, we will update you as soon as possible by email.

## CONTAGIOUSNESS

The coronavirus has proved highly contagious and potentially deadly, but the vast majority of people who become infected will show either no symptoms or only mild ones. The virus can be transmitted to others from someone who is infected but showing no symptoms. On average it takes 5-6 days from when someone is infected with the virus for symptoms to show, but can take up to 14 days. The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with the virus coughs or exhales onto another person or onto an object which another person then comes into contact with, and then touches their eyes, nose or mouth.

## SYMPTOMS

Common symptoms include fever, tiredness, dry cough

Some people may experience aches and pains, nasal congestion, runny nose, sore throat, diarrhea, loss of taste and smell

- If you have cold symptoms, such as cough/sneezing/fever, or feel poorly, stay home and self-isolate. Seek medical attention if you have a fever, cough and difficulty breathing.
- If you have a positive COVID-19 diagnosis, you can return to work *only after* you've fully recovered, with a doctor's note confirming your recovery.
- If you have recently returned from areas with a high number of COVID-19 cases (based on [CDC](#) announcements), we'll ask you to stay home for 14 calendar days, and return to work only if you are fully asymptomatic. You will also be asked not to come into physical contact with any colleagues during this time.
- If you've been in close contact with someone infected by COVID-19, with high chances of being infected yourself, you will be asked not to come into physical contact with any colleagues during this time.
- If you need to provide care to a family member infected by COVID-19, you'll only be permitted to return to work 14 calendar days after your family member has fully recovered, provided that you're asymptomatic or you have a doctor's note confirming you don't have the virus. You will also be asked not to come into physical contact with any colleagues during this time.

## GENERAL HYGIENE RULES

- Wash your hands often, especially after using the toilet, before eating, and if you cough/sneeze into your hands (follow the [20-second hand-washing rule](#)). You can also use the sanitizers you'll find around the office.
- Cough/sneeze into your sleeve, preferably into your elbow. If you use a tissue, discard it properly and clean/sanitize your hands immediately.
- Equipment, office areas, and vehicles need to be sanitized using appropriate sanitizer frequently, or at the start/end of the workday.
- Open the windows regularly to ensure open ventilation.
- Avoid touching your face, particularly eyes, nose, and mouth with your hands to prevent from getting infected.

- If you find yourself coughing/sneezing on a regular basis, avoid close physical contact with your coworkers and take extra precautionary measures (such as requesting sick leave).

## PREVENTIVE MEASURES

- Stay at home as much as possible when not working, avoid large gatherings
- Practice social distancing by staying at least 2 metres away from others when possible, both at work and home. Field supervisors may have their own protocol regarding safe distancing on the worksite.
- Avoid touching common things such as pens and paper when doing tailgate or pre job safety meetings
- Travel to and from worksite in separate vehicles, or if in crew truck, passenger sits in rear right side to be as far from driver as possible. Alternately, crew can mask up while in close quarters with each other.
- Carry sanitizer and use frequently when not wearing gloves.
- Refer to <https://www.alberta.ca/coronavirus-info-for-albertans.aspx> or [www.canada.ca](http://www.canada.ca) for ongoing updates

## HANTAVIRUS

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This guideline has been developed to assist employers and workers in minimizing worker exposure to Hantavirus, and preventing Hantavirus infections. The guidelines and recommendations outlined in this document reflect what is currently known about this disease.

### WHAT IS HANTAVIRUS

Hantavirus infection is caused by a virus that is found in some rodents. The principal carrier is the deer mouse or white-footed mouse which is commonly found in Alberta. As it is possible that other rodents could carry the virus, and it is not easy to determine what kind of mouse a person is exposed to, all rodents should be treated as potential carriers. The virus is rarely transmitted to humans, but when it is, the virus can cause severe illness – even death.

### TRANSMISSION

Hantavirus does not appear to cause illness in the rodent hosts, but is shed in their saliva, urine and droppings. The virus is usually spread to humans when particles of infected saliva, urine or feces are inhaled. Inhalation may occur through direct contact with the rodent,

Hantavirus infection is caused by a virus that is found in some rodents, or from breathing airborne dust particles that are generated when rodent excreta is disturbed. The virus can be spread if infected materials contact broken skin or the membrane lining of the eyelids and eyeball.

#### **Research also indicates that the virus may be spread if:**

- a rodent bites you (this is very rare);
- if you touch something that has been contaminated with rodent urine, droppings or saliva, and then touch your nose or mouth;
- if you eat or drink food or water contaminated by rodents.

*\*\*There is no evidence that the Hantavirus is transmitted by any other type of animal or insect besides rodents. There have been no reported cases of human to human spread with the strain found in North America.*

### SIGNS & SYMPTOMS

The disease caused by Hantavirus is Hantavirus Pulmonary Syndrome (HPS). It generally begins as a flu-like illness occurring about 1-5 weeks after having an exposure to mouse droppings (such as cleaning up a warehouse or outbuilding).

**Early universal symptoms include:**

- fatigue
- fever
- muscle aches – especially the large muscle groups – thighs, hips, back, sometimes shoulders.

About half of patients will experience other symptoms including:

- headaches
- dizziness
- chills
- abdominal problems such as nausea, vomiting, diarrhea and abdominal pain.

Late symptoms start about 4-10 days later and include:

- coughing
- shortness of breath – which may feel like a tight band around the chest.

Workers with these symptoms should see a physician as soon as possible. The best treatment for this disease is prevention and early diagnosis. Make sure that the physician is aware of your conditions of work and potential exposures.

## OCCUPATIONAL EXPOSURE

Most rodents are found in rural and semi-rural areas, however, many are highly adaptable and can be found in homes as well as commercial and industrial buildings,

Cases of Hantavirus in North America have been associated with:

- sweeping out barns and other farm buildings;
- trapping and studying mice;
- using compressed air and dry sweeping to clean up wood waste in a sawmill;
- handling grain contaminated with mouse droppings and urine;
- entering a barn infested with mice;
- planting or harvesting field crops;
- occupying previously vacant dwellings;
- disturbing rodent-infested areas while hiking or camping;
- living in or cleaning dwellings with a sizable indoor rodent population.

## HOW TO PREVENT EXPOSURE

### Rodent control

1. The most important method of prevention is to minimize contact with rodents by controlling them around the work site. Prevention strategies include:
2. Regular inspections for rodents to determine if active rodent control is required.
3. Sanitation: reduce the number of locations inside the workplace and in the immediate vicinity where rodents may feed or find shelter. Clean up trash, open stores of papers or other areas that may serve as nesting sites for rodents.
4. Eliminate potential food sources or store food in rodent-proof containers with a tight fitting lid.
5. Rodent proof by: Closing openings where rodents gain entry and establish runways. Mice can gain entry through a hole as small as ¼ inch in diameter. Proofing materials include steel wool, fine mesh screens, mortar and sheet metal, etc.
6. Placing metal flashing around the base of buildings in which people work if rodents may be able to get in.
7. Using gravel or raised (30 cm) cement foundations in new construction of sheds, out-building or wood piles to discourage rodent burrowing.
8. Cut grass, brush and shrubbery within 30 metres of buildings.

9. Rodent population reduction can be achieved by trapping or poisoning with rodenticides. Kill traps minimize the risk of handling. Rodenticides are hazardous to humans and non-target species, and should be handled by individuals knowledgeable in their safe use.

## SAFE WORK PROCEDURES

Safe work procedures will allow employers to minimize worker exposure to hanta virus, and should be tailored to the specific work circumstances. In all cases for which specific safe work procedures are developed, have a qualified person assess the work situation and evaluate the risk.

Assessment of the individual workers activities rather than just the occupation is important in the determination of exposure risk. Following are sample work procedures. Everyone should assess risks and develop work procedures specific to their work sites.

***Do not attempt to handle rodents or carcasses without proper PPE. Any sighting of rodent infestations MUST be reported to management.***

### **Clean up of infested areas:**

Workers who are involved in the cleanup of areas where rodents or rodent droppings are present should also take precautions:

1. Clear all unnecessary workers from the area.
2. Ventilate the area by opening windows and doors, if possible.
3. Put on disposable rubber or plastic gloves before starting clean up.
4. Wear a NIOSH approved respirator with a HEPA filter.
5. If the area has a heavy rodent infestation, the worker should also wear coveralls (disposable, if possible), rubber boots or disposable shoe covers and protective goggles.
6. Don't stir up dust by sweeping up or vacuuming up dry droppings, urine or nesting materials.
7. Thoroughly wet contaminated areas with detergent or liquid to deactivate the virus. Most general purpose disinfectants and household detergents are effective; however a solution prepared by mixing 3 tablespoons of household bleach in 1 gallon of water may be used in place of a commercial disinfectant. When using the chlorine mixture, avoid spilling the mixture on clothing or other items that may be damaged.
8. Once everything is wet, take up the contaminated materials with a damp towel, and mop or sponge the area with disinfectant.
9. Dead rodents should be soaked in a disinfectant solution, double-bagged along with all cleaned materials, labelled, and then buried, burned or discarded in an appropriate waste disposal system.
10. Dispose of all contaminated materials in double plastic bags. Seal the bags and label them to identify the contents. Do not puncture the bags. Bags of waste may be disposed of by burying them in a hole that is at least two feet deep or by incinerating them. Contaminated material may also be disposed of with regular garbage as long as the amount of material can be safely treated by being soaked in a disinfectant solution and the material is in double plastic bags.
11. Wipe or mop surfaces with a solution of disinfectant and detergent.
12. Decontaminate and remove personal protective equipment and clothing as outlined in the decontamination procedure below

## DECONTAMINATION PROCEDURES

After any activity involving the handling of contaminated or potentially contaminated material, and before leaving the immediate work area, the following procedures should be applied.

Note: Do not remove respiratory protective equipment until other decontamination steps are complete.

(1) Remove coveralls at the perimeter of the work area and place them in a disposal bag. Collapse the bag and temporarily seal it.

(2) Move away from the clean-up or contaminated work area to a location where there are no other workers – preferably outdoors – leaving eye and respiratory protection in place.



## IRON SULFIDE

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When H<sub>2</sub>S combines with iron it forms iron sulphide and is sometimes called pyrophoric iron. It appears as blackish sludge or brownish/black scale. Iron sulphide will auto-ignite if it is allowed to dry out in a normal atmosphere at temperatures above 10°C. It is commonly found in treaters, production tanks, and piping systems. (ppm = Parts per million, in air, of a vapor or gas or other contaminant)

PROPERTIES	COMMENTS
Auto Ignition Temp	260°C (500°F)
Boiling Point	60°C (-76°F)
Colour	Colourless
Exposure Effects	Severe eye irritation and potential skin irritation. Inhalation effects vary by concentration levels, from respiratory tract irritation to sudden loss of breathing, unconsciousness, and death
Exposure Limits	Occupational Exposure Limit (OEL) - 8 hour period – is 10 ppm; at CNPY 10 ppm or greater requires SCBA or SABA to be worn
Flammable Limits	4.3% to 44.0%
Flammability	Highly flammable and explosive when mixed with air. When it combusts, sulphur dioxide gas is formed

### Immediately Dangerous to Life or Health (IDLH) Atmosphere

An atmospheric concentration of any toxic, corrosive, or asphyxiate substance that poses an immediate threat to life or that would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

**Odour:** smells like "rotten eggs" in low concentrations; it can be smelled at less than 1 ppm. Impairs your sense of smell at low concentrations (100 ppm or less).

Solubility                                      Highly soluble in water, oil, emulsions, and well fluids.

Target Organs                                Respiratory system, eyes, central nervous system.

Vapour Density                               1.19 (air = 1.0); H<sub>2</sub>S is therefore heavier than air.

## TOXIC GAS

### Sweet Hydrocarbon Vapors

When sufficient quantities of sweet natural gas (a mixture of methane, ethane, propane, butane etc.) mix with air in the breathing space, it is known to cause workers to become disoriented, or collapse, because of the anesthetic effect. Research has shown that natural gas, in an amount sufficient for a combustible gas detector to read 10%, is toxic as an anesthetic. Large releases of hydrocarbon vapor, or small releases into a confining area, will displace enough air to cause asphyxiation.

### Sour Hydrocarbon Vapors

When sufficient quantities of H<sub>2</sub>S liberated from process streams mix with air in the breathing space, respiratory paralysis will occur. H<sub>2</sub>S will not separate from hydrocarbon gases and settle to lower levels. If it did, we would not need exotic processes to scrub it from the gas.

If you were to take a sealed container filled with sour gas, and allow it to stand undisturbed, H<sub>2</sub>S will never settle to the bottom regardless of how long it stands there. It directly associates with the gas or liquid that carries it and will therefore be present anywhere that hydrocarbon vapors are present, not just in low spots. Fixed H<sub>2</sub>S detectors placed in buildings should be located in the same place as an LEL detector.



H<sub>2</sub>S is immediately dangerous to life and health at 100 ppm.

## DIESEL EXHAUST

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Diesel engines are used by an increasing number of automobiles, generators, light-duty and heavy-duty vehicles, and railroad locomotives. When diesel fuel burns in an engine, the resulting exhaust is made up of soot and gases which may contain thousands of different chemical substances. The soot consists of very small particles that can be inhaled and deposited in the lungs. Diesel exhaust contains 20-100 times more particles than gasoline exhaust. Gases in diesel exhaust, such as nitrous oxide, nitrogen dioxide, formaldehyde, benzene, sulfur dioxide, hydrogen sulfide, carbon dioxide, and carbon monoxide can also create health problems. Those most likely to be exposed to diesel exhaust include bridge, tunnel, and loading dock workers, auto mechanics, toll booth collectors, truck and forklift drivers, and people who work near areas where these vehicles are used, stored or maintained.

### HEALTH EFFECTS OF DIESEL EXHAUST

#### Short-Term (Acute) Effects

Workers exposed to high concentrations of diesel exhaust have reported the following short-term health symptoms:

irritation of the eyes, nose, and throat	light-headedness	feeling "high"	heartburn	wheezing
weakness, numbness, and tingling in extremities	Long-Term (Chronic) Effects	chest tightness	headache	vomiting

Although there have been relatively few studies on the long-term health effects of diesel exhaust, the available studies indicate that diesel exhaust can be harmful to your health. According to the National Institute for Occupational Safety and Health (NIOSH), human and animal studies show that diesel exhaust should be treated as a human carcinogen (cancer-causing substance). Some studies have suggested that workers exposed to diesel exhaust are more likely to have chronic respiratory symptoms (such as persistent cough and mucous), bronchitis, and reduced lung capacity than unexposed workers. People with pre-existing diseases, such as emphysema, asthma, and heart disease, may be more susceptible to the effects of diesel exhaust.

### SUBSTITUTION

Where possible, replace diesel engines with propane-burning engines. Propane burns more completely and more cleanly than diesel fuel.

### VENTILATION

Diesel exhaust in garages, warehouses, or other enclosed areas should be controlled using ventilation. Local exhaust ventilation is the best way to reduce potential hazards to diesel exhaust. A good ventilation system should include both intake and exhaust fans that remove harmful fumes at their source. Tailpipe or stack exhaust hoses should be provided for any vehicle being run in a maintenance shop. General ventilation uses roof vents, open doors and windows, roof fans, or floor fans to move air through the work area. This is not as effective as local exhaust ventilation, and may simply spread the fumes around the work area. General ventilation may be helpful however when used to supplement local exhaust ventilation.

#### Isolate the Worker

Another way of controlling diesel exhaust exposures is to isolate the worker from diesel fumes. Trucks should have air-conditioned cabs to isolate the driver from fumes (Windows should be rolled up so that fumes do not seep inside).

### SAFE WORK PRACTICES

Following the safe work practices below can also reduce exposure to diesel exhaust:

1. Fuel grade 1K should be used instead of Diesel 1. Grade 1K is more expensive but burns more cleanly.
2. All diesel equipment should have regular maintenance and frequent tune-ups. The exhaust system should be checked for leaking fumes.
3. Vehicles should be fitted with emission control devices (air cleaners), such as collectors, scrubbers, and ceramic particle traps. Air cleaners should be checked regularly and replaced when they get dirty.
4. Prolonged idling of machinery should be avoided. A worker should not be in the vehicle when it is idling for a long period.
5. Any cracks in the vehicle should be fitted with weather stripping to prevent fumes from seeping in. The floor of the vehicle should not have any holes.

## PERSONAL PROTECTIVE EQUIPMENT

Respirators are usually the least effective method of controlling exposures, and they should be used only as a last resort. For diesel exhaust, a combination air-purifying respirator that protects against acid gases, organic vapors, and particulates should be used. Respirators must be specific to the hazard, and fitted, cleaned, stored, inspected, and maintained in accordance with OH&S respirator standard (see Personal Protective Equipment section). In addition, you must be trained on how to use a respirator properly, and receive a medical exam to assure that you are physically fit to wear a respirator. Prevent skin contact with diesel exhaust by wearing protective clothing (gloves, long pants, long-sleeved shirts, and face and eye protection) if necessary.

## STANDARDS

There is no OH&S standard for diesel exhaust. However, OH&S does have workplace exposure limits for individual components of diesel exhaust, such as carbon monoxide, sulfur dioxide, benzene, carbon dioxide, nitrogen dioxide, acrolein (propenal) and formaldehyde. In addition, OH&S has a standard for "nuisance" dust that is applicable to the soot in diesel exhaust. The standard limits "respirable" dust exposures (particles that are small enough to lodge in the lung) to 5 milligrams per cubic meter of air (5 mg/m<sup>3</sup>) averaged over eight hours.

Because diesel exhaust has been shown to cause cancer, NIOSH recommends that diesel exhaust exposures be reduced to the lowest feasible limits.

## METHANOL

Methanol is a widely used industrial solvent also found in some household chemicals.

Methanol is a clear, colorless liquid with a faint odor like alcohol. The smell is not very strong and is considered a poor indicator of vapor concentration. You might also know methanol as methyl alcohol, methyl hydrate, carbinol, wood alcohol or wood spirit. Methanol is used as a solvent for lacquers, paints, varnishes, cements, inks, dyes, plastics and various industrial coatings. Methanol appears as an ingredient in many products, from industrial solvents to windshield-washer fluid and nail-polish remover. It is also used as a fuel. Inhalation of methanol vapor is the most common route of occupational exposure. Poisonings have also resulted from absorption through the skin; although it is only a mild skin irritant, it can be absorbed through the skin in toxic amounts.

## EFFECTS OF METHANOL POISONING

As little as four milliliters can cause blindness and 80 to 150 milliliters can be fatal; about half a milliliter per kilogram of weight is deadly. Drinking methanol causes effects similar to common alcohol, such as an upset stomach and dizziness, with the addition of pronounced vision problems. After these effects disappear, they reappear six to 30 hours later, only with much greater severity. Severe symptoms tend to appear 18 to 24 hours after consumption. The relapse time makes it imperative to seek medical help as soon as possible.

The most seriously poisoned lose consciousness and die of heart or respiratory failure. Those who do not die may stay in a coma for as long as a week and may be left blinded. Accidental swallowing of methanol is not likely in the workplace. Should it happen, get medical help immediately. Never try to make the casualty throw up, but if that does happen hold the person leaning forward to reduce the risk of methanol being drawn into the lungs. You can give 240 to 300 milliliters of water to dilute the methanol in the stomach. Like common alcohol, methanol is broken down in the liver. Methanol breaks down to produce formaldehyde and formic acid, which are responsible for many of the toxic effects. The body takes several days to eliminate the methanol. Short term exposure to methanol vapor can irritate the eyes, nose and throat and cause headache, nausea, throwing up, dizziness and trouble breathing. Other common symptoms of drunkenness, such as light-headedness, giddiness, blurred vision and dilated pupils, might also appear. The symptoms depend on the level and length of exposure and can vary from person to person. Industrial exposures to methanol vapors can cause death or blindness. Many reported incidents have involved working in confined spaces or restricted spaces without proper ventilation or respiratory protection. Long term exposure to methanol has been linked to headaches, mood changes, eye and skin irritation, trouble sleeping, stomach problems and visual impairment. Repeated short term exposures can also lead to such symptoms. Methanol is a flammable liquid and can pose a serious fire risk. It burns with a pale blue flame not usually visible in normal light. Its flash point is 12C. Above this temperature enough vapour is produced to create a flammable mixture with air. The vapor is heavier than air and can travel along the ground to a distant source of ignition and flashback. Containers may explode in the heat of a fire. Although methanol is normally stable, contact with strong oxidizing agents increases the risk of a fire or explosion.

## HOW TO PROTECT YOURSELF

Read MSDS sheets and understand the chemical you are working with. Wear proper protective clothing to shield yourself against methanol liquid or concentrated vapor. Never make substitutions for the protective clothing designated for use when working with methanol — it can dissolve some materials. Remove contaminated clothing immediately and thoroughly rinse down exposed skin areas.

In some situations, special clothing and respirators are essential. Such situations include working in confined spaces, restricted spaces, some maintenance operations, and other work environments where effective ventilation and engineering controls are not possible. Always wear splash-proof chemical goggles or a face shield whenever there's a risk of splashing liquid into your eyes.

## PROPANE

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Propane is a three-carbon alkane, normally a gas, but compressible to a liquid that is transportable. It is derived from other petroleum products during oil or natural gas processing. It is commonly used as a fuel for engines, barbecues, and home heating systems. Its name was derived from propionic acid.

When commonly sold as fuel, it is also known as liquefied petroleum gas (LPG or LP-gas) and can be a mixture of propane with smaller amounts of propylene, butane and butylenes. The odorant ethanethiol (ethyl mercaptan) also added so that people can easily smell the gas in case of a leak.

## PROPANE SAFETY

**\* Refer to the USE OF PROPANE section under the POURING SOCKET ROPE PROCEDURE.**

**Eye Contact:** (Proceed to eye wash station) Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. See a doctor for further treatment as soon as possible.

**Eye Protection:** (Use your appropriate PPE) Appropriate eye protection must be worn when working with this material or serious harm can result. Wear chemical goggles and a face shield at all times. **(NOTE: The wearing of contact lenses can be dangerous because chemicals can become trapped under a contact lens. Any delays caused by removing contact lenses in order to rinse eyes could result in injury. Training should include instruction in contact lens removal. Contact lenses are not PPE)**

**Skin Contact:** Avoid any contact with the liquid which may result in frostbite and burns. Soak contact area in tepid water to alleviate the immediate effects and get medical attention.

**Inhalation:** If any signs or symptoms as described in this document occur, move the person to fresh air. If any of these effects continue, see a doctor.

**Skin Protection:** Avoid any contact with skin and clothing. Wear protective clothing including gloves when handling propane.

**Ingestion:** Not expected to be an ingestion hazard. First aid procedures are not considered necessary for ingestion of propane.

**Respiratory Protection:** No special respiratory protection is normally required when using propane.

## BY-PRODUCTS OF PROPANE

Propane appliances can produce carbon monoxide (CO) when they are not properly maintained or when they are starved for air. Carbon monoxide is a colourless and odourless gas which is very dangerous. It can cause sudden illness and death. Individuals can become poisoned by breathing CO. The most common symptoms of CO poisoning are:

- Headache
- Dizziness
- Weakness/fainting
- Nausea
- Chest pain
- Confusion
- Vomiting

It is often hard to tell if someone has CO poisoning, because the symptoms may be like those of other illnesses. A CO detector can warn if high-levels of CO are accumulating in your facility. "If CO Poisoning is suspected get fresh air immediately and seek medical attention"

## COMMUNICATIONS & WORK ALONE POLICY

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Rev: Jan, 2011

This section applies to operations where personnel work alone and assistance is not readily available in the event of injury, illness or emergency.

Swab Master Ltd.'s employees are NOT required to work alone. If an employee should find themselves working alone at the workshop or on site they are required to follow the protocols set forth in this policy.

**The guidelines to follow if an employee is working alone are:**

- Communication
- All employees working after the crew has left the lease or shop MUST phone their Rig Supervisor or the person responsible every hour with their location they are at or the destination they are traveling to.
- Time and distance a worker is from help in an emergency.
- Length of time a worker is out of contact with other persons.
- Degree that access to communication is restricted.
- Presence of hazards associated with the work being done.
- Presence of hazards associated with the environment in which the work is being performed.

All employees that are finished their tasks and have returned to the base will contact their Rig Supervisor or the person responsible and inform them that they are finished and have returned.

They are to be aware of the requirements for the use of Personal Protective Equipment

- Understand Emergency Procedures, Hazard Identification and Control and Vehicle Safety.

## GENERAL INFORMATION

Employees working alone or travelling alone must recognise that proper communication is imperative. The objective of this document is to minimize the risk of working alone at Swab Master Ltd. facilities by ensuring workers are aware of the hazards while working alone and the proper protocols to protect their health & safety.

## SAFE WORK PRACTICES

To the extent feasible, local supervision should:

- Attempt to limit through scheduling the likelihood of employees working alone.
- Limit activities of lone worker to those activities with low hazards.
- Track the start of non-routine activity conducted by lone workers.
- Track the estimated duration of job and any unusual travel activities.
- Track the end of the non-routine activity.
- Activate the procedure to search for “over-due employees” who fail to report.

## COMMUNICATION PROCEDURE

Supervisors should contact a Manager (preferably by text) to tell them if they are working in the field on a daily basis. All employees working after the crew has left the lease MUST phone the General Manager or the person responsible every hour with their location they are at or the destination they are traveling to.

All employees that are finished their tasks and have returned to the base will contact the General Manager or the person responsible and inform them that they are finished and again when they have returned to home base or the hotel if working out of town.

An effective communication system must be in place that allows for the employee working alone contacting persons capable of responding when employees need immediate assistance.

This method of communication may include one or more of the following methods:

- Regular cell phone or radio contact.
- Scheduled check-in procedures with other employees
  - Employees are required to contact the person in charge of dispatch when they arrive on location, when they are finished with the scheduled job and when they return to home base (or hotel for out of town operations)

## OVERDUE EMPLOYEE / COMMUNICATION EQUIPMENT FAILURE

In the event that an employee fails to call in or answer calls or the communications system fails, other options to reach the out-of-contact employee will be employed. These methods include calling the client representative to confirm last known contact. If the employee is not in contact within 30 minutes, back-up personnel will be activated to travel to the field to begin searching for the employee.

## RESTRICTED ACTIVITIES

In general, the activities of lone workers are limited to low hazard activities.

Potentially high hazard activities that should be avoided or undertaken only after taking additional precautions include:

Traveling or leaving shelter at night or during inclement weather.

If there is a job in a location that has no means of electronic communication (i.e.: no cellular service at a remote lease):

- a) No employees will be asked to work alone in this circumstance.
- b) If there is no other way than alone, the General Manager or his designate shall visit the employee at regular intervals, or the employee may exercise their right to refuse unsafe work & the particular job will be rescheduled.

## CONTROL OF HAZARDOUS ENERGY POLICY

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Also known as: Lock Out / Tag Out

Rev: Feb 2016

### PURPOSE

This establishes Swab Master Ltd.'s policy for protecting employees who must do service or maintenance on machines or equipment and who could be injured by an unexpected start-up or release of hazardous energy. Service or maintenance includes erecting, installing, constructing, repairing, adjusting, inspecting, unjamming, setting up, troubleshooting, testing, cleaning, and dismantling machines, equipment or processes. This policy will ensure that machinery or equipment is stopped, isolated from all hazardous sources, and properly locked or tagged out.

### SCOPE

This policy applies to all Swab Master Ltd. employees who may be exposed to hazardous energy during service or maintenance work. Uncontrolled energy includes potential, kinetic, flammable, chemical, electrical, and thermal sources.

### EMPLOYER AND EMPLOYEE RESPONSIBILITIES

Swab Master Ltd. is responsible for implementing and enforcing this policy.

All employees must comply with this policy.

Supervisors must enforce the use of lockout and tag out devices when employees do service or maintenance work and may be exposed to hazardous energy.

Employees who do service and maintenance work must follow the lock out/tag out procedures described in this policy.

Employees who work in an area where lock out/tag out procedures are used must understand the purpose of the procedures and are prohibited from attempting to restart machines or equipment that are locked or tagged out.

### LOCK OUT AND TAG OUT DEVICES

Lockout and tag out devices must meet the following criteria to ensure that they are effective and not removed inadvertently:

Lockout devices must work under the environmental conditions in which they are used. Tag out devices warnings must remain legible even when they are used in wet, damp, or corrosive conditions.

Lock out and tag out devices must be designated by colour, shape, or size. Tag out devices must have a standardized print and warning format.

Lock out devices and tag out devices must be strong enough that they can't be removed inadvertently. Tag out devices must be attached with a single-use, self-locking material such as a nylon cable tie.

An employee who sees a lock out or tag out device must be able to recognize who attached it and its purpose. Each lock must have a unique key or combination.

Energy-isolating devices are the primary means for protecting Swab Master Ltd. employees who service equipment and must be designed to accept a lockout device. Energy-isolating devices must clearly identify function.

Electrical energy sources; Lock out or tag out of electrical energy sources must occur at the circuit disconnect switch. Electrical control circuitry does not effectively isolate hazardous energy. See also, ALTERNATIVE METHODS.

### EXPOSURE SURVEY

Swab Master Ltd.'s HS Representative along with knowledgeable employees will conduct a hazardous-energy survey to determine affected machines and equipment, types and magnitude of energy, and necessary service and maintenance tasks. Each task will be evaluated to determine if it must be accomplished with lock out or tag out procedures.

## **ENERGY CONTROL PROCEDURES**

Authorized employees who lock out or tag out equipment or do service and maintenance must follow specific written energy-control procedures.

The procedures must include the following information:

- The intended use of the procedure
- Steps for shutting down, isolating, blocking, and securing equipment
- Steps for placing, removing, and transferring lock out devices
- Equipment-testing requirements to verify the effectiveness of the energy-control procedures

When re-energizing equipment is necessary - when power is needed to test or position the equipment, for example - temporary removal of lock out or tag out devices is allowed. This applies only for the time required to perform the task and the procedure must be documented.

Employees must do the following before they begin service or maintenance work:

- Inform all affected employees of equipment shutdown.
- Shut down equipment or isolate or block hazardous energy.
- Remove any potential (stored) energy.
- Lock out or tag out the energy sources.
- Verify the equipment is isolated from energy and de-energized.

Employees must do the following before they remove lock out or tag out devices and re-energize equipment:

- Ensure all tools and spare parts are removed and accounted for.
- Ensure all equipment guards are properly replaced.
- Notify all workers of the intention to restore energy to the equipment by removing the locks and the energy-isolation devices.
- Confirm that no worker will be endangered when the locks and energy-isolation devices are removed and the equipment is returned to service.
- Verify machine or equipment power controls are off or in a neutral position.
- Remove the lock out or tag out device.
- Re-energize equipment.
- Ensure the work area is left in a clean and safe condition.
- Return any lock out equipment and unmarked tags to their designated storage area.

## **SPECIAL LOCK OUT/TAG OUT SITUATIONS**

### ***Energized testing***

When an energy-isolating device is locked or tagged and it is necessary to test or position equipment, do the following:

- Remove unnecessary tools and materials.
- Ensure that all other employees are out of the area.
- Remove locks or tags from energy-isolating devices.
- Proceed with test.
- De-energize equipment and lock out or tag out energy-isolating devices.
- Operate equipment controls to verify that the equipment is de-energized.

### ***Contract service and maintenance***



Swab Master Ltd. and contractors must be aware of their respective lock out/tag out procedures before the contractor does onsite work. Swab Master Ltd. employees must understand and comply with the contractor's energy-control procedures.

### **Group lockout**

When authorized employees must service equipment that has several energy sources and several energy-isolating devices, the employees must follow group lockout procedures.

#### **PLEASE NOTE:**

\*\*\*If there is more than one employee on site performing maintenance, and hazardous energy needs to be controlled using Lock Out / Tag Out methods, they must each have their own personal, identifiable lock/ tag attached to each energy-isolating device.

### **Shift changes and long-term shutdowns**

Employees must follow Swab Master Ltd. specific written procedures when it is necessary to continue lock out/tag out when work shifts change and during long-term shutdowns. Management is responsible for monitoring lock out and tag out devices that control the energy to equipment during long-term shutdowns.

## **ALTERNATIVE METHODS**

When lock out or tag out is not used for tasks that are routine, repetitive, and integral to the production process, or prohibits the completion of those tasks, then an alternative method must be used to control hazardous energy.

Selection of an alternative control method must be based on a risk assessment of the machine, equipment, or process. The risk assessment must consider existing safeguards provided with the machine, equipment or process that may need to be removed or modified to perform a given task.

For example, when control circuits are used as part of the safeguarding system, the system must be designed to ensure protection as effective as a mechanical disconnect switch or master shut-off valve. A control-reliable dual channel hardwired circuit of industrially-rated components that satisfies the design features as specifies in ANSI B11.19, with a safety relay or safety PLC to ensure integrity and performance of the safeguarding system must be used.

Under all circumstances, the individual must have exclusive personal control over the means to maintain the state of the control circuit in a protective mode.

## **TRAINING**

Employees who may be exposed to hazardous energy will receive training before assignment to ensure that they understand Swab Master Ltd.'s energy-control policy and have skills to apply, use, and remove energy controls.

- Affected employees will be trained in the purpose and use of energy-control procedures. *An affected employee uses equipment that is being serviced under lockout or tagout procedures or works in an area where equipment is being serviced.*
- Authorized employees will be trained to recognize hazardous energy sources, the type and magnitude of energy in the workplace, the methods and means necessary for isolating and controlling energy, and the means to verify that the energy is controlled. *An authorized employee locks out or tags out equipment to do service work. An affected employee becomes an authorized employee when that employee's duties include service or maintenance work on equipment.*
- Employees whose jobs are in areas where energy-control procedures are used will be trained about the procedures and the prohibition against starting machines that are locked or tagged out.
- Employees will be retrained annually to ensure they understand energy-control policy and procedures.
- Authorized and affected employees will be retrained whenever their job assignments change, energy-control procedures change, equipment or work processes present new hazards, or when they don't follow energy-control procedures.



Current training records will be maintained for each authorized and affected employee including the employee's name and the training date.

## INSPECTIONS OF WRITTEN ENERGY-CONTROL SYSTEM

Swab Master Ltd. will perform and document annual inspections of energy-control system to ensure that employees understand and use them effectively. Documentation will include the following:

- The equipment on which the system is used. (Rigs, Tanks, Pickups, or any equipment during maintenance and / or repairs.
- The date of the inspection.
- The employees included in the inspection.
- The inspector.

If an inspector finds that employees are not following energy-control procedure or that the procedure is not protecting them, employees must be retrained and the procedure's deficiencies corrected.

The inspector must understand the procedure and must be someone other than those following the procedure at the time of the inspection. Each procedure's accuracy, completeness, and effectiveness must be verified.

If the inspection covers a procedure for equipment with an energy-isolating device that can be *locked out*, the inspector must review the procedure with the employees who use it to service the equipment. The inspector can review the procedure with the employees individually or in a group.

If the inspector covers a procedure for equipment with an energy-isolating device that can only be *tagged out*, the inspector must review the procedure with the authorized employees who service the equipment and with the affected employees who may work in the area when the equipment is serviced. The inspector can review the procedure with the employees individually or in a group.

Reference: [Occupational Health & Safety Code – Part 22: Safeguards](#)

## MACHINE GUARDING – SAFE GUARD POLICY

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Applicable Legislation: Part 22 - OH&S Code

### Interpretation

Swab Master Ltd. management will make every effort to ensure machine guarding is added to all applicable machinery and equipment. Under circumstances where machine guarding is not possible, signage and proper training in safe work procedures will be provided. If you are unsure of safeguarding methods, exercise your "right to refuse" unsafe work and ask your supervisor or manager.

All workers are responsible for working safe and ensuring that safeguards and machine guarding are NOT removed or tampered with on any vehicle, tool or other equipment.

## DISCIPLINE POLICY

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The following guidelines are for use by Management and Supervisors in fulfilling their obligations to maintain high standard of performance and to treat their employees fairly. "Positive Discipline" means training, correcting and coaching employees in the following reasonable rules and achieving standards of performance through recognition, rewards and performance reviews. Employee driven performance evaluations will be completed annually.

When positive corrective action seems to have failed, the following rules and standards should be monitored before resorting to suspension or discharge. In the case where performance is not up to standard, the supervisor or manager has an obligation to ensure that the employee has received a reasonable amount of training and coaching.

## RULES AND STANDARDS OF PERFORMANCE

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- Must be reasonably related to the orderly, efficient and safe operation of the job task at hand.
- Must be communicated to the employees affected, (employees must know what is expected of them).
- Must be clear and easy to understand.

***Note: Discipline must be progressive in cases that do not result in immediate discharge.***

Progressive Discipline means increasing in severity. Depending on the severity and/or frequency of an offence, disciplinary action will constitute one of the following actions - Verbal Warning- Written Warning- Equipment Suspension- Suspension without Pay – Discharge/Dismissal. Prior to a disciplinary action, it is essential that the incident be carefully investigated and the facts clearly established. This principle is the same as an accident investigation.

In the case where discharge is being considered for a very serious first offence, it is critical that the employee was aware that such conduct could result in discharge.

In deciding on specific disciplinary action, where you have some flexibility, consideration should be given to:

- Seriousness of the offense or incident
- Whether the incident is the first or a repeated occurrence
- Employees length of service and past record
- Discipline imposed in similar cases in the past
- Any extenuating circumstances

## CAUSES FOR DISCIPLINE

The following is a list of specific items for which you have a responsibility to abide by. All the items listed are subject to progressive disciplinary action. Swab Master Ltd. Management reserves the right to discharge or dismiss any employee who fails to comply with the following items, dependent on the severity of the first offense:

- Failure to comply with any health and safety policies or safe work procedures contained in this manual.
- Preventable accidents
- Theft of any type, including unauthorized use of a fuel card. (i.e.: personal purchases)
- Deliberate damage to Swab Master Ltd. property or customer property.
- Negligence or careless behaviour causing major damage or injury.
- Carrying or consuming intoxicants or illegal substances in Swab Master Ltd. vehicles while on duty or on company property.
- Being under the influence of any legal drug that impairs the driver's abilities to drive during working hours.
- Taking, possessing or being under the influence of any illegal substance or alcohol during working hours
- Failure to comply with **PERSONAL ELECTRONIC DEVICE POLICY**. Found to have a PED on your person during working hours or using a PED during work hours.
- Refusal to carry out instructions or not complying with direct orders of your Supervisor or Manager.
- Failure to notify in writing to the HS Representative or any Manager upon revocation or suspension of a driver's license or of a traffic violation.
- Allowing non-company individuals to ride in or use Company vehicles without permission from Management or unauthorized use of company vehicles or equipment.
- Causing physical or psychological damage to any employee or customer through horseplay or practical jokes or any type of harassment, including sexual harassment of any employee or customer.
- Use of threatening or abusive language and / or assaulting a supervisor, customer or other staff.
- Failing to comply with the **HARASSMENT POLICY** or **VIOLENCE PREVENTION POLICY**
- Failure to report in writing any injury or accident requiring medical attention or WCB reporting before the end of the work shift

- Failure to report in writing any accident, incident or “near miss” involving Company equipment, staff or customer equipment and staff, before the end of the shift
- Failure to report in writing any safety hazards or mechanical hazards on tools or equipment
- Possession of weapons of any type during working hours
- Improper or illegal use of Company communication equipment
- Leaving the job without permission or unjustified absenteeism or lateness
- Dishonesty or falsification of any Company records (including: timesheets; kilometer and fuel reports; or Hours of Service logs)
- Causing or failure to report environmentally hazardous incidents
- Failure to use safety equipment and personal protective equipment as and where directed
- Potentially serious preventable accident, injury or shop incident.



*Note: All disciplinary actions must be documented and kept in the employees file. In case of written warnings, suspension or discharge the employee must be given a copy. In minor offences' where a verbal warning may be sufficient, a note on the discussion must be kept on the employee file.*

## DUE DILIGENCE

In regard to protecting the employees and the public, all reasonable efforts will be made to ensure that all employees conduct themselves according to company policies and comply with applicable legislation. If an employee identifies a situation, where they feel they may be unsafe, then it is their responsibility to immediately bring it to the appropriate person's attention.

**Appeals:** An appeal of a decision by the Supervisor or Manager can be made for a suspension or a dismissal. Any appeal must be in writing and presented to the General Manager within 30 days of the decision.

## DROPPED OBJECTS AT HEIGHT PREVENTION PLAN/POLICY

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### PURPOSE

The purpose of this Dropped Object Prevention Plan is to establish corporate-wide guidelines for eliminating dropped objects when working at height. This prevention plan is intended to significantly reduce both hazards and serious injury and risks to employees that dropped objects can pose. This plan should help mitigate dropped objects by ensuring that workers are properly trained to secure tools at height and understand correct procedures.

## APPLICATION

This Dropped Object Prevention Plan applies to:

- All locations where personnel are employed to perform work at height or where they may be exposed to a dropped object by working below other personnel, tools, equipment and platforms.
- The requirements of this plan must be observed by all personnel involved in working at height or below at height activities.
- This Dropped Object Prevention Plan must be reviewed in any job safety analysis or pre-task planning for activities that require working at height with tools, and in those activities that require working below such activities.
- This plan establishes minimum expectations in order to mitigate the risk of damage to property or personnel done by dropped or falling objects. It is the expectation of Swab Master Ltd. that any tools and materials that could be considered drop hazards are secured with secondary drop systems. The Rig Supervisor is responsible for dropped object prevention on site.

## DEFINITIONS

**Primary Drop System** Primary Drop Systems are systems which serve as the tool's primary form of drop prevention and typically include the worker's hand placement or grip on the tool. Other forms of primary protection may include main support systems for the tool (such as holstering a tool on the body or the platform a tool may be resting while not in use).

**Secondary Drop System** Secondary Drop Systems serve as a backup in the event the primary system fails, and are utilized to prevent damage from a dropped or falling object after it has fallen. Secondary systems may include passive systems such as guardrails with toe-board and mesh netting, screens, floor/hole coverings, and tool canopies that have side protection. They may also include tool restraint systems which are utilized to secure a tool or object to an employee or stationary structure to prevent it from falling (these include pouches and transport buckets with closure systems). Tool arrest systems include tool tethers, which will arrest the fall of the tool and prevent it from striking a lower level and others below.

**Drop Hazard** Any tool, material or object that has an opportunity to fall from elevation to a lower level causing potential for damage to property, injury or death.

**Mitigation** The elimination or reduction of the frequency, magnitude, or severity of exposure to risks by the minimization of the potential impact of a threat or warning.

**Anchorage** A secure point of attachment for tethers, tools and transport buckets with closure systems which is independent of an anchorage used for fall protection for personnel.

**Attachment Point** A device designed and utilized to create a connection point on a tool to which the user can connect a tether or lanyard. Examples may include D-Rings with 3M(TM) DBI-SALA(TM) Quick Wrap Tape and/or 3M(TM) DBI-SALA(TM) Heat Shrink, 3M(TM) DBI-SALA(TM) Quick Spins, etc.

**Tool Lanyard/Tether** An extension made of durable materials that is designed to prevent an object from being dropped. These will typically utilize a connection point on either end of the tether for securing an object to a worker or stationary item.

**Tool Bucket** A bucket designed for the purpose of carrying tools and materials. These tool buckets must be capable of being closed and secured in order to prevent the contents of the tool bucket from spilling. All tool buckets being utilized by Swab Master Ltd. must utilize a closure system.

**Tool Pouch** A bag or pouch that is designed to secure its contents (nuts, bolts, nails, screws, small hand tools, etc.) from being spilled or dropped. Many tool pouches allow the user to remove a tool for use while preventing it from becoming a drop hazard through use of tethers, retractors, etc.

**Tool Holster** A bag or pouch designed to secure single tools or items (hammers, wrenches, levels, radios, bottles, etc.) in order to keep them easily accessible while, in use with other necessary components, helps prevent them from becoming drop hazards.

**Tool Belt** A device that is designed to ergonomically support and manage other dropped prevention items such as, lanyards/tethers, pouches, and holsters on the person of the worker.

**Dropped Object Zone (DOZ)** An area with potential to be impacted by drop hazards currently present in a work-in-progress above. These Dropped Object Zones are to be identified at the Pre Job Safety meeting using illustration with “Danger No GO Zone” to prevent unauthorized entry during overhead work.

**Static Load** Maximum Static Load, or Tensile Strength, refers to the maximum load an object can withstand before failing. This measurement does not take into account Drop Distance or Velocity.

**Dynamic Load** Maximum Dynamic Load refers to the load an object can withstand without failing when dropped from a specified Drop Distance. Maximum Dynamic Load is usually much less than Maximum Static Load due to the dramatic increase in force caused by the velocity of a falling object.

## RESPONSIBILITIES

### Management/Supervision is responsible for:

- Communicating the expectation that dropped objects will be eliminated within Swab Master Ltd., and ensuring that this plan and associated procedures are implemented.
- Coordinating assessments to ensure implementation and effectiveness of the procedure.
- Ensuring employees have appropriate equipment and materials to implement the procedure effectively.
- Ensuring workers have necessary opportunity for required training.

### Health and Safety is responsible for:

- Communicating this procedure and supporting information to applicable employees.
- Conducting assessments to evaluate the procedure’s effectiveness.
- Conducting necessary training with applicable employees.

### All Employees are responsible for:

- Notifying his or her supervisor of any drop hazards within their scope of work.
- Conducting work only after all drop hazards have been eliminated or properly mitigated.
- Stopping work if hazardous conditions prevent the job from being done safely.
- Immediately reporting any dropped or fallen objects.
- Including potential drop hazards in Job Hazard Analyses and Pre-job Planning

## TRAINING

In some circumstances additional training related specifically to dropped and falling objects will be necessary for employees. Training will be provided to each employee who may create or be exposed to drop hazards during their work with Swab Master Ltd. This training shall include:

- The nature of drop hazards and dropped objects in the workplace
- Correct procedures and equipment use for drop prevention
- Purpose and application of applicable Primary and Secondary Drop Systems
- Proper storage and handling of equipment and materials at height
- Reporting requirements for incidents and near misses

When there is reason to believe that an employee who has undergone training does not have adequate understanding or comprehension of Swab Master Ltd. standards regarding drop prevention, it will be required that said employee is re-trained. Other circumstances which could necessitate re-training are changes in procedure, changes in drop prevention equipment, etc. Training should be documented.

## DROP PREVENTION SYSTEMS CONTROL

### Tool Attachment Points

Prior to selecting a tool lanyard, a proper attachment point must be established on the tool. If a tool has a built-in connection point placed by the manufacturer for the purpose of drop prevention, this step is not required. Load rating of the attachment point should be appropriate for the tool's weight.





## Tool Lanyards/Tethers

After establishing an adequate attachment point on a tool, a proper tool tether will then need to be selected which has an appropriate load rating for the tool to be tethered.



## Tool Holsters and Pouches

For some tools and objects, a tool holster or tool pouch may be appropriate. Tools used in these holsters should weigh less than or equal to the manufacturer stated load-rating.



## Tool Belts

Upon choosing a proper method for tethering, it becomes necessary to select an appropriate anchor point for the remaining end of the tethering device. For many small tools, connecting to the worker can be the best option. This is only acceptable for tools weighing less than 5 lbs. D-Rings on fall protection harnesses which have been designated by the manufacturer for use as a tool connection point are a good option. Tool Belts designed with tether points are also a good option.





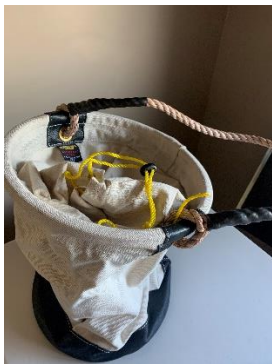
## Wristbands

Another acceptable option for tethering to the human body is with the use of a wristband. Wristbands must never be utilized with tools over 5 lbs.



## Tool Buckets

For the safe transportation of tools and materials, buckets may be utilized only if they are manufactured with a closure system which allows the user to secure the contents of the bucket from potential spills.



## SECONDARY DROP SYSTEMS CRITERIA

### Dropped Object Zones

Dropped Object Zones are to be clearly communicated at Pre Job Safety Meeting with Rig diagram outlining No Go Zone to restrict access. Only employees directly engaged in the activity conducted overhead will be admitted into a Dropped Object Zone.

## HUMAN PERFORMANCE

### Housekeeping

Trash and waste should be kept in appropriate bins which are to be located in convenient locations across the workplace. When at height, these are to be stored in transport buckets with closure systems, pouches, etc. with an ability to be closed and prevent spillage until the material can be properly stored in a waste bin. Employees should “clean as you go” and maintain an orderly work area, resulting in a lower chance for dropped material. Tools and other materials should also be kept in an organized, orderly fashion.

### Tool and Material Handling

Positive tool transfer should be utilized by employees. When transferring a tethered tool from one employee to another, “100% tie off” should be engaged. The tool should be tethered to the passing employee. Prior to handing off, the receiving employee should connect their tether to the tool as well. After positive connection has been completed, the passing employee may disconnect their tether from the tool. By utilizing this passing method, the tool never has an opportunity to become a drop hazard.

### **Equipment Inspection**

All drop prevention systems shall be inspected prior to use. Excessively worn or damaged tools or materials must be immediately removed from service and replaced.

### **Discipline**

Failure to implement these procedures or to use necessary drop prevention systems will be considered a failure to abide by Swab Master Ltd. safety rules and result in discipline up to removal from the project.

### **LEAVING WORKSITE UNATTENDED**

If the workers have to leave the worksite, ensure they leave tools and equipment in a manner that it does not create a fall or trip hazard.

### **TASK COMPLETION**

Upon completion of task, all scrap materials, debris and loose items are to be removed and the area is to be left clean and tidy.

## 9. SUPPORTING ILLUSTRATIONS

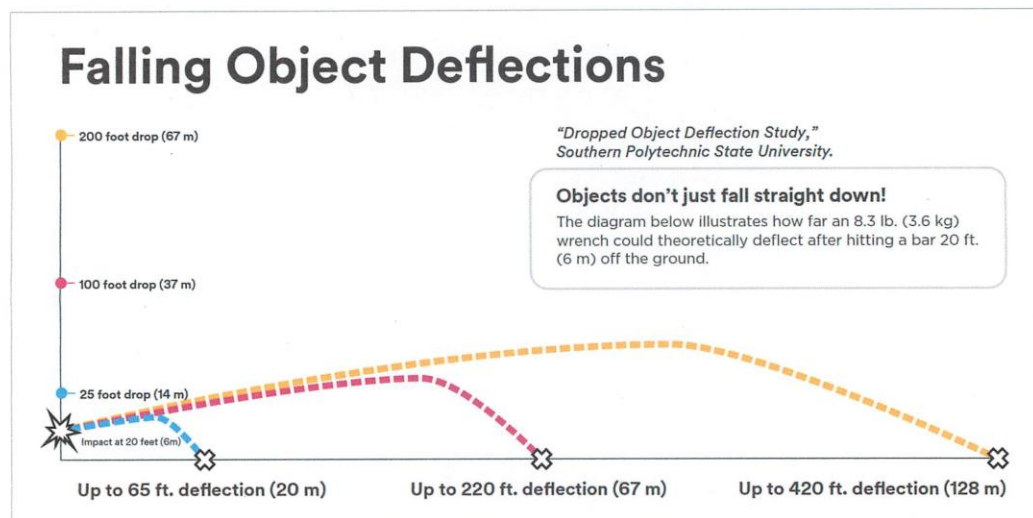
### 9.1 Impact Force Chart

Impact of an 8.3 lb. (3.6 kg) dropped wrench\*

Drop Height		Speed		Impact Force	
Feet	Meters	MPH	KPH	Lbs.	Newtons
5	1.5	12	19	166	738
10	3	17	27	332	1477
25	7.6	27	43	830	3692
50	15.2	39	63	1660	7384
100	30.5	55	88	3320	14768
200	61	77	124	5540	29536
300	91	95	152	9960	44304
400	122	109	175	13280	59072
500	152	122	196	16600	73840

\*Assumes a 3 in. (7.6 cm) deceleration distance for purposes of this calculation of impact force.

### 9.2 Tool Deflection Diagram



## ENVIRONMENTAL POLICY

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Rev: Jan, 2014

Swab Master Ltd. is committed to providing high standards of environmental protection. Managements' objective is to ensure that these standards are an integral part of our day to day operations.

We will strive to:

- Adopt the highest environmental standards in all areas of operation.
- Assess our organizational activities and identify areas where we can minimize impacts.
- Minimize waste through careful and efficient use of all materials and energy.
- Train employees in good environmental practice and encourage employee involvement in environmental action.
- Reduce risks from environmental, health or safety hazards for employees and others in the vicinity of our operations.
- Assist in developing solutions to environmental problems.
- Continually assess the environmental impact of all our operations.

Workers, contractors and visitors will share in the responsibility of following appropriate practices and to adhere to all regulations which govern the work they are performing. They also have the responsibility to report any infractions, and to report any unsafe conditions as well as to protect the environment at all times

## ENVIRONMENTAL – SPILL PREVENTION

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Rev: March, 2015

Purpose: To ensure chemical substances which may contaminate the environment are controlled and to ensure prevention methods are followed accordingly.

### SPILL PREVENTION

All chemical substances, such as methanol, propane, diesel, etc. will be kept in approved containers and clearly and properly labeled. These containers should be closed at all times if not in use, inspected for damage regularly and stored properly to avoid damage and exposure to rainwater.

There is a spill kit located in the shop for small oil spills. There are also spill kits provided in each tank truck to quickly and efficiently clean up small spills. Our crude spec tank trucks are equipped with air actuated valves to prevent spill from the tank.

Spill kits will be inspected on a monthly basis to ensure the contents are adequate. If supplies are missing, the inspector is responsible for submitting an Opportunity Report to have the necessary supplies restocked. The shop inspection is performed monthly by a worker and tank trucks are inspected weekly by managers.

### TRAINING

All employees are to have had WHMIS and TDG training. In-house training is provided to new employees on the Emergency Response Plan. Spill procedures are included in this plan, please review Element 8: Emergency Response. Employees are also trained on what is contained in a spill kit and how to use it, as well as how to dispose of materials properly. They are also informed of who is to be contacted in the event of a minor or major spill.

### COMMUNICATION

Environmental spills are serious and are to be reported to the proper authorities at once. Please review Element 8: Emergency Response to determine WHO and WHEN reporting is necessary. Any spill, small or large should be reported to Swab Master Ltd. Main Office, a Supervisor and Manager as soon as possible.

## EXTREME WEATHER INFORMATION POLICIES

### COLD WEATHER POLICIES

When Swab Master Ltd. employees are outside, protect yourself from cold weather and winter storm hazards by the following procedures.

- Wear layered clothing, mittens or gloves, and a hat. Layering clothes will keep you warmer than a single heavy coat. Outer garments should be tightly woven and water repellent. Mittens or gloves and a hat will prevent loss of body heat. Half of your body heat loss is from the head. Mittens are warmer than gloves because fingers maintain more warmth when they touch each other.
- Cover your mouth to protect your lungs from extremely cold air. Avoid taking deep breaths; minimize talking.
- Watch for signs of hypothermia and frostbite. The best frostbite prevention, when you are with others, is to use the buddy system. A loss of feeling and a white or pale appearance in fingers, toes, nose, or earlobes are symptoms of frostbite. Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness, and exhaustion. If you are alone, periodically cover your nose and lower part of your face with your gloved hand. Frostbite is a severe reaction to cold exposure that can cause permanent harm to people. Hypothermia is a condition brought on when the body temperature drops to less than 95°F.
- Keep dry. Change wet clothing frequently to prevent a loss of body heat. Wet clothing loses much of its insulating value and transmits heat rapidly away from the body.
- Stretch before you go out. If you work outside, do a few stretching exercises to warm up your body. This will also reduce your chances of muscle injury.
- Avoid overexertion. The strain from the cold and the hard labor may cause a heart attack. Sweating could lead to a chill and hypothermia.
- Walk carefully on snowy, icy sidewalks. Be aware of rough terrain hidden under the snow.

### WORK WARM-UP SCHEDULE FOR OUTDOOR ACTIVITIES

This information applies to moderate to heavy physical work activity in any four-hour period. At the end of the four-hour period an extended break in a warm location is expected. Warm-up breaks are assumed to provide 10 minutes in a warm environment. These guidelines apply to worker wearing dry clothing.

Sunny Sky Air Temperature		No Noticeable wind		Wind 8km/h (5mph)		Wind 16km/h (10mph)		Wind 24km/h (15mph)		Wind 32 km/h (20mph)	
C below zero*	F below zero*	Max. work period	# of breaks **	Max. work period	# of breaks **	Max. work period	# of breaks **	Max. work period	# of breaks **	Max. work period	# of breaks **
26 to 28	15 to 19	120 Minutes	1	120 Minutes	1	75 Minutes	2	55 Minutes	3	40 Minutes	4
29 to 31	20 to 24	120 Minutes	1	75 Minutes	2	55 Minutes	3	40 Minutes	4	30 Minutes	5
32 to 34	25 to 29	75 Minutes	2	55 Minutes	3	40 Minutes	4	30 Minutes	5	Non-Emergency Work Should Stop	
35 to 37	30 to 34	55 Minutes	3	40 Minutes	4	30 Minutes	5	Non-Emergency Work Should Stop			
38 to 39	35 to 39	40 Minutes	4	30 Minutes	5	Non-Emergency Work Should Stop					
40 to 42	40 to 44	30 Minutes	5	Non-Emergency Work Should Stop							
43 and below	45 and below	Non-Emergency Work should stop									

\* All temperatures are approximate

\*\* Number of breaks: this includes a normal break after 2 hours and the number of additional warm-up breaks needed.

If reliable weather reports are not available, use the following as a guide to estimate wind velocity:

- An 8km/h (5mph) wind will move a light flag
- A 16km/h (10mph) wind will fully extend the flag
- A 24km/h (15mph) wind will raise a newspaper sheet

- A 32km/h (20mph) wind will produce blowing and drifting snow

## WINTER DRIVING

Employees for Swab Master Ltd. must have their vehicles winterized before the winter storm season. Keeping your vehicles in good condition will decrease your chance of being stranded in cold weather.

- Check your battery, antifreeze, wipers and windshield washer fluid, ignition system, thermostat, lights, flashing hazard lights, exhaust system, heater, brakes, defroster, and oil level prior to leaving the shop. Make sure the tires have adequate tread.
- If you have a cell phone or two-way radio available for your use, keep the battery fully charged and keep it with you whenever traveling in winter weather. If you should become stranded, you will be able to call for help, advising rescuers of your location.
- Keep a windshield scraper and small broom in your car for ice and snow removal.
- Keep your vehicles gas tank full for emergency use and to keep the fuel line from freezing.
- Put together a separate disaster supplies kit for each vehicle. The kit should include the following:
  - ✓ Blanket,
  - ✓ Mittens, socks, and a wool cap,
  - ✓ High energy "munchies",
  - ✓ Several bottles of water. Eating snow will lower your body temperature. If necessary, melt it first,
  - ✓ A small shovel, a pocket knife, and small tools, (such as pliers, a wrench, and screwdriver),
  - ✓ A small sack of sand or kitty litter for generating traction under wheels, a set of tire chains, or traction mats,
  - ✓ Jumper cables,
  - ✓ A first aid kit and necessary medications,
  - ✓ A flashlight with extra batteries,
  - ✓ A candle in a metal can or other fireproof container,
  - ✓ Matches.

## STUCK ON ROADWAY PROCEDURE

- Stay with your vehicle. Do not leave the vehicle to search for assistance unless help is visible within 100 yards.
- Occasionally run engine to keep warm. Carbon monoxide can build up inside a standing vehicle while the engine is running, even if the exhaust pipe is clear.
- Experience has shown that running the heater for 10 minutes every hour is enough to keep occupants warm and will reduce the risk of carbon monoxide poisoning and conserve fuel.
- Turn on the engine for about 10 minutes each hour (or 5 minutes every half hour). Use the heater while the engine is running. Keep the exhaust pipe clear of snow and slightly open an upwind side window for ventilation.
- Leave the overhead light on when the engine is running so that you can be seen.
- Do minor exercises to keep up circulation. Clap hands and move arms and legs occasionally. Try not to stay in one position for too long.
- If more than one person is in the vehicle, take turns sleeping. One of the first signs of hypothermia is sleepiness. If you are not awakened periodically to increase body temperature and circulation, you can freeze to death.
- Keep a window that is away from the blowing wind slightly open to let in air.
- Drink fluids to avoid dehydration. Bulky winter clothing can cause you to sweat, but cold dry air will help the sweat evaporate, making you unaware of possible dehydration. When individuals are dehydrated, they are more susceptible to the effects of cold and heart attacks.
- Melt snow before using it for drinking water. Eating snow lowers your body temperature, increasing risk from hypothermia.
- Avoid overexertion. Cold weather puts an added strain on the heart.

## HYPOTHERMIA & FROSTBITE

Serious health problems can result from prolonged exposure to the cold. The most common cold-related problems are hypothermia and frostbite.

### **Hypothermia**

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature. Body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know it is happening and won't be able to do anything about it.

Hypothermia is most likely at very cold temperatures, but can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or submersion in cold water.

Victims of hypothermia are most often (1) elderly people with inadequate food, clothing, or heating; (2) babies sleeping in cold bedrooms; and (3) people who remain outdoors for long periods -- the homeless, hikers, hunters, etc.

Adults:	Infants:
shivering / exhaustion confusion / fumbling hands memory loss / slurred speech drowsiness	bright red, cold skin very low energy

### **What to Do**

If you notice any of these signs, take the person's temperature. If it is below 95°, the situation is an emergency -- get medical attention immediately.

If medical care is not available, begin warming the person, as follows:

- Get the victim into a warm room or shelter.
- If the victim has on any wet clothing, remove it.
- Warm the center of the body first -- chest, neck, head, and groin -- using an electric blanket, if available. Or use skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- Warm beverages can help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person.
- After body temperatures has increased, keep the person dry and wrapped in a warm blanket, including the head and neck.

A person with severe hypothermia may be unconscious and may not seem to have a pulse or to be breathing. In this case, handle the victim gently, and get emergency assistance immediately. Even if the victim appears dead, CPR should be provided. CPR should continue while the victim is being warmed, until the victim responds or medical aid becomes available. In some cases, hypothermia victims who appear to be dead can be successfully resuscitated.

## **FROSTBITE**

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage the body, and severe cases can lead to amputation.

### **Recognizing Frostbite**



At the first signs of redness or pain in any skin area, get out of the cold or protect any exposed skin -- frostbite may be beginning. Any of the following signs may indicate frostbite:

- a white or greyish-yellow skin area
- skin that feels unusually firm or waxy
- numbness

A victim is often unaware of frostbite until someone else points it out because the frozen tissues are numb.

### What to Do

If you detect symptoms of frostbite, seek medical care. Because frostbite and hypothermia both result from exposure, first determine whether the victim also shows signs of hypothermia, as described previously. Hypothermia is a more serious medical condition and requires emergency medical assistance.

If there is frostbite but no sign of hypothermia and immediate medical care is not available, proceed as follows:

- Get into a warm room as soon as possible.
- Unless absolutely necessary, do not walk on frostbitten feet or toes -- this increases the damage.
- Immerse the affected area in warm -- not hot -- water (the temperature should be comfortable to the touch for unaffected parts of the body).
- Or, warm the affected area using body heat. For example, the heat of an armpit can be used to warm frostbitten fingers.
- Do not rub the frostbitten area with snow or massage it at all. This can cause more damage.
- Don't use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.

## HOT WEATHER POLICIES

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Heat-related emergencies may be likely during the summer season if due care is not taken. Proper care can help prevent these emergencies from occurring. Causes of heat-related emergencies can be **Environmental** (heat wave, high humidity), **Physical** (children, chronic illness sufferers and heart disease), **Behavioural** (spending too much time in the sun or not drinking enough water) or **others** (obesity, fatigue).

### PREVENTION

- Drink plenty of cool fluids – this is the most important action you can take
- Avoid being outdoors during the hottest part of the day – or ensure there is adequate shade for protection
- Slow down your activity as it gets hotter
- Take frequent breaks in a cool or shaded area to allow your body to cool down
- Dress in light coloured, cotton clothing to absorb sweat and let air circulate and heat escape
- Wear a hat when you're in the sun
- Avoid caffeine and alcohol that can cause dehydration.

### SYMPTOMS

Muscle Cramps	Moist Skin	Nausea	Dizziness
Weakness	Exhaustion	High Temperature	Irritable
Rapid or Weak Pulse	Rapid, Shallow Breathing	Skin is redder or paler than normal	

## LIGHTNING SAFETY PROCEDURE

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Rev: Feb 15, 2009

The purpose of this document is to provide a guide for personal safety during thunderstorms.

A brief review of common medical problems encountered with a lightning strike and appropriate first aid treatment is also included.

**Anticipating a Thunderstorm** Keep a constant lookout for thunderstorm clouds in the region. They can develop in as little as 15 minutes. If thunder is heard and intra-cloud /cloud to ground lightning can be seen, you are already in a higher risk situation. Once thunder can be heard, keep estimating the distance to the lightning activity by using the Flash to Bang reckoning method. This is a mental calculation that anyone can do simply by counting the delay between seeing a lightning flash, to hearing the audible thunder associated with the flash. The rule of thumb is that every 3 seconds of delay between a flash to thunder, equates to a distance of 1 kilometer, so where 30 second flash-to-thunder time interval, the lightning activity is about 10 km away.

Data from lightning location systems shows that you should seek a safe location whenever the flash-to-thunder time (Flash to Bang) interval is less than 30 seconds or 10 km distance to the lightning activity. Find a safe location when there is a choice

**Do not remain outdoors. Seek shelter in one of the following locations:**

- Within a dedicated Safe area such as any area that is protected by a Lightning Protection System
- Inside a metal-skinned car, other vehicle, or metal boat/ship with a metal roof
- Inside a substantial (normal headroom) metal-clad building
- Inside a large building, keeping away from windows and any appliances connected to outside electrical conductors

## HAZARDOUS LOCATIONS

**Avoid these if possible:**

- Flammable hydrocarbons and accelerants
- Standing near a Lightning protection down-conductor or mast
- Communications towers, and tall metallic masts
- Any use of fixed line telephones, especially corded headsets. (Cordless & mobile excluded)
- Metal hair clips, metal clips on helmets, keys in pockets etc.
- Small, unprotected buildings, barns, sheds
- Areas on tops of buildings
- Open fields, sports arenas, golf courses, car parks
- Areas near wire fences, clothes-lines, overhead wires, pipe-lines and railroad tracks
- Standing beneath isolated trees, or touching or standing near any tree
- Hilltops and ridges

For any other weather related emergencies – be sure to review  
*Element 8: Emergency Response* of this manual.

## FATIGUE MANAGEMENT POLICY

Rev: Oct, 2016

It is the duty of the employee to report to management if they feel fatigued or if another worker is showing signs of fatigue and to take corrective action.

It is the duty of the employer to be aware of signs of fatigue, train employees on recognizing, controlling and reporting fatigue and to listen to employees if they state they feel fatigued and take corrective action.

“Fatigue” is a state of reduced mental and physical alertness of functioning caused by sleep related disruption or deprivation as a result of extended work hours, insufficient sleep, or the effects of sleep disorders, medical conditions or pharmaceuticals which reduce sleep or increase drowsiness.

A person suffering from fatigue has slowed reflexes and reduced function in daily life. Excessive tiredness is also a known risk factor in motor vehicle and workplace accidents.

Fatigue management is a shared responsibility between management and workers and involves factors both inside and outside of work.

Employers and persons conducting a business or undertaking are responsible for using a risk management approach to manage fatigue.

## UNDERSTANDING FATIGUE

Most people need about eight hours of sleep a day (some more, some less). However, those who do not get enough sleep each day can develop a sleep debt that adds up for them over time. A single night’s shortened or disrupted sleep may not affect worker performance, but an accumulated sleep debt can. The resultant fatigue can lead to:

- Inability to see properly
- Slower reflexes and reactions
- Micro sleeps (up to 60 seconds where the brain goes to sleep and worker blacks out no matter what they are doing)
- Automatic behaviour (where worker does routine tasks but is not having any conscious thoughts)
- Inability to make good decisions or plans
- Inability to solve problems
- Inability to concentrate, including wandering thoughts
- Decreased alertness and watchfulness
- Inability to remember things just done, seen, or heard
- Inability to notice things the worker usually would notice
- More mistakes than usual
- Failure to respond to changes in surroundings or situations
- Poor logic and judgment, including taking risks
- Inability to respond quickly or correctly to changes
- Inability to communicate well
- Inability to handle stress
- Moodiness (giddy, depressed irritable, restless, depressed, impatient, etc.)

Studies show fatigued workers are more often absent, sick, quit, and cause more incidents than other workers. They also work slower, check their work more, rely more on co-workers, and avoid complex tasks.

Workers must never operate motor vehicles and/or heavy equipment while excessively fatigued.

## CAUSES OF FATIGUE

Aside from sleep debt, fatigue can occur and affect workplace health and safety for a variety of reasons, including:

- Work scheduling
- Work task type and length
- Work and workplace conditions
- Worker health and stress
- Workplace safety culture
- Many workers rely on caffeinated drinks, such as coffee to assist them to manage fatigue. However these will contribute to sleep loss if used within six hours before sleep. This effect may be

increased if combined with medications containing ingredients such as pseudoephedrine hydrochloride (found in some nasal/sinus medications, stimulants, and wake promoting agents).

### FATIGUE IS ASSOCIATED WITH THE FOLLOWING

- Spending long periods of time awake;
- Obtaining an inadequate amount of sleep over an extended period; and
- Obtaining an insufficient quality of sleep over an extended period.
- Fatigue significantly affects a person's ability to function and the effects of fatigue include decreasing performance and productivity, and increasing the potential for incidents and injuries to occur.
- Circadian rhythms, or the internal body clock, are the body's natural rhythms that are repeated approximately every 24 hours.
- Due to circadian rhythms, the human body is more awake during the day. The human body experiences a reduction in activity in the midnight to dawn period. This is a fundamental human characteristic and cannot be changed.
- Work schedules that require people to be awake and active at night, or to work for extended periods of time, disrupt circadian rhythms. These disruptions:
  - Affect the quality and quantity of sleep;
  - Affect task performance; and
  - May also contribute to a sense of personal dislocation and imbalance.
- Accidents are more likely to occur at night, particularly during the period when the circadian cycle is at its lowest point (midnight to dawn) when a person would normally be sleeping.

### RECOGNIZING AND ASSESSING FATIGUE

If you suspect a worker is too fatigued to be fit for work it is your duty to report to your Rig Supervisor and/or General Manager. The following may assist in developing a worker fatigue assessment tool:

- How many hours did the employee work in the past week?
- What is the pattern of hours worked in the past week?
- Do environmental factors pose an additional load
- Does the workers condition match the mental, physical, and emotional demands of the work
- What is the physical intensity of the task
- Does the employees physical fitness match the task's demands
- is the employee suffering from acute sleep loss
- does the employee have a sleep debt
- is the employee required to work at a time out of sync with the waking cycle of the employees circadian rhythm
- What events are currently going on away from work? If the employee experiencing life stressors?
- How well has this employee coped in the past?
- Does the employee get support at work and at home

### SLEEP SCORE CHART

Step 1	Sleep in prior 24 hours					
	Sleep	<2Hrs	3Hrs	4Hrs	5+Hrs	
	Points	12	8	4	0	
Step 2	Sleep in prior 48 hours;					
	Sleep	<8Hrs	9Hrs	10Hrs	11Hrs	12+Hrs
	Points	8	6	4	2	0
Step 3	Hours of wake since last sleep					
	Add one point per Hour awake greater than sleep in Step 2.					

## MANAGING FATIGUE

- Length of shifts - depends on physical and mental load of the work
- Periodic breaks while working to allow for rest and recovery, this can be achieved through a proper work schedule
- Distribution of leisure time - allow for adequate rest and recovery
- Regularity of shift system 'allows workers to prepare for work
- Length of shifts worked - this can contribute to fatigue
- Previous hours and days worked - the effects of fatigue are cumulative, workers may have sleep debt due to the length of previous shifts
- Type of work being performed - pay particular attention to the level of physical and/or mental effort required
- Time of the day when the work is being performed - remember that disrupting the body's circadian rhythms can cause fatigue and affect performance
- The key to managing fatigue successfully is ensuring that workers are given sufficient time between shifts. Adults require approximately seven to eight continuous hours of daily sleep. One way of doing this would be giving workers two successive full days off within a seven day period, so workers can catch up on their night sleep

## FATIGUE AND SLEEP

Sleep is the only effective long-term counter-measure to fatigue. Maintaining sufficient levels of sleep will prevent fatigue.

The amount of sleep required by a person varies, with seven to eight hours of daily sleep considered the average for an adult. People who continually get less sleep than that necessary for them will accumulate a sleep debt.

For example, if a person who requires eight hours of sleep only has six hours of sleep, then this person is deprived of two hours of sleep. If this occurs over four consecutive nights, the person will have accumulated an eight hour sleep debt. Sleep debt leads to increased levels of fatigue.

Many workers rely on caffeinated drinks, such as coffee to assist them to manage fatigue. However, these will contribute to sleep loss if used within six hours before sleep. This effect may be increased if combined with medications containing ingredients such as pseudoephedrine hydrochloride.

## HARASSMENT & VIOLENCE POLICY

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Revision: December 12, 2018

Swab Master Ltd. believes that all our employees and customers have the right to work in an environment that is free from all forms of harassment and violence.

This policy has been written to uphold the requirements as recommended from the Occupational Health & Safety Code (Part 27 - Violence & Harassment).

### DEFINITIONS

“Employee” is defined as any person (management or worker) who works for a wage or salary for the company.

“Harassment” is defined as any objectionable comments or behaviour that

1. is directed at another employee or a client,
2. is made on the basis of race, creed, religion, colour, sex, sexual orientation, marital status, family status, disability, physical appearance, age, nationality, ancestry or place of origin; and
3. can be viewed as a threat to the health or safety of the employee.

“Violence” is defined as any violent or potentially violent behaviour that arises from or occurs in the workplace and affects staff, visitors, clients and / or the public. Violence may include, but is not limited to:

1. verbal or physical actions that are threatening against an individual, their family, friends or associates
2. hitting, shoving, pushing
3. intentional damage or destruction of, or the threat of destruction to property
4. harassing or threatening phone calls or electronic communications
5. harassing surveillance or other forms of stalking
6. possession or use of weapons and /or firearms

### COMMITMENTS & OBLIGATIONS

Swab Master Ltd. is committed to the psychological health and safety of every employee. The company will develop and implement harassment and violence policies and procedures in consultation with the HS Representative, a Manager and/or Supervisor and a Worker.

The company is devoted to eliminating, or at the very least, controlling the hazards of harassment and violence to its employees, self-employed persons or visitors on site. The company agrees to investigate any report of harassment or violence brought forward, while maintaining confidentiality and focusing on the private nature of the threat. The company will only disclose the minimum amount of personal information needed to complete a comprehensive investigation.

The harassment and violence prevention policies and procedures are not intended to discourage any employees from exercising their rights under any law including the Alberta Human Rights Act.

Swab Master Ltd. is dedicated to taking every precaution to eliminate or control the hazards of harassment and violence by taking reports seriously and investigating each incident. When investigations are complete, the results will be shared with the staff, while respecting the privacy of the individuals involved. If the company is aware of any employee who may be exposed to domestic violence at the workplace, measures will be taken to protect that worker from harm.

The company will review and revise if necessary the harassment and violence policies and procedures when:

- a) an incident of harassment or violence was reported
- b) every three years
- c) upon recommendation by the HS Representative or any employee affected by the policies / procedures.

Swab Master Ltd. agrees to provide training to all employees on the recognition of harassment and violence, the implemented policies and procedures as well as controls, appropriate responses - including obtaining assistance and how to report incidents, and how to investigate and document incidents of harassment and violence.

## CONTROL METHODS

While it is impossible to control the main component of this type of hazard, people; there are some measures that can be taken to reduce or eliminate the risk of violence or harassment. Some effective control methods to use at our company include, but are not limited to:

1. using electronic surveillance while having signs indicating this
2. using locks or having physical barriers like high counters to separate visitors from workers
3. keeping workspaces, exits and parking areas clear and well lit.
4. limit the number of exits / entrances to buildings
5. post emergency numbers in plain view of everyone
6. set up worker-friendly reporting procedures and train workers to follow them
7. include harassment and violence prevention training in the orientation of new employees
8. review harassment and violence prevention methods regularly with all staff
9. have a communications plan with specific call-in times for field employees
10. ensure violence is included in emergency response planning
11. train workers on how to identify signs of escalating behaviour and techniques on how to defuse a potentially violent situation - but ensure they understand **NEVER** to put themselves in harm's way.

## DE-ESCALATING AN ANGRY PERSON

Firstly, a caveat: People experience and express their anger in a lot of different ways. Some internalize by pouting or withdrawing. Some yell, scream, swear, or insult others. Obviously, the way to respond to different anger expressions will differ. For the purpose of this policy, we will discuss ways to deal with people who are verbally aggressive, insulting, or even threatening.

1. Ask yourself if the Anger is justified  
Sometimes anger is perfectly reasonable and it is always emotionally wise to consider the feelings of others during an interaction. You should ask yourself why the person is angry, what role you may have played, and if there is anything you can or should do to resolve the situation. It's important to note that a person can be justifiably angry, yet express that anger in an unjustifiable way. For example, it is justifiable to be angry that you did not get paid on time, but it is not justified to harm another person because of that.
2. Stay Calm  
One of the most important things you can do when someone is angry at us is to stay calm. By that, I mean to avoid yelling, swearing, or raising our voice. We may not feel calm in the situation, but we can still act steadily. By speaking slowly and directly, and keeping our voice calm and soft, we are less likely to exacerbate a situation. People tend to match each other's volumes, pace, and general tone, so instead of meeting the angry person where he or she is at—and escalating the situation—try to de-escalate the situation by subtly encouraging them to lower their voice.
3. Avoid Character Assaults  
A guaranteed way to escalate an angry situation is to attack the other person's character. Insulting them, or even saying things like, "You always do this," is likely to make things worse. Instead, focus on specific behaviors or feelings in the moment. Instead of saying, "You always yell at me when you're angry," say, "Please don't yell at me." Instead of saying, "You're so impatient," say, "Can you please be patient with me." Those may seem like subtle differences but you don't want the person to feel attacked, as it will make them even more likely to lash out.



#### 4. Know When to Disengage

In any exchange with an exceedingly angry person, there may come a point when you need to disengage from the situation. There are lots of reasons why this might be the smart thing to do: To stay safe, but also, and more commonly, because the situation is such that there is unlikely to be any positive resolution. The person may be so angry that a healthy, reasonable conversation simply can't be had at the time. If that's what is going on, the best thing to do might be to say, "Let's talk about this later when we're calm," and move on.

#### 5. Stay Safe

Finally, but primarily, when you are dealing with an angry person, you must make sure you are safe. People can be angry without being physically aggressive, of course and an angry person is not necessarily a violent person; far from it. However, we need to be aware of the fact that when people are angry, they may feel the urge to lash out, sometimes physically. If you don't feel safe, get away from the person. Period. If you absolutely must interact with someone who you feel threatened by, try not to be alone with the individual, and enter the situation with a plan to get yourself out safely if the need should arise.

If you are unable to calm the aggressor, you can try asking them once again to leave the area until they are calmer. Depending on the situation, you will have to question what your response should be. You can use an air horn to draw attention to the situation. One LONG BLAST will alert anyone in the area that you are in a dangerous situation and need assistance. This will likely bring the angry person back to awareness of the situation and they will calm down or leave. You may say that you need to use the phone and call one of the managers that you know to be on site.

In other cases, they may become even angrier. In such cases, it is wise to lock yourself in the office manager's office and call the police. However, if the aggressor has a weapon of any sort - it would be best to remain as calm as possible and pacify their anger until they are able to calm down or you are able to contact someone for help. This would be the case as well if it is known that there is no one working in the shop to come to your aid.

The best response will depend on the situation and your ability to read it. The most important note to remember is not to mirror the feelings of the angry person. Stay calm and be patient enough to allow the person to settle down.

### REPORTING PROCEDURES

The company encourages all persons to promptly report incidents and will suggest ways to reduce or eliminate risks. No employees will experience any reprisals because of reporting harassment or violence. An employee who believes they are being subjected to harassment is encouraged to clearly and firmly make known to the harasser that the harassment is objectionable and must stop.

Where circumstances prevent an employee from taking action, or there is threat of violence, or the employee feels unsafe doing so, or the action taken is unsuccessful, the employee may report the alleged harassment to one of the following persons designated by our company to receive these complaints:

Garth Smith	Owner / Operator	403-793-0033
Hong Zhong Guo	Safety Representative	403-409-9577

Reporting harassment or threats of violence shall be managed in a serious manner at all times. All employees, supervisors and management are expected to follow this policy at all times and report all incidents in the workplace. All incidents should be reported in the same fashion as other events, using an Incident / Near Miss form. Employees who report incidents may also request to do so confidentially. Such requests will be

honoured to the degree legally allowable. Any employee who is uncomfortable reporting incidents of harassment or violence in person may do so on our website @ [www.swabmaster.com](http://www.swabmaster.com) under the “NEWS” section of the Employee Resources Page.

All employees reporting incidents of harassment, violence or threats of violence will be directed to seek medical attention from a treatment provider of their choice. The office has a listing of local practitioners who deal with psychological workplace incidents.

## INVESTIGATIONS

It is company policy to follow up on reports of harassment or violence and appropriate actions taken to correct the situation. It is important that employees know that information they provide will be held in the strictest of confidence unless the report is deemed to be detrimental to the employee’s health and well-being. The company will notify the alleged aggressor, provide them with the circumstances of the complaint and undertake a confidential investigation. This will be completed in accordance with the legislated requirements and the investigation methods detailed in Element 9 of this manual.

Following the conclusion of the investigation, the company will inform the employee and the alleged aggressor of the results of the investigation. Disciplinary action will be applied as deemed necessary, immediate dismissal may be recommended depending on the severity of the incident.

With regards to harassment or potential violence toward clients, this may be cause for immediate dismissal. Losing the company business by harassing client representatives may cause a financial downfall in the company and in turn, affect the livelihood of all other employees in the process. Harassment or threats to clients will not be tolerated.

## ADMINISTRATION

The company and the management team will be responsible for upholding this policy and keeping it in force. Each incident will be evaluated at the time it is reported. Statistics will be maintained and reviewed quarterly. The policy will be reviewed annually to ensure the program is effective.

## INVESTIGATION POLICY

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It is the policy of Swab Master Ltd. that all accidents, incidents (near misses), environmental and occupational illness be reported and investigated in a timely manner.

The purpose of such investigations shall be to determine the root cause of the incident so appropriate action can be taken to prevent recurrence. It is important to remember the focus of the investigation is not to lay or assess blame.

Supervisors are responsible to conduct and submit reports and then share the outcome of the investigation with their workers at a safety meeting to ensure everyone understands what really occurred and what corrective action has been or will be implemented. Training is provided in-house through a module on our website @ [www.swabmaster.com](http://www.swabmaster.com).

A general review of incident reports and investigations will be included on the agenda at the monthly safety meetings.

Refer to Element 9 for the Investigation Procedures.

## MANAGEMENT OF CHANGE POLICY (MOC)

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A management of change process is used to eliminate workplace hazards that could lead to injuries, equipment damage, service loss or environmental impacts. It is important to implement this process so no change occurs that could increase the severity or consequence of an existing hazard, or that a hazard is introduced where none existed previously.

Management of change is a best practice used to ensure that safety, health and environmental risks are controlled when the company makes changes in the shop, documentation, personnel, tools and / or equipment.

When decisions are made rapidly, safety and health risks can increase resulting in disastrous consequences. A safety management process for the application of MOC is not just a best practice, but is highly recommended. A MOC program can be used to ensure that all changes to any tools, equipment or process is properly reviewed and any hazards introduced by the change are identified, analyzed, and controlled before start-up.

One obvious benefit MOC provides is avoiding the consequences of unforeseen safety and health hazards through planning and coordinating the implementation of change. Other benefits include:

- Minimizing unplanned adverse impacts on the overall process and flow of work
- Maximize productivity and efficiency of staff planning and implementing the changes
- Provides a stable and safe environment
- Ensures the proper level of technical completeness, accuracy and testing of tools, equipment and / or procedures before implementation.
- Provides an appropriate level of approval and involvement from each level of staff

Changes being considered must be thoroughly evaluated for how they affect employee health and safety. Sometimes there is a domino effect, where one change leads to more changes, and you will need to determine if the changes being considered will cause additional changes to operating procedures.

Employees, as well as contract workers whose work will be affected by the change, must be informed and trained on the new tool, equipment and/or process or whatever the change may include.

## PROCEDURE FOR MOC

1. When a new tool, equipment or process is needed, there will be an Opportunity Report started to complete the need. When completing the Opportunity Report form - "MOC" will be selected and a description of the need included. All other fields on the top of the form must be completed as required.
2. The Opportunity Report will then be submitted to the office for further approval. Management will discuss with the Supervisors and Workers if this change is indeed necessary and essential to the health and safety of all employees, the public and the environment.
3. When the change is deemed necessary and essential to the overall health and safety of the company and its employees, steps will be taken to identify the hazards of the change before the changes are made. It is imperative to review the change as if it has been implemented already. This will allow for unforeseen hazards to show up caused by the change. It will also ensure the domino effect is taken into account - what other hazards will be seen when the change is implemented?
4. If any new equipment is to be mounted at height, consider DROPS Observation Prevention as part of the assessment.
5. After these steps have been taken, a new procedure for the change can be written up and required training can be established. All employees who will be expected to use the new tool or equipment or perform the new process must have been trained prior to implementation.
6. Training will also put the change through another round of exposure, so that other hazards may be identified. After these steps are complete, one member from each level of employee will be expected to document their thoughts and opinions on the change. This may be done during safety meetings, or online through our website.
7. When the written procedure and the training have been complete and reviewed by the staff, it can then be implemented fully. All staff will be informed of the change by email, during the next safety meeting or directly by a Manager or Supervisor. The finalized version of the procedure will then be added to the safety manual in the appropriate section.

## MAINTENANCE POLICY

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Inventory control for all Swab Master Ltd. equipment is kept on file by the office staff. Regular maintenance checks are controlled by shop work employees with the exception of CVIC for commercial vehicles. Tools are inventory controlled in the shop as well, and schematics or manuals for all tools are kept on file in the office and listed on the employee section of the Swab Master Ltd. website. Each rig unit has an inventory of tools associated with it. These tools are to be kept clean and regularly inspected.

All tools and equipment shall be properly maintained to reduce risk of injuries to employees or damage to property. Preventative maintenance is a very important part of the maintenance program. All shop and unit tools are to be inspected before use **EVERY TIME!** Be aware of the inspections schedules and protocols from section 7 in this manual. The following items shall be inspected and documented:

- Tank Truck Inspection Report
- Rig Inspection must be completed daily, and deficiencies reported.
- Visual inspection every time the Derrick is in the raised position as per Kodiak Engineering guidelines.
- Pick-up Trucks weekly, walk arounds daily
- Managers Crew & Equipment Inspections done monthly.

If a defect is sighted, a report must be filled out and brought to the attention of the immediate supervisor. Minor repairs can be made by supervisor or upon his instructions. All other repairs such as changing tires, belts and lights must be done by a qualified person. If the defect is not able to be corrected immediately, use the lockout / tag-out protocols to remove the tool or equipment from service until the repairs are complete.

If you find that on a site you have defections or breakdowns you are required to report to your immediate supervisor of your situation. If it is deemed necessary to call for emergency towing, service, or repairs your supervisors will instruct you to do so.

***All defects, repairs and maintenance are tracked and trends are established to prevent recurrence of incidents.***

**Do not attempt to repair the following:**

- Flat tires
- Lights (bulbs can be replaced)
- Belts
- Or other repairs that you do not have qualifications, procedures or instructions on how to do.

If any repairs are made on equipment or vehicles you must:

- Ensure all equipment or vehicles are inoperative before proceeding
- wear required PPE
- Only allow employees in the area if they are needed for the repair
- Make sure area is free of any hazards before repairs are to be started
- Ensure area is cleaned after repairs are completed and no hazards are left behind.

It is everyone's responsibility to see that we follow these procedures to ensure that we run a safe company.

The safety information in this policy does not take precedence over OH&S Regulations. All employees should be familiar with the [OH&S Act and Regulations](#).

## MODIFIED WORK POLICY

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Rev: Sept, 2013

Modified work assists in the rehabilitation and early return to work of ill or injured employees.

Swab Master Ltd. will make every reasonable effort to provide suitable (temporary) employment to any employee unable to perform their duties. This may include a modification of the employee's original position or providing an alternate position, depending on the employee's medical restrictions.

Only work that is considered to be meaningful and productive shall be considered for use in the modified work program. These jobs must comply with current W.C.B. adjudicative guidelines.

Participants placed on modified work will be expected to provide feedback in order to improve the program.

All employees, regardless of injury of illness, will be considered for placement in modified work.

### RETURN TO WORK / MODIFIED WORK PROCEDURE

Modified work programs assist in rehabilitation and early return to work of the injured employee, while enabling companies to reduce the costs of injury and illness.

### TYPES OF MODIFIED WORK

Modified work may consist of the following:

- Modifying the existing job – an employee's existing job is changed to remove those parts of the job which the employee is currently unable to do because of the injury.
- Provide Transitional Work – an employee will perform regular job duties; however, less time is spent doing these duties. For example, an employee may work two hours/day for the first week, 4 hours/day for the second and then return to regular hours on the third.
- Providing an Alternate Job – an employee is given other duties than his usual ones.
- Training – an employee is sent for training to enhance job skills.
- Any combination of the above – Modified Work may be made by combining the above listed formats.

### MODIFIED WORK PROCEDURES

#### **Medical Approval**

Medical approval is needed before any offer of modified work is made. Any injured employee should be provided with an information package to be delivered to the attending physicians.

#### **Offer of Modified Work**

When the information package is returned, the information will be reviewed and an appropriate modified work offer will be made. The offer must be made in writing using the supervisor. A copy of the form will be forwarded to the W.C.B. if any employee refuses modified work; the reasons should be immediately informed.

#### **Monitor Return to Work**

The supervisor of any employee on Modified Work shall ensure that the worker is not directed to perform work that he is not medically approved for. The supervisor will also monitor the employee's progress.

#### **Return to Regular Duties**

An employee may return to regular duties once medical clearance has been given by a physician. This approval should be in writing. The W.C.B. must be informed of the employee's return to work.

#### **Follow-up**

When an employee returns to regular duties his supervisor should monitor his progress so that any concerns may be addressed.

**NOTE:** *Caution is exercised to ensure that injuries are not aggravated through the modified work program.*

## MUSCULOSKELETAL INJURY PREVENTION POLICY

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If a worker reports to the employer what the worker believes to be work related symptoms of a musculoskeletal injury, the employer must promptly:

- (a) Review the activities of that worker, and of other workers doing similar tasks, to identify work-related causes of the symptoms, if any, and
- (b) Take corrective measures to avoid further injuries if the causes of the symptoms are work related.

### THREE STAGES OF MUSCULOSKELETAL INJURY

- Discomfort of the affected area for a period of time – sharp pains, dull aches, tingling or numbness due to compressed nerves, burning sensations, swelling, redness, tenderness to the touch and pain when affected body parts are moved.
- Begins to affect work tasks – increasing discomfort
- Discomfort is present all the time and affects way of life and work – possible disability.

*\*\*\* Workers and employers should recognize the signs before stage 3 is reached.*

### RECOGNIZING & REDUCING HAZARDS

The purpose of performing a workplace hazard assessment is to identify specific workplace hazards related to musculoskeletal injuries and to then reduce the workers exposure. By using a checklist it can be determined whether a certain task has a risk factor and once identified the hazard can be reduced or eliminated by:

- Provide workers with awareness of hazards through training
- Ensure employee is not ill or incapable of performing the task at hand
- Adapting the workstation or equipment to take into account the work being performed.
- Providing sufficient room for proper body movement
- Provide variety in tasks as to avoid repetition
- Provide machinery to assist in repetitive tasks
- Avoid over reaching or stretching by having controls easily accessible
- Provide proper tools for the task
- Allow frequent breaks if workers are performing strenuous tasks
- Allow for severe hot or cold weather

Through orientation and training employees and new employees will be made aware of the following:

- Work related hazards,
- The proper method of performing a task
- Risks of not following the rules and regulations
- Reporting all injuries no matter how minor
- Reporting fatigue, aches and pains, or illness

## MANUAL MATERIAL HANDLING POLICY

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### WHAT IS MATERIAL HANDLING?

Manual material handling and movement is a common component of many tasks in all positions at Swab Master Ltd. Typically it involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. The one thing all these tasks have in common is the potential to result in some adverse effect such as personal injury or property damage.

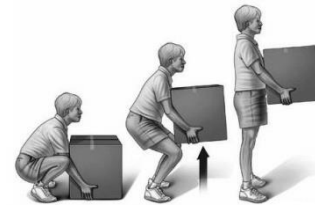
## HAZARDS RELATED TO MANUAL MATERIAL HANDLING

Manual material handling and movement may expose workers to physical conditions such as force, awkward postures/repetitive motions that can lead to injuries, wasted energy and wasted time. Injuries from manual material handling and movement include cuts, bruises and sore muscles to more serious conditions related to low back pain; shoulder disorders; or hip and knee deterioration. Manual material handling is the most common cause of occupational fatigue and lower back pain.

## PREPARATION

Before attempting to lift something you should identify the hazards and implement proper controls.

- a) Check to see if there is a mechanical lifting aid available
- b) Assess / identify the weight of the load
- c) Get help with heavy or awkward loads (two-man lift)
- d) Ensure that the load is free to move (i.e. not stuck to something else)
- e) Ensure you can lift the load without over-exertion
- f) Check that your path is clear and free of slip, trip or fall hazards



## SAFE LIFTING TIPS

- Prepare for the lift by warming up your muscles
- Use handles or lifting aids where appropriate
- Keep your back straight and your butt out
- Stand close to the load and face the direction you intend to move
- Be sure you have a good grip on the load
- Tuck your chin into your chest
- Keep your arms straight and abdominal muscles tight
- Lift the load as close to and centered to your body as possible
- Lift smoothly, without jerking
- Try to avoid twisting, side bending and carrying loads with only one hand
- Lift with your legs and body weight, not your back

## PERSONAL ELECTRONIC DEVICE (PED) POLICY

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Rev: November 2, 2015

The purpose of this policy limiting the use of any Personal Electronic Device (PED) at work is to protect Swab Master Ltd employees. Inappropriate use of PED's at work can cause injuries because it is distracting and may interfere with the proper and safe use of equipment and machinery. Any PED's with headphones or earpieces may also become tangled in machinery or interfere with the proper use of and personal protective equipment (PPE).

For field purposes, this policy will not supersede any Clients policy. If the Client has a PED policy in place, it will be strictly followed. This policy will be secondary to the Clients rules and regulations regarding personal electronic devices.

Devices that are covered by this policy include any type of cellular mobile phone, handheld gaming units, pagers, two-way radios, electronic tablets or iPads, or any other wireless devices, whether owned by the company or the individual worker.



This policy applies to all employees with reference to using a PED during work hours. Any PED must be left in your vehicle or in your locker. You are permitted to check your PED during scheduled or spontaneous downtime (coffee break, lunch break, standby, etc.).

- *Management / Office Staff / Supervisors* – are permitted to use a PED during work hours, providing the purpose is work-related. For example, a Supervisor checking in with a client or with Swab Master Ltd. management.
- *Rig Assistants / Shop Hands / Helpers* – are NOT permitted to use any PED during work hours. This includes working in the shop or in the field at a well location.
- *Visitors / Contractors* – Are permitted to use their own PED provided they are in a safe environment as deemed by their Swab Master Ltd. envoy.

## PROHIBITIONS

General: While in the workplace during work hours, all workers are expected to focus on work and may not inappropriately use and PED in the workplace for any inappropriate or unnecessary purposes, including but not limited to:

- Engaging in personal conversations
- Playing games
- Surfing the internet
- Sending SMS/MMS text or video messages
- Use of any social media platform
- E-reading
- Checking email

Driving: While operating any vehicle, workers may not use a PED in any way unless and until they pull over to a safe location. If it is urgent to make or receive a call, the worker must remain parked off any roadway, out of harm's way and the conversation must be completed before they resume driving.

## EMERGENCIES

Please ensure that your family, friends, loved ones and next of kin have the office & dispatch phone number. 403 – 794 -0034 or 403 – 793 - 0033

In the event of a personal emergency, they may contact the office or dispatch. They will know which supervisor to contact to reach you at the shop or on location.

## VIOLATIONS

Workers who violate this policy will be subject to disciplinary actions as referred to in the **DISCIPLINE POLICY**.

## PERSONAL PROTECTIVE EQUIPMENT POLICIES

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**Swab Master Ltd.'s policy is that:**

- All PPE used by Swab Master Ltd. will be within the requirements of [OH&S regulations](#) and [CSA standards](#).
- All PPE used by Swab Master Ltd. will be maintained in accordance with manufacturer's instructions and requirements. The employee using the PPE will inspect company issued PPE at time of issue and before each use.
- All workers are trained in the correct use, care, limitations and assigned maintenance of the personal protective equipment.

**To ensure that PPE in itself does not pose a danger the worker the following must be done:**

- All PPE that is of questionable reliability, damaged or in need of service or repair will be removed from service immediately.
- No piece of PPE will be modified or changed contrary to manufacturer's instructions or specifications or OH&S Regulations.

The safety information in this policy does not take precedence over OH&S regulations. All employees should be familiar with the OH&S Act and Regulations.

All Field Safe Work Procedures / Job Tasks require basic Personal Protective Equipment. An online training module is available on our website @ [www.swabmaster.com](http://www.swabmaster.com) and field training is provided to new employees.

## EYE & FACE PROTECTION POLICY

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In compliance with Part 18 of the Occupational Health and Safety Code, Swab Master Ltd. will provide its employees with proper eye and face protection as outlined in section 228(1-3). The Occupational Health and Safety Code may be accessed on each rig unit, at the shop and office or viewed online at: [http://work.alberta.ca/documents/whs-leg\\_ohsc\\_2009.pdf](http://work.alberta.ca/documents/whs-leg_ohsc_2009.pdf)

**Eye and face protection is designed to protect the worker from such hazards as:**

- Flying objects and particles
- Molten metals
- Splashing liquids
- Ultraviolet, infrared and visible radiation (welding)

**This PPE is of two types:**

Basic eye protection includes:

- CSA approved safety glasses
- Mono-frame goggles and spectacles with or without side shields

Face protection includes:

- Metal mesh face shields for radiant heat or hot and humid conditions
- Chemical and impact resistant (plastic) face shields
- Welders and shields or helmets with specified cover
- Filter plates and lenses

Hardened glass, prescription lenses, and sport glasses are not acceptable substitutes for proper required industrial safety eye protection. In compliance with Part 18, Section 229(1-3) only approved CSA Standard eye and face protection will be used.

As written in section 230 of Part 18 of the Occupational Health and Safety Code, employees who wear contact lenses will be advised of any hazards that are associated with wearing contact lenses and advised of alternatives to wearing lenses.

Proper care and maintenance of eye and face protection is a mandatory requirement. Any defect of the eye or face protection must be reported immediately to a Supervisor or Manager by using an Opportunity Report. The faulty equipment will be replaced as soon as possible.

## FLAME RESISTANT CLOTHING POLICY

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In compliance with Part 18 of the Occupational Health and Safety Code, Swab Master Ltd. will provide its employees with flame resistant coveralls as outlined in section 232(1-2). The Occupational Health and Safety Code may be accessed on each rig unit, at the shop and office or viewed online at: [http://work.alberta.ca/documents/whs-leg\\_ohsc\\_2009.pdf](http://work.alberta.ca/documents/whs-leg_ohsc_2009.pdf)

As a worker, you are responsible to ensure that clothing worn beneath flame resistant outerwear and against the skin is made of flame resistant fabrics or natural fibres that will not melt when exposed to heat.

## FOOT PROTECTION POLICY

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In compliance with Part 18 of the Occupational Health and Safety Code, Swab Master Ltd. will ensure that all its employees (with the exception of office only personnel) are using proper footwear as outlined in section 233(1-4). The Occupational Health and Safety Code may be accessed on each rig unit, at the shop and office or viewed online at: [http://work.alberta.ca/documents/whs-leg\\_ohsc\\_2009.pdf](http://work.alberta.ca/documents/whs-leg_ohsc_2009.pdf). In addition, the following information should be taken into consideration:

- Safety footwear is designed to protect against foot hazards in the work place. Safety footwear protects against compression, puncture injuries, and impact.
- Safety footwear is divided into three grades, which are indicated by colored tags and symbols. The tag color tells the amount of resistance the toe will supply to different weights dropped from different heights. The symbol indicates the strength of the sole. For example, a triangle means puncture-resistant sole able to withstand 135kg (300-ft. lbs.) of pressure without being punctured by a 5cm (2-inch) nail.
- Footwear should be chosen according to the job hazard and CSA standards. Boots must be laced and tied properly for their safety features to be effective.
- Protective boot dressings should be used to help boots last longer and to provide greater water resistance.
- High cut boots should be used to provide ankle support and help prevent ankle injuries.
- Defective safety footwear should not be worn (e.g. exposed steel toe caps).
- Safety footwear should not be modified (unless it is in compliance with section 233(4) of the OH&S Code)
- Feet should never be under-protected.

## HEAD PROTECTION POLICY

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In compliance with Part 18 of the Occupational Health and Safety Code, Swab Master Ltd. will ensure that all its employees (with the exception of office only personnel) will be supplied with industrial protective headwear as outlined in section 234(1-2) The Occupational Health and Safety Code may be accessed on each rig unit, at the shop and office or viewed online at: [http://work.alberta.ca/documents/whs-leg\\_ohsc\\_2009.pdf](http://work.alberta.ca/documents/whs-leg_ohsc_2009.pdf).

You must complete a JSA prior to engaging in work to determine controls for identified hazards. While CSA Standard hard hats are considered basic PPE for most procedures or tasks, it is only necessary if there is a foreseeable danger of injury to the workers head.

Safety head wear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

Most head protection is made up of two parts:

- The shell (light and rigid to deflect blows)
- The suspension (to absorb and distribute the energy of the blow)

Both parts of the headwear must be compatible and maintained according to manufacturer's instructions. If attachments are used with headwear, they must be designed specifically for use with specific headwear used. Bump caps are not considered to be helmets. In Alberta, they can be used only when the sole hazard is the possibility that a worker will strike his head against a stationary object.

As outlined in section 239(1-2), if it is impractical to don protective headwear during a particular work process, you must inform Swab Master Ltd. at once that more efficient head protection is needed. Stop work until the hazard can be effectively controlled.

***Proper CSA approved head gear will be supplied to the employee by Swab Master Ltd.***

## GLOVE PROTECTION POLICY

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PPE for the hands include: finger guards, thimbles and cots, hand pads, mitts, gloves, and barrier creams. Choose hand PPE that will protect against the job hazard. Gloves should fit well and be comfortable. This type of PPE has to protect against chemicals, scrapes, abrasions, heat and cold, punctures and electrical shocks.

### TYPES:

- PPE for the hands come in many forms, each designed to protect against certain hazards. Gloves most commonly used in the construction industry are made from leather, cotton, rubber, synthetic rubbers and other man-made materials, or combinations of materials.
- Vinyl coated or leather gloves are good for providing protection while handling wood or metal objects.

### REQUIREMENTS

- Hand PPE must be inspected for defects before use.
- All chemicals and fluids must be washed off gloves before their removal.
- Gloves must fit properly to be effective protection.
- Proper hand PPE must be used for each job.
- Manufacturers' instructions must be followed when using any hand PPE.
- Exposed skin must be covered; there must be no gap between the hand PPE and the sleeve.
- Gloves must not be worn when working with moving machinery
- Hand PPE with metal parts should not be worn near electrical equipment.

## LIMB & BODY PROTECTION POLICY

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If there is a danger that a worker's hand, arm, leg or torso may be injured, Swab Master Ltd. will ensure that the workers wear properly fitting hand, arm, leg or body protective equipment that is appropriate to the work, the work site and the hazards identified.

## SKIN PROTECTION POLICY

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Swab Master Ltd. will ensure that workers skin is protected from a harmful substance that may injure the skin on contact or may adversely affect a worker's health if it is absorbed through the skin. All controlled products shall be labelled and MSDS provided for that product. Gloves and splash gear will be provided for such tasks that require protection from these hazards.

## RESPIRATORY PROTECTION POLICY

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Swab Master Ltd will supply and maintain Respiratory Protective Equipment as required for the job as outlined in the Occupational Health and Safety Code Part 18, sections 244 through 254. The Rig Supervisor is responsible for selecting the appropriate respiratory protective equipment for his/her site.

To facilitate the use of Respiratory Protective Equipment, our employees must be clean-shaven. Moustaches are permissible provided they do not interfere with the seals of breathing apparatus. Mask fit test must be performed on each employee that requires the use of a mask and documented.

The use of respiratory protection is mandatory where workers will be exposed to hazardous vapours, gases, or dust exceeding OH&S or client exposure standards.

Respiratory protection must be available for use during any situation where potential for exposure to hazardous vapours, gases, or dust exists.

SCBA or SABA must be available for any situation where oxygen levels may drop below 19.5%. Its use will be considered standard for rescues under these conditions.

## RESPIRATORY PROTECTIVE EQUIPMENT: CODE OF PRACTICE

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This Code of Practice will govern the selection, use, care, and maintenance of respiratory equipment for Swab Master Ltd. employees. The objective of this code is the continuous provision of safe working conditions on all Swab Master Ltd. worksites. Each Manager and Rig Supervisor is responsible for ensuring that those employees reporting to him are familiar with, and work within, the requirements of this Code of Practice at all times. Swab Master Ltd. shall be responsible for preparing and implementing written operating procedures for a respiratory protection program as per the most recent CSA Standard. It is mandatory for Swab Master Ltd employee's to wear appropriate respiratory equipment when a hazard has been identified that requires the employee(s) to have protection.

A Respiratory Protection Program is comprised of the following elements:

- Program Administration
- Hazard Identification
- Selection of the Appropriate Respirator
- Respirator Facial — Fit
- Training
- Use, Inspection, and Monitoring of Respirators
- Cleaning, Inspection, Maintenance, and Storage of Respirators
- Health Surveillance of Respirator Wearers
- Program Evaluation

### PROGRAM ADMINISTRATION

The HS Representative will administer the respiratory protection program. Evaluation of this program will be part of the yearly audit. External audit will be done every 3 years. Periodic consultation with external experts will be done to determine standards and equipment are up-to- date.

**\*\*\*Ensure all users receive written instructions relating to the respirator program\*\*\***

## RESPONSIBILITIES

### Program Administrator

- Determining the concentration of air contaminants prior to selecting and periodically during respirator use
- Selecting the appropriate respirator for present or anticipated contaminants
- Maintaining records and written procedures to document the respirator program and allow for the evaluation of the program's effectiveness
- Evaluating the respirator program's effectiveness
- Coordinating periodic medical surveillance where applicable
- Providing for periodic audit by a knowledgeable third party
- Taking and documenting action to correct defects found during audits

### WORKER

It is the responsibility of the Worker to appropriately notify the HSE Department when gassings have occurred, or when a question of the health or physical fitness of the respirator wearer arises (i.e. asthma).

### HAZARD IDENTIFICATION

- Assess hazardous areas, tasks, and operations
- Determine IDLH atmospheres: what situations may put a worker into a hazardous atmosphere  
IDLH: circumstances in which the atmosphere is deficient in oxygen or the concentration of a harmful substance in the atmosphere:

- (a) is an immediate threat to life,
- (b) may affect health irreversibly,
- (c) may have future adverse effects on health, or
- (d) may interfere with a worker's ability to escape from a dangerous atmosphere
- Use of LEL (lower exposure limit) and personal H2S monitors to assist in evaluating atmosphere conditions

## SELECTION OF APPROPRIATE RESPIRATOR

### *Supplied Air Respirators*

Air supplied respirators include conventional self-contained and supplied air breathing apparatus for protection against oxygen deficiency and high concentrations of vapors, fumes, and gases.

There are two kinds of air supplying apparatuses that are used in the petroleum industry for protection from H2S. They maintain positive air pressure in the face piece. They are:

1. Self-Contained Breathing Apparatus (SCBA)
2. Supplied Air Breathing Apparatus (SABA)

SCBA has its own air cylinder while SABA is linked to a remote air supply by an extended airline.

These types of respirators require a supply of 'breathing air' for the worker's consumption. The air supply may be contained in remotely located air cylinders, or a portable compressor or air blower.

- Breathing airline hoses (small diameter) shall not exceed 90 meters (300 feet) in length or length as specified by the manufacturer.
- Breathing airline hoses (small diameter) should be a minimum of 6 mm (1/4") ID.
- Breathing airline hose connections should be standardized throughout the work site and be a minimum of 6 mm (1/4") ID.
- Breathing airline hoses should be:
- Hydrocarbon and chemical resistant
- Non-kinking
- Used only for breathing air
- Capable of withstanding a minimum of 1725 kpa (250 PSI)

### *Air Supplied Respirator May Be Used Where:*

- The oxygen content in the atmosphere is less than 19.5% or more than 23%
- The atmospheric contaminants are considered to be immediately dangerous to life and health (IDLH)
- The concentration of the atmospheric contaminants are unknown
- The atmospheric contaminants are unknown
- Breathing air for use with the self-contained and/or the supplied air breathing apparatus will be compressed, stored and tested in accordance with the most recent CSA Standard.

### *SUPPLIED COMPRESSED AIR*

Compressed breathing air must meet the purity requirements of Table 1 of the most recent CSA Standard, Compressed Breathing Air and Systems.

*NOTE: Compressed oxygen shall not be used in supplied-air respirators. Open circuit SCBA cylinders that have previously used compressed air shall not be converted to compressed oxygen service.*

### *AIR PURIFYING RESPIRATORS*

Air purifying respirators are devices for filtering or purifying the air the worker breathes. These respirators must never be used in oxygen deficient atmospheres, in atmospheres immediately dangerous to life and health (IDLH), or in any concentrations exceeding the maximum stated by the manufacturer for that specific piece of equipment (welding procedures as identified the most recent CSA Standards). Air purifying respirators include dust masks and cartridge or canister respirators for protection against particulates and low concentrations of

vaporous fumes and gases. The contaminated air passes through material that either traps the contaminant by filtration or chemically absorbs/adsorbs the contaminant before it enters the respiratory system of the user.

- Air purifying respirators may only be used where:
- The oxygen content of the atmosphere is greater than 19.5% but less than 23%
- The contaminant has good warning properties
- The concentration of the contaminants does not exceed the maximum use factor of the respirator
- The respirator is designed to protect the wearer against the contaminants present in the atmosphere
- No other contaminant is present in the concentration above its OEL (occupational exposure limit)
- The need for emergency escape is not required

### **EQUIPMENT APPROVALS**

All respiratory protective devices used must be approved according to the most recent GSA Standards. Purchase of respiratory equipment must be approved through the HSE Department after review of appropriateness of selected equipment for the application intended.

## **BREATHING APPARATUS**

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### **RESPONSIBILITY**

It is the responsibility of Management to have all breathing apparatus serviced by a qualified person annually and to ensure cylinders are not past their hydrostatic test dates according to manufacturer's specifications. It is the responsibility of the user to ensure the breathing apparatus is in a ready to go condition. This includes; checking to see if all the components of the breathing apparatus are in place. Checking to make sure the cylinder is full and all the straps are released properly.

Swab Master Ltd. recommends the breathing apparatus be worn regularly for continuous training and practice and to ensure it is ready to use for emergency situations. Ask the main office is unsure where to find training apparatus.

### **RESCUE**

No person shall attempt to rescue a person who is suspected of being overcome by H<sub>2</sub>S, unless the proper rescue and resuscitation techniques are known and breathing apparatus (SCBA) is worn.

The Operator and Helper will develop a plan and record it on the tool box meeting form if it is a job where no Company representation or supervision is available.

### **TRAINING**

Personnel that are required to wear respiratory protective equipment (SCBA or SABA) must have the appropriate training, be competent in its use, and shall be clean-shaven where the respirator mask seals with the face.

All personnel, who may work in an area where H<sub>2</sub>S concentrations could be 10 ppm or greater, shall be trained in the following:

- H<sub>2</sub>S properties, toxicity and sources
- Respiratory protection requirements
- Atmospheric monitoring methods

All personnel, who are designated as having a response role in an area where H<sub>2</sub>S concentrations could be 10 ppm or greater, shall be trained in the following:

- H<sub>2</sub>S properties, toxicity and sources
- Respiratory protection requirements
- Atmospheric monitoring methods
- Emergency rescue techniques
- Emergency response procedures

\*\*Refresher H<sub>2</sub>S training shall be an item for emergency drills on a regular basis



## FIT TESTING REQUIREMENTS AND PROCEDURES

A qualitative or mechanical (field) respirator fit test will be used to determine the ability of each individual respirator user to obtain a satisfactory fit and an effective seal. During any fitting test, the respirator head straps must be as comfortable as possible. Tightening the straps will sometimes reduce the face piece leakage, but the wearer may be unable to tolerate the respirator for any length of time. Fitting tests will be carried out at least annually, or whenever work conditions necessitate a change in the type of respirator worn.

**NOTE:** *When other personal protective equipment, such as eye, face, head, and hearing protectors are required to be worn, they will be worn during the respirator fit tests to ensure a proper seal with them on. Documentation of fit test results will be kept as a medical file for each employee.*

**Qualitative Fit Test:** Qualitative fit testing ensures that an effective seal is being attained, assuming that the wearer knows the proper procedures for fitting and wearing the face piece. This test is performed on every worker to ensure that he can physically wear the selected type of respiratory protection equipment.

**The Isoamyl Acetate Vapor (Banana Oil) Test** involves saturating a piece of cloth and passing it close to the respirator near the sealing surface, taking care to avoid skin contact. During the test, the wearer should go through the movements of a normal working situation.

**Mechanical (Field) Fit Test:** This is a fit test that is performed immediately prior to entering a contaminated or potentially contaminated area. The test is MANDATORY for all persons entering the area.

**Negative Pressure Test:** Consists of closing off the inlet by covering with the palms or replacing seals over the cartridges, or by squeezing breathing tubes so that air cannot pass; inhaling gently as the face piece collapses slightly, and holding the breath for a few seconds. If the face piece remains slightly collapsed and no inward leakage is detected, the respirator fit is adequate.

**Positive Pressure Test:** Is conducted by closing off the exhalation valve and exhaling gently into the face piece. The fit is considered satisfactory if a slight positive pressure can be maintained without any evident outward leakage.

Any person that fails the fit test or does not attempt the fit test shall NOT be allowed into the contaminated or potentially contaminated area.

### TRAINING AND TESTING

Employees, including the respirator user, the supervisor, the person issuing respirators, the person performing fit tests, and the person maintaining and repairing respirators, will receive adequate training by a qualified person to ensure the proper use of the respirators.

For those employees who will be working in IDLH environments using SCBA, specific training and individual qualifications will be mandatory. The H2S Alive Course (8 hours) every three years, reviews H2S gas hazards and monitoring, use of SCBA, mechanical and annual artificial respiration, and rescue techniques.

The Rig Supervisor and/or General Manager will carry out the training and testing functions, and maintain a record of each employee's training. The respective Manager is responsible for ensuring this Training and Testing is carried out at the proper times. Those conducting fit tests will be trained as mandated by manufacturers of equipment used for testing.

Contractors, having their own program, will provide evidence that their employees have been properly trained and are qualified to use the equipment required.

## CLEANING, MAINTENANCE, AND STORAGE OF RESPIRATORY PROTECTIVE EQUIPMENT

Each respirator shall be properly maintained to retain its original effectiveness. An acceptable program of care and maintenance shall include:

- 1) Cleaning and Sanitizing
- 2) Inspection, Testing, and Repair
- 3) Storage
- 4) Record Keeping

Defective or non-functioning respirators shall be appropriately tagged, and shall be removed from service until repaired.

Breathing air cylinders should be maintained at a minimum of 90 percent capacity, except while being used. The regulator and any warning device should be tested to determine they function properly.

Cylinders should be checked for condition and hydrostatic test date. The Canadian Transport Commission (CTC) requires steel and seamless aluminum cylinders be tested every five years.

Review/test source of compressed breathing air supply at least every six months to ensure it meets the most recent CSA Standards.



Each swabbing rig is equipped with two 30 min self-contained breathing apparatus. Swab Master Ltd. uses the Scott 2.2 self-contained breathing apparatus shown here.

### Pre-Use Inspection Checklist for SABA

1. Are all required components available? These include:
  - regulator assembly
  - mask assembly
  - escape cylinder
  - harness assembly
2. Is the escape cylinder at full pressure?
3. Is the air supply line and manifold intact?
4. Is the low-pressure hose (breathing tube) intact?
5. Is the head harness intact and the straps fully extended?
6. Is the mask clean and dust free?
7. Is the lens clear and free of scratches?
8. Is the nose cup installed correctly?
9. Is the exhalation valve intact, clean, and functioning properly?
10. Are all harness straps clean, in good repair, and fully extended?
11. Does the purge valve work?

#### After-Use Inspection of Breathing Apparatus

1. For SCBA, replace air cylinder with a fully charged one.  
For SABA, check air cylinder, replace or refill the escape cylinder if it has been used.
2. Clean the face piece.
3. Inspect the harness.
4. Perform a pre-use inspection on apparatus.
5. Store apparatus in an appropriate place.

**Common types of contaminants found on oilfield worksites, and the accepted respiratory protection equipment for Swab Master Ltd. workers. It must be understood that excessive concentrations of an airborne contaminant may warrant the use of more efficient equipment than is included in the list.**

Hazard / Risk	Type of Respiratory Protection Recommended
Airborne Contaminant (Mould, Pollen, Dust Mites)	Respirator
Nuisance Dust – F.E. Powder (including dry chemical)	Disposable particulate mask, ½ or full-face mask with particulate filter suitable for the type of dust present
Hydrogen Sulfide (H <sub>2</sub> S)	Positive Pressure SCBA or SABA
Caustic Mists	½ or full-face respirator with acid gas cartridge
Sulfur Dioxide	½ of full-face respirator with acid gas cartridge or Positive pressure SCBA or SABA
Oxygen Deficiency	SCBA or SABA

### CLEANING AND DISINFECTING

All types of respirators should be cleaned and disinfected after each use. The person who wears the mask is responsible for the cleaning and bagging.

- Wash the components in 50C (maximum temperature) water with a mild detergent. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- Rinse components thoroughly in clean, warm, preferably running water (50 C maximum temp)
- Drain thoroughly.
- Where the cleaner used does not contain a sanitizing agent, respirator components should be immersed for two minutes in a sodium hypochlorite solution made by adding approximately 1 ml of laundry bleach to 1 liter of water at 50 C.
- Rinse as in above. The importance of thorough rinsing cannot be over-emphasized. Detergents or sanitizers that dry on face pieces may result in dermatitis. In addition, some sanitizers may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- Do not use alcohol wipes as this dries out the rubber components.
- Components should be air-dried.
- Reassemble face pieces, replacing filters, cartridges, and canisters when dry.
- Test the respirator to ensure that all components work properly.
- It is recommended that the face piece be tagged with the following information:
  - a) date of cleaning
  - b) signature of the person who did the cleaning.

**(Manufacturers specifications for cleaning/maintenance take precedence over the above if they exist).**

## STORAGE

Respiratory protective equipment should be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

Respirators placed in work areas should be stored in clearly marked containers which are quickly accessible at all times.

An employer must ensure that respiratory protective equipment that is not used routinely but is kept for emergency use is inspected at least once every calendar month by a competent worker to ensure it is in satisfactory working condition.

## HEALTH AND SURVEILLANCE OF RESPIRATOR WEARERS

Assessment must be done to determine if the wearer may use the equipment. Documentation must be done if wearer has any medical conditions that may affect his/her ability to use the equipment. Medical assessment is required if there is doubt about the workers ability to use a respirator for medical reasons. Medical clearance for the worker to use a respirator safely will be maintained on the worker's personnel file. Documentation files will be kept with the Occupational Health Nurse.

## PROGRAM EVALUATION

Program and standard operating procedure must be evaluated annually. The wearer acceptance must be evaluated for comfort, easy breathing, fatigue, vision, communication, movement, and job performance.

## FALL PROTECTION POLICY

In compliance with Part 9 of the Occupational Health and Safety Code, because of the high potential for serious injuries due to falls, there will be strict enforcement of the Swab Master Ltd. fall protection program. The Occupational Health and Safety Code may be accessed on each rig unit, at the shop and office or viewed online at: [http://work.alberta.ca/documents/whs-leg\\_ohsc\\_2009.pdf](http://work.alberta.ca/documents/whs-leg_ohsc_2009.pdf).

1. Workers will be provided with the proper fall arrest and fall protection
2. 100% fall protection must be maintained at all times
3. Workers will be trained in the proper use and inspection of their fall arrest equipment
4. Workers must use the fall arrest equipment when required
5. Fall arrest must be worn at all times when working at a height of 3 meters or more above the ground
6. Fall arrest systems must be engineered systems
7. Safety harnesses, lanyards, lifelines, and fall arresting devices must be approved under CSA standards as referenced in Part 9 of the Occupational Health & Safety Code.

## GENERAL GUIDELINES

Under Part 9 of the Occupational Health and Safety Code, Rig Supervisors shall evaluate all overhead work for fall exposures and shall pre-plan and install required fall protection systems prior to assigning the work to employees.

Personnel shall make maximum use of primary fall protection systems such as scaffolds, aerials lifts, personnel hoists, etc. These systems shall be equipped with complete working/walking surfaces free of floor openings, with standard guardrail systems in place and a safe means to access.

In the event that the hiring clients fall protection requirements are greater than legislated requirements or Swab Master Ltd. requirements, all employees must adhere to the hiring clients' rules and regulations.

The use of fall protection shall be in compliance with applicable regulatory standards. Field modifications are

not permitted on harnesses or lanyards. Persons who are observed not utilizing fall protection equipment will be identified and their Supervisor or Manager will be notified. The person will be removed from the worksite and face disciplinary measures as outlined in the Discipline Policy on Page # 31 of this manual.

In situations where a fall could result in impalement or other injury (i.e. operating equipment), fall protection equipment shall be utilized regardless of the potential falling distance.

## EMPLOYEE RESPONSIBILITIES

All workers must:

- Be knowledgeable on and carry out legislation guidelines
- Be knowledgeable of the hazards while working with multiple services on location (i.e. snubbing units, rigs)
- Call in or report to your Rig Supervisor or a Manager any potential hazards that you feel uncomfortable with (i.e. climbing higher on a 400 barrel tank, climbing damaged ladder system)
- Ensure that fall protection equipment is properly inspected and in good working order
- Ask questions if you don't know (i.e. fitting harness, possible deficiencies in equipment, anchor points)

## EMERGENCY RESPONSE

Before beginning work at any location, employees are expected to conduct and participate in a Pre-Job Safety Meeting. It will be determined at this meeting if a fall arrest system should be used. If it is deemed necessary for a fall arrest system to be in place while working, a fall arrest rescue plan must also be established before the start of the job.

As each site is different, employees are to refer first to the standard Emergency Response Plan. Employees are expected to adjust the Emergency Response Plan to reflect any necessary changes that may be applicable to the particular site they are working on. A fall arrest rescue plan must be established and documented before any employee begins work.

## PERSONAL PROTECTIVE EQUIPMENT

A lifeline and safety harness must be worn at any time a worker could fall:

- A vertical distance of 3 meters or more,
- A vertical distance of less than 3 meters if there is an unusual possibility of injury,
- Climbing tanks or Derricks
- Into or onto a hazardous substance or object, or through an opening in a work surface,
- Entry into confined spaces or restricted space.

Fall protection devices such as lifelines, safety harnesses/lanyards, etc. shall be inspected for damage and/or deterioration prior to use. Defective equipment shall be removed from service and destroyed or returned to the shop or office and an Opportunity Report filled out.

Fall protection devices subjected to shock loading imposed during fall arresting shall be removed from service and returned to the shop or office with an incident or near miss form filled out.

## INSPECTION

The employee will inspect the entire personal fall arrest system prior to every use. The competent person will inspect the entire system in use at the initial installation and weekly thereafter. The visual inspection of a personal fall arrest system periodically will follow the manufacturer's recommendations.

The following is general guidance for the inspection of this equipment.

**Harness Inspection Webbing:** Inspect the entire surface of webbing for damage. Beginning at one end, bend the webbing in an inverted "U". Holding the body side of the belt toward you, grasp the belt with your hands

six to eight inches apart. This surface tension makes the damaged fibers or cuts easier to see. Watch for frayed edges, broken fibers, pulled stitches, cuts, burns, and chemical damage.

**“D” Rings/Back Pads:** Check “D” rings for distortion, cracks, breaks, and rough or sharp edges. The “D” ring should pivot freely. “D” ring back pads should also be inspected for damage.

Attachment of Buckles - Note any unusual wear, frayed or cut fiber, or distortion of the buckles.

**Tongue/Grommet:** The tongue receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. The webbing should not have any additional punched holes.

**Tongue Buckle:** Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. The roller should turn freely on the frame. Check for distortion or sharp edges.

**Friction and Mating Buckles:** Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.

**Lanyard Inspection Hardware:** Snaps: Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper closes.

**Thimbles:** The thimble must be firmly seated in the eye of the splice, and splice should have no loose or cut strands. The edges of the thimble must be free of sharp edges, distortion, or cracks.

**Web Lanyard:** While bending the webbing over a curved surface such as a pipe, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Examine the webbing for swelling, discoloration, cracks, or burns. Observe closely for any breaks in the stitching.

**Rope Lanyard:** Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change from the original diameter. The rope diameter should be uniform throughout, following a short break-in period. Make sure the rope has no knots tied in it. Knots can reduce the strength of the rope by up to 60%.

**Shock-absorbing Lanyard:** Shock-absorbing lanyards should be examined as a web lanyard. However, also look for signs of deployment. If the lanyard shows signs of having been put under load (e.g. torn out stitching), remove it from service.

## PERSONAL FALL ARREST SYSTEM

These consist of an anchorage, connectors, and a body belt or body harness and may include a deceleration device, lifeline, or suitable combinations. If a personal fall arrest system is used for fall protection, it must do the following:

- Limit maximum arresting force on an employee to 900 pounds when used with a body belt;
- Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness;
- Be rigged so that an employee can neither free fall more than 6 feet (1.8 meters) nor contact any lower level;
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 meters); and
- Have sufficient strength to withstand twice the potential impact energy of an employee free-falling a distance of 6 feet (1.8 meters) or the free fall distance permitted by the system, whichever is less.

Personal fall arrest systems must be inspected prior to each use for wear damage, and other deterioration. Defective components must be removed from service. D-rings and snap-hooks must have a minimum tensile strength of 5,000 pounds. D-rings and snap-hooks shall be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or suffering permanent deformation.

Snap-hooks shall be sized to be compatible with the member to which they will be connected, or shall be of a locking configuration.

Unless the snap-hook is a locking type and designed for the following connections, they shall not be engaged:

- a) directly to webbing, rope or wire rope;



- b) to each other;
- c) to a dee-ring to which another snap-hook or other connector is attached;
- d) to a horizontal lifeline; or
- e) to any object incompatible in shape or dimension relative to the snap-hook, thereby causing the connected object to depress the snap-hook keeper and release unintentionally.

A hook will be compatible when the diameter of the d-ring to which the snap-hook is attached is greater than the inside length of the snap-hook when measured from the bottom (hinged end) of the snap-hook keeper to the inside curve of the top of the snap-hook. Thus, no matter how the dee-ring is positioned or moved (rolls) with the snap-hook attached, the d-ring cannot touch the outside of the keeper, thus depressing it open. The use of non-locking snap-hooks is prohibited.

On suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline. Horizontal lifelines shall be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two. Lifelines shall be protected against being cut or abraded.

Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet (0.61 meters) or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

Self-retracting lifelines and lanyards that do not limit free fall distance to 2 feet (0.61 meters) or less, rip-stitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made of synthetic fibers.

Anchorage shall be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two, i.e., capable of supporting at least twice the weight expected to be imposed upon it. Anchorages used to attach personal fall arrest systems shall be independent of any anchorage being used to support or suspend platforms and must be capable of supporting at least 5,000 pounds per person attached.

Lanyards and vertical lifelines must have a minimum breaking strength of 5,000 pounds.

## **FULL BODY HARNESS**

Employees working at heights must use a CSA approved, Full Body Harness.

Pre-Use Inspection - Don't assume that your harness is in good working condition. You can never be sure what has happened to your equipment since the last time you used it. A pre-use inspection must be completed before each usage and documented in the equipment log book. Follow these inspection guidelines:

1. Inspections are done with the hands as well as the eyes.
2. Look and feel for damage over the full length of the webbing by bending 6 inch sections into a "U" shape between the hands. This will reveal worn, cut, frayed, burnt, or damaged fibers.
3. Check both sides and along the edges of all the webbing.
4. Inspect both sides of the plastic keepers and D-ring plates.
5. Check webbing very closely around any and all buckles, grommets, adjustment buckles, and tongues.

Devices should be removed from service if:

- Harness was subjected to the force of a fall



- Labels are absent
- There are sufficient indications of defects to deem the harness UNSAFE

## HOW TO DON A FULL BODY HARNESS

**NOTE:** For a harness to work correctly and safely it should be adjusted to fit the contours of your own body. When positioning the chest straps, the maximum distance from the top of the shoulder to the top of the chest strap must not exceed 6 inches.

### STEP ONE:

- Spread the harness out on a flat surface with the Dorsal D-ring down.
- Undo and lay the chest strap and leg loops flat.
- The straps located at the Dorsal D-rings will be visually marked for the shoulder and upper straps.

### STEP TWO:

- Put the harness on with the upper straps over the shoulder.
- Locate the sub pelvic strap.
- The rear Dorsal D-ring should be located between the shoulder blades.

### STEP THREE:

Adjust the pelvic strap to fit snugly below the buttocks by adjusting the front adjuster buckles. The easiest way to do this is by sliding the strap keepers back from the buckles.

## CONNECTING DEVICES

This device can be a rope or web lanyard, rope grab or retractable lifeline. Only locking snap-hooks may be used. Horizontal lifelines will be designed by a qualified person and installed in accordance with the design requirements.

Lanyards and vertical lifelines need a minimum breaking strength of 5,000 pounds.

Lanyards may not be clipped back to itself (e.g. around an anchor point) unless specifically designed to do so.

If vertical lifelines are used, each employee will be attached to a separate lifeline.

Lifelines need to be protected against being cut or abraded

## ANCHORAGE

Secure anchor points are the most critical component when employees must use fall arrest equipment.

Buildings may have existing structures (e.g., steel beams that may meet the criteria for a secure anchor point).

Other work locations and assignments may require the installation of a temporary or permanent anchor. As a minimum, the following criteria must be considered for each type of anchor point:

Structure must be sound and capable of withstanding a 5000 lb. static load/person attached.

Structure/anchor must be easily accessible to avoid fall hazards during hook up.

Direct tying off around sharp edged structures can reduce breaking strength by 70% therefore; chafing pads or abrasion resistant straps must be used around sharp edged structures to prevent cutting action against safety lanyards or lifelines.

Structures used as anchor points must be at the worker's shoulder level or higher to limit free fall to 6 feet or less and prevent contact with any lower level (exception – when self-retracting lifelines and or 3 foot lanyards are used)

Choose structures for anchor points that will prevent swing fall hazards. Potentially dangerous "pendulum" like swing falls can result when a worker moves horizontally away from a fixed anchor point and falls. The arc of the swing produces as much energy as a vertical free fall and the hazard of swinging into an obstruction becomes a major factor. Raising the height of the anchor point can reduce the angle of the arc and the force of the swing. Horizontal lifelines can help maintain the attachment point overhead and limit the fall vertically. A qualified person must design a horizontal lifeline

## TRAINING

Employees shall be trained in fall protection, fall protection equipment, and these procedures. All employees who are required to use a fall protection system must be trained by a certified trainer.

Employees shall be retrained when the training program has been changed, fall protection equipment has changed, or the employee exhibits inadequacies in knowledge of fall protection, or the employee exhibits inadequacies in equipment use.

In the event of a fall arrest incident, or a situation that causes obvious damage, remove the device from service immediately. Tag the harness “Danger — Do Not Operate” and return to the shop or office ASAP, with an Opportunity Report filled out

## **PERMANENT STRUCTURES/STAIRS/CAGED LADDERS**

Personnel working on permanent decks, floors, and walkways that are free of fall exposures are not required to wear safety harnesses and lanyards provided they access the elevations by completed permanent stairs or fully enclosed personnel hoists (elevators).

Safety lanyards and other fall protection are not required on stairs as the handrails are to be used for this purpose. Personnel climbing or descending stairs shall always have one hand on the handrail.

Caged ladders do not require secondary fall protection. Personnel climbing ladders must keep both hands free for climbing at all times. Carrying items in the hands is prohibited.

## **SCAFFOLDING**

If a worker must lean over or reach over the railings or between the mid and top rail, fall protection must be used.

If a guardrail and/or partial platform is to be removed to accommodate work only that portion of the guardrail necessary to allow the work to be done may be removed. Workers exposed to a fall hazard must be protected by another fall protection system when the guardrail is absent.

Never tie off to the scaffolding.

For working at heights above 6.5 meters a ladder cannot be used and scaffolding must be in place. (BETWEEN 3.0 AND 6.5 METERS SCAFFOLDING IS THE RECOMMENDED ALTERNATIVE TO LADDERS).

All scaffolding must be erected and anchored in such a way as to prevent accidental movement, and must be equipped with guard rails and toe boards if the scaffolding is erected over an area where other will be working or passing by.

## **LADDERS**

Workers should not use a ladder to enter or leave an elevated or sub-level work area if the area has another safe and recognizable way to enter or leave it.

If a worker is working from a portable ladder, a fall arrest system may be necessary if working over 3 meters. There is online training available for the mobile ladder used in the shop.

## **PORTABLE & FIXED LADDERS, STAIRS, PLATFORMS & SCAFFOLDING**

- Only C.S.A. approved ladders are acceptable for the use at Swab Master Ltd. All ladders must be equipped with non-slip feet. All extension ladders must have suitable extension locks.
- Prohibition on painting - Subject to subsection (2), a person must not paint a wooden ladder. A wooden ladder may be preserved with a transparent protective coating.
- Only wooden or fiber glass ladders may be used when working with electrical equipment. Under no circumstances may metal ladders be used in this service.
- When in use, the ladder must extend a minimum of one meter above the working platform or landing and must always be securely attached to prevent any movement. It must be positioned in such a way that it is at least one quarter its height from the base of the structure against which it rests. A worker must not perform work from either of the top 2 rungs, steps or cleats of a portable ladder unless the manufacturer's specifications allow the worker to do so.

- Ladders, stairs or platforms shall be provided where required to ensure safe operation, maintenance and inspection. Access to the platform shall be by ladders completed with cages.
- All ladders serving platforms where the center of the ladder is 30" or less from the handrail, those longitudinal cage bars in proximity to the handrail that do not interfere with the ladder access shall be extended to the handrail.

Stairways shall have a minimum width of 2' 6", a minimum tread of 9.5" and a maximum riser of 8". The maximum vertical distance between landings will be 19". All stairway runs on the same structure shall have the same slope, preferable 9 vertical to 12 horizontal. Treads shall be non-slid grating type and handrails shall be continuous.

## HEARING PROTECTION POLICY

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In compliance with Part 16 of the Occupational Health and Safety Code, Swab Master Ltd. will provide hearing protection to its employee(s) as well as assess noise hazards, train the employees in hearing conservation, and reduce or eliminate as much noise as possible.

Hearing protection will be made available to all workers exposed at or above the action level. The use of hearing protection is mandatory for those exposed at or above the Permissible Exposure Limit (PEL), and for those exposed at or above the action level. Hearing protection is designed to reduce the level of sound energy reaching the inner ear.

## HEARING CONSERVATION PROGRAM

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### What is noise?

We live in a world filled with sounds, from music playing, to a child's laughter, sounds enrich our lives. We classify sound as "noise" when it is a sound we really don't want to hear. "Noise" is unwanted sound(s). Noise exposure is the main cause of early hearing loss.

Some noise sources are fixed and predicable, like a compressor or generator. Other noise sources may move into your work area, like a vac truck pumping. All noise sources contribute to your overall noise exposure. Even those you may come into contact with away from work, such as a rock concert or while hunting. Be aware of the noise around you!

To protect ourselves from overexposure to noise, it helps to know more about sound.

**Sound:** is a form of energy that travels through air and other materials by causing particles to vibrate, creating waves of pressure. These waves come from a noise source.

Characteristics of sound waves are:

- Loudness – usually measured in decibels (dBA). The threshold of audibility (sounds the normal ear can hear) is 20 dBA. A normal quiet office would register at 40 dBA, while an explosive blast would register at 140 dBA. A telephone ringing registers at 80 dBA & hearing protection should be worn at 85 dBA.
- Tone – usually measured in cycles per second or Hertz (Hz). Higher tones, like the soprano part of a song, are made when sound pressure variations change rapidly. Lower tones, like the bass in music, are created with slower pressure changes. Most noise consists of many different frequencies.

The overall loudness of a sound is calculated by considering the loudness of all the frequencies that make up the sound. Our ears are more sensitive to middle frequencies (around 1000 - 4000 Hz) than high or low frequencies. To assess the potential hazard of a noise, we must consider how sensitive the ear is to each frequency. When noise is measured, an 'A-Weighting' is used so that the frequencies we are most sensitive to are considered more important and weighted more heavily in the calculation. The units for these weighted measurements are A-Weighted decibels (dBA).

ACCUTE HEALTH EFFECTS		CHRONIC HEALTH EFFECTS	
Effect	Description	Effect	Description
Tinnitus	A ringing or other noise you may hear even when it is quiet	Noise-Induced Hearing Loss (NIHL)	Gradually losing the ability to hear parts of conversations or treble lines in music for example
Temporary Threshold Shift	The feeling that everything is muffled or that you have water in your ears	Persistent Tinnitus	Ringing or buzzing that does not go away
Anxiety / Irritability	Noise increases stress levels	Other	Increased blood pressure, stomach disorders, mood effects, muscle tension

Sound waves can interact with walls and materials in different ways. They can be:

- Reflected, causing echoes and reverberation
- Absorbed, reducing the energy
- Transmitted, passing through the material, or
- Any combination of these

Sound decreases as the distance from the source is increased. (When you double your distance from a noise source, the sound decreases by about 6 dBA)

#### Health effects of noise exposure

Health effects of noise may vary, depending on individual sensitivities to noise exposure. Acute effects happen immediately after exposure to noise while chronic effects occur over time, after exposure to noise. Often these effects are not noticed until they are pronounced. The table below describes some acute and chronic health effects and their descriptions.

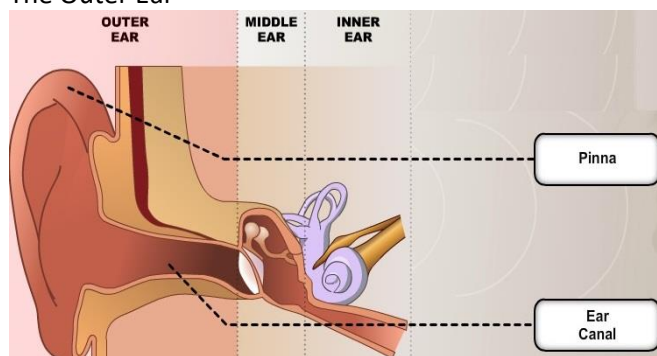
#### Noise-Induced Hearing Loss (NIHL)

After just one year in a noisy job, the risk of hearing difficulties and tinnitus increases for employees. After 5 years, the risk of severe hearing loss is up to three times higher for workers in noisy workplaces than for people in jobs with little noise. Chemicals such as carbon monoxide and toluene can also damage your hearing. Your risk of hearing loss is greater if you are exposed to these chemicals and noise.

## HOW WE HEAR

The ear is made up of three parts: the outer, middle, and inner ear. All three parts of the ear are important for detecting sound by working together to move sound from the outer part through the middle and into the inner part of the ear. Ears also help to maintain balance.

#### The Outer Ear

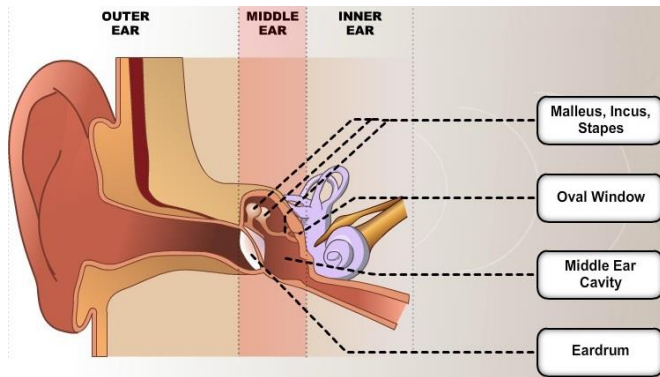


The outer ear includes:

- auricle (cartilage covered by skin placed on opposite sides of the head)
- auditory canal (also called the ear canal)
- eardrum outer layer (also called the tympanic membrane)

The outer part of the ear collects sound. Sound travels through the auricle and the auditory canal, a short tube that ends at the eardrum.

### The Middle Ear

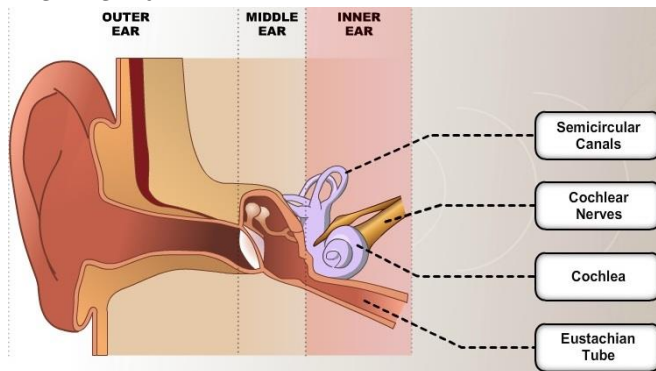


The middle ear includes:

- Eardrum
- Cavity (also called the tympanic cavity)
- ossicles (3 tiny bones that are attached).  
Malleus (or hammer) – long handle attached to the eardrum. Incus (or anvil) – the bridge bone between the malleus and the stapes. Stapes (or stirrup) – the footplate; the smallest bone in the body
- oval window – connects the middle ear with the inner ear

Sound entering the outer ear travels through the middle ear and causes the eardrum and ossicles in the middle ear to vibrate. As it travels, it amplifies (becomes louder) and changes from air to liquid

### The Inner Ear



The inner ear includes:

- semicircular canals – filled with fluid; attached to cochlea and nerves; send information on balance and head position to the brain
- cochlea – spiral-shaped organ of hearing; transforms sound into signals that get sent to the brain
- auditory tube – drains fluid from the middle ear into the throat behind the nose

When the stapes moves, it pushes the oval window, which then moves the cochlea. The cochlea takes the fluid vibration of sounds from the surrounding semicircular ducts and translates them into signals that are sent to the brain by nerves like the vestibular nerve and cochlear nerve.

## ***Hearing loss is a PERMANENT DISABILITY!***

If you work in a noisy environment, following a hearing conservation program is the only solution.

### Occupational Exposure Limits

The health effects of noise are related to the overall sound energy at the ear. Energy and health effects increase with the loudness of a sound and how long you are exposed to it. Legislated noise exposure limits specify the maximum average sound level or loudness over 8 hours (a normal shift length). For longer shifts the allowable maximum average loudness is reduced.

Table 1 of Schedule 3  
Occupational exposure limits for noise

Exposure Level (dBA)	Duration
82	16 hours
83	12 hours and 41 minutes
84	10 hours and 41 minutes
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	8 minutes
106	4 minutes
109	2 minutes
112	56 seconds
115 and greater	0

NOISE LEVEL	PROTECTION REQUIRED
<85 dBA	No protection required for 8 hour exposure, however, protect for intermittent or impact noise
85 – 105 dBA	Hearing protection required. Reduce noise at the ear to <85 dBA over 8 hours
>105 dBA	Double hearing protection required (Muffs & Plugs)
>115 dBA	NO unprotected exposure permitted

### Audiometric Testing

If you work in a noisy area, you will be asked to participate in hearing testing. There are three types of tests:

1. Baseline Test – Should be completed within the first six months of employment, or if you are moved to a position that has higher risk of noise exposure
2. Baseline Follow-Up - conducted approximately 12 months after your initial baseline test
3. Periodic Testing – Conducted every 2 – 3 years based on requirement.

During a hearing test, you will be asked to identify when you can hear sounds at different frequencies. The results will indicate your threshold of hearing. For best results, try not to be exposed to loud noises before your test.

Since hearing loss is usually gradual, audiometric tests can give you early warning, so that you can act to better protect your hearing – but only if you understand the results.

- Normal Hearing – can detect sounds of less than 25 dBA at all frequencies.
- Early Warning – Noise-induced hearing loss usually starts as an increase in hearing threshold between 3000-6000 Hz.
- Abnormal Hearing – can result from early warning hearing loss progressing.

If you have hearing loss or early warning signs of hearing loss, take action to protect your hearing – at work and at home. If it is not reasonably practicable for an employee to do audiometric testing during the worker's normal working hours, Swab Master Ltd. will give a credit for the time the worker spends to get the test as time at work, and ensure that the worker does not lose any pay or other benefits because the worker was tested.

### Noise Hazards

The most effective, but usually most difficult, solution to reducing noise exposure is to eliminate the source of the noise. You can eliminate or reduce noise at the source by:



- Using equipment with lower drive force, velocity or additional mufflers
- Using quieter equipment
- Moving equipment to prevent increase in levels due to reverberation

***If elimination isn't practicable, you need to control the hazard.***

Noise can be controlled in three ways:

1. Engineering controls – such as blocking the sound transmission path by enclosing the source or operator, mounting equipment on vibration isolators, or coating walls, ceilings or floors with sound absorbing materials.
2. Administrative Controls – such as limiting the length of exposure. This may be done by reducing hours of operation, scheduling operation of equipment when personnel are not present, rotating personnel to reduce the number of individual exposure.
3. Personal Protective Equipment – should be used if the hazard cannot be eliminated or controlled.

#### Personal Protective Equipment (PPE)

Choices: ear muffs and/or earplugs

\*Only use hearing protection approved and classified or graded by the Canadian Standards Association (CSA). This will be marked on the outside of the package.

#### Care and Cleaning:

- Disposable hearing protection should be discarded after a single use.
- Re-usable hearing protection must be cleaned and maintained properly
- Re-usable ear plugs should be washed in mild soap (like dishwashing liquid), rinsed and dried thoroughly after each use.
- Ear muffs can be wiped with mild soap, but care should be taken to keep the foam insulation as dry as possible
- Do not stretch the bands connecting earmuffs. A good seal between the head and the earmuff is required for maximum hearing protection

#### A GENERAL RULE:

If you have to shout to be heard by a person within arm's length, you should be wearing hearing protection.



Hearing protection must be worn correctly and consistently in order to be effective.

**RIGHT  
REFUSE, KNOW AND PARTICIPATE POLICY**

**TO**



It is clearly in Swab Master Ltd.'s and our workers' best interests to provide safe work sites and proper training and to make sure that our workers follow safe practices.

### RIGHT TO KNOW

All Swab Master Ltd. Employees have the right to know of any workplace hazards or health and safety concerns that may affect them in their day-to-day work activities.

### RIGHT TO PARTICIPATE

All Swab Master Ltd. employees have the right, and are encouraged to participate in the health and safety program.

### RIGHT & RESPONSIBILITY TO REFUSE UNSAFE WORK

All employees will be trained during general orientation and offered re-training every 5 years. The right to refuse will be reviewed at the annual spring break up meeting alongside the Occupational Health & Safety Policy.

If any employee is of the opinion that performing a job will endanger persons on the work site that employee shall:

- (1) Shut down operations and notify your direct Supervisor and then a Manager.
- (2) Notify the customer site representative to resolve the problem.
- (3) Notify a Manager of Swab Master Ltd. if the problem is not dealt with in an effective manner.
- (4) Work will not resume until all parties involved are satisfied the hazard has been eliminated or controlled.

**Imminent danger:** "Imminent danger" refers to any danger that is not normally present in a job, or to any dangerous conditions that a worker would not normally perform his or her work in. Workers **must** refuse to perform any job they believe would put them or their fellow workers in imminent danger.

### RESOLVING THE PROBLEM REPORTED

When a worker refuses to do a job, Swab Master Ltd. will take immediate action and get rid of the danger. We may temporarily send the worker to another job, but at no loss of pay. We will not discipline workers for refusing to do unsafe work, and there will be no admonishing of any employee refusing to perform unsafe work. Asking a worker to work in a situation of imminent danger is against the law.

If the job is dangerous only because the worker is not qualified to perform it, Swab Master Ltd. may get the job done by finding a qualified worker to do the work. The new worker should be told that another worker has exercised their right to refuse. The new worker also has a right to refuse to do the work if it is unsafe.

### DOCUMENTATION

The person who carried out the right to refuse is required to fill out the appropriate documentation regarding what the perceived hazard was and why they felt they would not be safe completing the task.

The event should be recorded on an Opportunity Report to ensure proper tracking and follow up is applied and finalized, and will be anonymously reported to all staff members during the next monthly safety meeting. (Or immediately via e-mail bulletin, if deemed necessary)

**\*\*\*Workers have the right to still refuse to work if they do not feel the actions taken to resolve the dangerous work have been sufficient to resolve the danger at hand\*\*\***

# SUBSTANCE ABUSE PREVENTION POLICY

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## 1.0 – Introduction

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As a responsible employer, Swab Master Ltd. has a compelling interest in establishing programs to promote and enhance health and safety in the workplace. Swab Master Ltd. Substance Abuse Prevention Policy is directed at protecting the health and safety of employees, co-workers, contractors, general public and environment. The Substance Abuse Prevention Policy combines drug and alcohol testing with education, training and access to assistance.

## 2.0 – Scope

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This policy applies to all employees and management of Swab Master Ltd. Testing provisions of this policy only apply to individuals in identified safety sensitive positions. While this policy refers specifically to alcohol and drugs, it is intended to apply to all other forms of substance abuse.

The guiding principles of the Canadian Model for Providing a Safe Workplace, a best practice guide from the Construction Owners Association of Alberta (COAA) and the Energy Safety Canada are incorporated into this policy.

Swab Master Ltd. shall comply with all applicable Federal and Provincial related drug and alcohol laws and or regulations.

## 3.0 – Roles and Responsibilities

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Employees are expected to:

- Arrive fit for work and remain fit for work during their period of duty
- Consult with their doctor or pharmacist regarding the proper use of medication they are using to determine if the medication may have a negative effect on their performance
- Must disclose & seek advice on appropriate counseling or treatment if they suspect they have a dependency or an emerging substance abuse issue
- Advise Management if they are using medical cannabis

- Take appropriate actions to ensure a co-worker does not remain in an unfit condition at work that may endanger the employee, co-workers or others. This may include contacting your Manager, Supervisor, HS Representative or Office Manager for confidential advice on what action to take

Managers and Supervisors are expected to:

- Monitor and evaluate work performance with an objective of early identification and handling of all performance issues
- Ensure that investigations of work related accidents are carried out in accordance with the company accident investigation procedures
- Refer an employee for a drug and or alcohol test when required to do so under this policy
- Monitor policy compliance and take appropriate action as required under this policy
- Confer with the HS Representative and Office Manager on substance abuse issues as appropriate
- Arrange for safe transportation of an employee to their residence or nearest public transportation when appropriate under this policy

Office Manager will:

- Act as a confidential and objective resource within the company on matters related to the Substance Abuse Prevention Policy
- Communicate with the Medical Review Officer and Substance Abuse Professionals as required
- Advise the employee's supervisor, where appropriate of work limitations, suspension or termination considerations
- Provide confidential service to all employees regarding drug and alcohol information, referral to a Substance Abuse Professional but not to provide any counseling
- Maintain confidential records of all test results, including refusals to test, correspondence from the Medical Review Officer and or Substance Abuse Professional

HS Representative will:

- Act as a confidential and objective resource within the company on matters related to the Substance Abuse Prevention Policy
- Undertake periodic reviews and revisions of the Substance Abuse Prevention Policy
- Maintain records of all training / education of managers, supervisors and employees
- Ensure that investigations of work related accidents are carried out in accordance with the company accident investigation procedures

## 4.0 – Training

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Swab Master Ltd. recognizes that employee education on substance abuse and on our Substance Abuse Prevention Policy is a critical step in achieving the objectives of the program.

### **Employee training**

- Employees will receive awareness education in regards to how this policy applies to everyone including: the risks of drug and alcohol use and their potential impact on safety in the workplace, consequences for policy violation, available resources for employee assistance services, explanation of the testing procedures and situations when testing will occur

### **Supervisor/Manager Training**

- Supervisors/Managers will be given the above training as well as more specific training on how to recognize signs and symptoms of drug and alcohol use in the workplace and appropriate responses

## 5.0 – Testing Options

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### **Pre-employment**

- Successful applicants of safety sensitive positions will be drug tested after a conditional offer of employment. Employment is conditional to the successful completion of the pre-employment drug test

#### **Post-Accident**

- An employee will be drug and alcohol tested after an accident that involves a fatality, disabling injury, significant incident or near miss that could have had potential serious consequences
- Supervisor is required to conduct immediate preliminary investigation
- Testing will never delay necessary medical attention for injured worker following an accident
- Testing is not required when the act or omission of the employee was not a contributing factor (e.g. structural, mechanical failure or act of God)
- Testing is required when the actions of a worker, human error, were the contributing factors leading to the accident and it is not frivolous
- Drug testing should occur within 2 hours of accident with attempts to test for up to 32 hours of accident. Alcohol testing should occur within 2 hours of accident with attempts to test for up to 8 hours of accident
- Reasons are documented if testing is required, not required or unable to conduct required tests

#### **Reasonable Cause Testing**

- An employee will be tested for alcohol and or drug use where a company supervisor or other official, who is trained to identify drug and alcohol use by an employee, makes observations which form a reasonable basis for suspecting that the employee is in breach of this policy. Such observations must be documented, specific, clearly stated observations concerning the appearance, speech or body odors of the employee. The observations may include indications of the chronic and withdrawal effects of drug and alcohol use
- Observations which may lead to reasonable cause testing are not limited to, but include: odor of alcoholic beverage or marijuana on breath, slurred speech, glassy eyes, unsteadiness in walking, standing, flushed face, disoriented and or drowsy, accidents or injuries, repeated errors in job performance, excessive absenteeism or lateness, credible complaints of drug and or alcohol use at work

#### **Pre-Access**

- Drug and alcohol testing of employees to gain and or maintain access to company or client worksites

#### **Return to duty**

- Drug and or alcohol testing of an employee who has engaged in prohibited conduct and is returning to work after an assessment by a Substance Abuse Professional and compliance with recommendations

#### **Follow-up**

- Drug and or alcohol testing on an unannounced basis for at least one year on return to duty. Frequency and duration of testing is determined by the Substance Abuse Professional in consultation with the Office Manager

## **6.0 – Prohibitions**

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#### **Alcohol Use**

- Alcohol concentration: No employee shall report for duty or remain on duty while having a confirmed alcohol concentration of 0.02 or greater
- On duty use: No employee shall use alcohol while on duty
- Pre duty use: No employee shall perform safety sensitive functions within four hours after using alcohol
- Use following an accident: No employee required to take a post-accident alcohol test shall use alcohol for eight hours following the accident, or until he/she undergoes a post-accident alcohol test, whichever occurs first

#### **Drug Use**

- No employee shall report for duty or remain on duty when the employee uses any drug, except when the use is pursuant to the instructions of a licensed medical practitioner who has advised the employee that the substance will not adversely affect the employee's ability to work safely at the job site. If a licensed medical practitioner advises the employee that the substance will affect the employee's ability to work safely, the employee will notify his/her immediate supervisor. The supervisor will advise senior management of the circumstances
- Senior management shall ensure that the employee is removed from duty and accommodated to meet safety concerns. Accommodation may include work restrictions, modified duties, sick or disability leave
- No employee will intentionally misuse prescription or over the counter medications in such a manner as to render themselves unfit to safely perform their duties
- Employees must notify their direct supervisor if they are taking any prescription, substance or over the counter medication that may impair their ability to work safely

#### **Possession**

- Possession, use or offering for sale of alcohol, drugs or drug paraphernalia on company or client sites or company vehicles is prohibited
- Possession of devices or products designed to compromise drug and or alcohol testing are prohibited
- Employees who violate this provision may be subject to immediate termination and referral to law enforcement agencies when applicable
- Use of alcohol for social functions or when it relates to company business is permitted when approved by senior management who will ensure that the use does not contravene the intent of our policy and any applicable laws or regulations

### **7.0 – Maintaining a Valid Operator's License**

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All individuals that operate a motor vehicle on behalf of Swab Master Ltd. are required to maintain a valid operator's license. Any loss of driving privileges (licence) must be reported to your supervisor and the individual will no longer be allowed to drive on behalf of the company. The individual will be accommodated where it is feasible to do so. Loss of driving privileges includes temporary suspensions, etc.

### **8.0 – Collection of Specimens and Analysis**

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A designated drug testing company will collect and process urine specimens for drug testing as required. Drug testing will be conducted according to US Dept. of Health & Human Services (HHS) standards in laboratories accredited by the Substance Abuse and Mental Health Services Administration (SAMHSA). The accredited laboratory will perform required testing with test results forwarded to a Medical Review Officer. Drug testing refers to marijuana, cocaine, amphetamines, opiates and phencyclidine. Oral fluid testing will follow the recommended standards of the Substance Abuse and Mental Health Services Administration (SAMHSA). Point of Collection Testing (POCT) drug screening may be conducted in conjunction with laboratory based testing or as a standalone drug test including laboratory confirmation and review by an MRO.

Alcohol screen testing will be with an approved saliva tester or breath test. All alcohol screening tests at .020 or higher will be confirmed with an approved Evidential Breath Alcohol Testing Device that is listed on the U.S. DOT Conforming Products List (CPL).

### **9.0 – Positive Test Procedures**

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#### **Positive Pre Employment Test**

- Potential employees who are positive on pre-employment drug tests will have their offer of employment rescinded
- Potential employees who are positive on the pre-employment drug test will be encouraged to seek assistance from a Substance Abuse Professional and to reapply for available positions when they can meet the company standards

- Potential employees whose drug test results in a MRO issued Safety Letter will have their offer of employment rescinded. The potential employee will be encouraged to reapply for available positions when the prescribed medication and or substance are no longer required

#### **Positive alcohol test procedures**

- Employees with a confirmed alcohol concentration of .020 to .039 will be removed from duty immediately and will not be allowed to return to work until the following shift. The employee may be subject to corrective disciplinary action
- Employees having a confirmed alcohol concentration of .040 or greater will be removed from duty/suspended

#### **Positive drug test procedures**

- Employees who are positive on drug tests as verified by the Medical Review Officer will be removed from duty/suspended

#### **Refusal to test**

- No employee shall refuse to submit to a drug and or alcohol test required under this policy
- No supervisor shall permit an employee who refuses to submit for required testing to remain on duty
- An employee who refuses to submit to a required test, tampers or attempts to tamper with a test sample or obstructs the testing process will be considered to have violated this policy. Positive test procedures will apply

#### **Removal from duty**

- Employees removed from duty/suspended having a positive drug test verified by an Medical Review Officer and or a confirmed alcohol concentration of .040 or greater will be required to attend a meeting with Senior management who will review each case and provide written correspondence of the resources available in evaluating and resolving problems associated with the misuse of alcohol and or drugs, including the names, addresses and telephone numbers of Substance Abuse Professionals. Where practical management will endeavor to meet or contact the employee the next working day and direction will be provided regarding the suspension and return to work choices
- Any employee who was removed / suspended from duty having a positive drug test result verified by a Medical Review Officer and or a confirmed alcohol concentration of .040 or greater shall be evaluated by a Substance Abuse Professional who shall determine what assistance, if any, the employee needs in resolving substance abuse issues
- In order for this policy to be effective in ensuring that company employees will perform their duties unimpaired by alcohol or drugs, the provisions of this policy must be enforced. Accordingly, where an employee violates any provision(s) of this policy, the employee may be subject to corrective disciplinary action, as appropriate, up to and including discharge

#### **Self-Disclosure**

- The company understands that an alcohol or drug dependency is a preventable and treatable condition and recognizes that an individual may want assistance. Employees are required to come forward or seek assistance on their own, without fear of reprisal. The company will do its utmost to assist the employee. An employee who comes forward seeking assistance will be treated as if they had a positive drug and or alcohol test. Once an assessment has been completed a return to work plan can be formulated

#### **Medical Review Officer Issued Safety Letter**

- In the event of a reported positive drug test the MRO may determine that the donor has a legitimate drug prescription; the positive result may be changed to a negative. If the MRO determines that the use of that particular prescription may compromise safety in the performance of a safety sensitive function the MRO will issue a "Safety Letter" to the DER (employer)

- The employee will be removed from safety sensitive duties pending the receipt of a clearance letter from the employee's prescribing physician. The employee will be provided instructions for his/her physician along with a physical demands analysis and or job description of their safety sensitive position
- When a Safety Letter is issued for prescribed medical cannabis, the employee will not be allowed to work in a safety sensitive position until the prescribed substance is no longer required for treatment

## 10.0 – Return to work after a positive test

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An employee cannot be returned to duties until he/she has been evaluated by a Substance Abuse Professional, complied with recommendations, and has a negative result on a return to duty test and or a breath alcohol concentration less than .020. The employee must provide a written report from the Substance Abuse Professional verifying the evaluation and any required treatment or provide a release document for the required information. The Substance Abuse Professional will only release relevant information which will assist in returning the worker to their duties.

Follow up testing will be conducted to monitor the returning employee for no less than one year. The frequency of testing will be determined by the Substance Abuse Professional in consultation with the Office Manager and will be designed to assist the employee in remaining alcohol and or drug free at the work place.

## 11.0 – Confidentiality and Record Keeping

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All drug test results are confidential and are released by the Medical Review Officer or designate to the Designated Employer Representative or alternate. Alcohol test results are confidential and released by the testing company to the Designated Employer Representative or alternate. The Designated Employer Representative or alternate may release relevant information to company decision makers as required. Confidential information from a Substance Abuse Professional will be handled in a similar manner.

All records will be maintained in a locked and secure manner. Records will be kept separate from personnel files. Negative test results will be maintained for no less than one year with positive test results and Substance Abuse Professional assessments maintained for a five year period. A third party administrator can maintain records on behalf of the company.

## 12.0 – Definitions

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**Accredited Laboratory** – Meets guidelines and standards of the Substance Abuse and Mental Health Services Administration which is the certifying agency for forensic urine drug testing laboratories in Canada and the United States. Collection and testing processes follow the U.S. Department of Health and Human Services guidelines

**Alcohol** – The intoxicating agent in beverage alcohol, ethyl alcohol or other low molecular weight alcohols including methyl or isopropyl alcohol

**Alcohol Concentration** – The alcohol in a volume of breath expressed in terms of grams of alcohol per 210 litres of breath

**Breath Alcohol Technician** – An individual trained and certified to conduct breath alcohol testing utilizing an Evidential Breath Tester

**Chain of Custody** – The process of documenting the handling of a specimen from the time a donor gives the specimen to the collector, during the testing at the laboratory, and until the results are reported by the laboratory

**Collector** – Non medical and medical personnel contracted by an agency who have received training in collecting urine samples in accordance with guidelines that would be acceptable to the regulatory agencies



**Drug** – Any substance other than food which is taken to change the way the body or mind functions. Drug testing refers to marihuana, cocaine, opiates, phencyclidine and amphetamines with cut-off levels as per the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services which is the certifying agency for forensic urine drug testing laboratories in Canada and the United States

**Evidential Breath Testing Device** – Capable of measuring the alcohol content of deep lung breath samples with sufficient accuracy for evidential purposes. The Evidential Breath Tester must be on the conforming products list as per the U.S. National Highway Traffic Safety Administration

**Fit For Duty** – Being capable of performing work related duties in a safe, efficient, productive manner with no drugs and or alcohol present in the body at or above established standards

**Medical Review Officer (MRO)** – The MRO is a licensed physician (Medical Doctor or Doctor of Osteopathy) responsible for receiving laboratory results generated by an employer's drug testing program who has knowledge of substance abuse disorders and has appropriate medical training to interpret and evaluate an individual's confirmed positive test result together with his or her medical history and any other relevant bio medical information

**Safety Sensitive Position/Function** – A position or function where an individual has a key and direct role in an operation where safety is a bona fide occupational requirement at the job, in that safety is necessary to assure the efficient and economical performance at the job without endangering the employee, their fellow employees, general public or the environment. Includes employees where there is no direct or limited supervision available to provide frequent operational checks. An employee in a safety sensitive position cannot have drugs and or alcohol in the body after the above established standards.

**Significant Incident** – Incidents involving a fatality, disabling injury, significant property damage, spill or abnormal discharge that may cause long term health effects to employees and or the public, public evacuation or serious environmental damage or an event or near miss that could have had potential serious consequences

**Substance Abuse Professional (SAP)** – A licensed Physician (Medical Doctor or Doctor of Osteopathy), or a licensed or certified psychologist, social worker, employee assistance professional or an addictions counselor. All must have knowledge of and clinical experience in the diagnosis and treatment of alcohol, drugs and related disorders

**Supervisor Training** – Shall include the physical, behavioral, speech and performance indicators of probable alcohol or drug misuse and appropriate intervention strategies

## 13.0 – Standards

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### Designated Drug Testing Company

ECS Safety Services Ltd.  
P.O. Box 2109, 350 Aquaduct Drive  
Brooks, Alberta T1R 1C8  
Toll Free 1-877-784-3784      Fax 403-793-8171

### Testing Standards

- All drug tests are DOT panel for Marihuana, Cocaine, Opiates, Amphetamines and Phencyclidine. Urine specimens are collected by trained staff using chain of custody procedures. Our collectors are trained in procedures by a Certified Professional Collector Trainer (CPCT) who has been certified by the Drug and Alcohol Testing Industry Association (DATIA). ECS Safety Services Ltd. utilizes a 5 part chain of custody form with a split specimen collection for Non DOT collections and a single specimen for Point of Collection Testing (POCT).
- Alcohol testing procedures will follow the guidelines and standards of the U.S.DOT. ECS Safety Services Ltd. utilizes Evidential Breath Testing instruments when testing for the presence of alcohol. The

instrument(s) are on the US DOT Conforming Products List as an approved testing device. E.C.S follows the Manufacturer Factory Quality Assurance Program and all of our Breath Alcohol Technicians are trained by a certified instructor.

### Laboratory

- ECS Safety Services Ltd. utilizes the services of Gamma Dynacare Medical Laboratories:  
245 Pall Mall Street  
London, ON N6A 1P4  
Toll Free 1-800-265-5946
- Certified by the Substance Abuse and Mental Health Services Administration

### Medical Review Officer

- The role of the MRO requires a physician who is not only knowledgeable about substance abuse problems, but one who also has skills in understanding medico-legal issues, policy development issues, clinical medicine and occupational medicine. They must also possess investigation and problem solving skills and must have the ability to communicate effectively with specimen donors, senior officers in management, community based physicians, unions, government representatives and any other interest groups.
- The MRO's single most important function is the review of laboratory positive test results and the determination of an alternate medical explanation for the positive result. The ECS Safety Services MRO is a licensed physician certified by the American Association of Medical Review Officers or Medical Review Officer Certification Council.

### APPENDIX A – Analyte & Cut-off Levels

Initial test analyte	Initial test cutoff concentration	Confirmatory test analyte	Confirmatory test cutoff concentration
Marijuana metabolites	50 ng/ml	THCA <sup>1</sup>	15ng/ml
Cocaine metabolites	150 ng/ml	Benzoylcegonine	100 ng/ml
Opiate metabolites. Codine/ Morphine <sup>2</sup>	2000 ng/ml	Codeine Morphine	2000 ng/ml 2000 ng/ml
6-Acetylmorphine <sup>3</sup>	10 ng/ml	6-Acetylmorphine	10 ng/ml
Phencyclidine	25 ng/ml	Phencyclidine	25 ng/ml
Amphetamines. AMP/MAMP	500 ng/ml	Amphetamine Methamphetamine <sup>5</sup>	250 ng/ml 250 ng/ml
MDMA <sup>6</sup>	500 ng/ml	MDMA MDA <sup>7</sup> MDEA <sup>8</sup>	250 ng/ml 250 ng/ml 250 ng/ml

- <sup>1</sup> Delta-9-terahydrocannabinol-9-carboxylic acid (THCA)
- <sup>2</sup> Morphine is the target analyte for codeine/morphine testing
- <sup>3</sup> Either a single initial test kit or multiple initial test kits may be used provided the single test kit detects each target analyte independently at the specified cutoff
- <sup>4</sup> Methamphetamine is the target analyte for amphetamine/methamphetamine testing
- <sup>5</sup> To be reported positive for methamphetamine, a specimen must also contain amphetamine at a concentration equal to or greater than 100 ng/ml
- <sup>6</sup> Methylenedioxymethamphetamine (MDMA)
- <sup>7</sup> Methylenedioxyamphetamine (MDA)
- <sup>8</sup> Methylenedioxyethylamphetamine (MDEA)

The laboratory will use the cutoff concentration levels of the above chart for initial and confirmation drug tests. All cutoff concentrations are expressed in nanograms per milliliter (ng/mL)

## **APPENDIX B – Contractual Requirements**

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Swab Master Ltd. may have contractual obligations with our client which will be specific to working on the client's site. Any specific requirements will be identified and relayed to our employees who will be required to access the client work site.

## **APPENDIX C – Search Provisions**

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As a condition of gaining or maintaining entry and or access to company or client work sites, searches may be conducted by Swab Master Ltd., the client or the client on behalf of Swab Master Ltd. including without limitation, searches of any room or vehicle located in the work or camp site. Refusal to submit to such searches will result in the employee / contractor being denied access to the accommodations and or work site.

When reasonable grounds exist to conduct searches of personal property located at a client or company work site, within a company or client accommodation or within a vehicle located on the said site, consent for the search will be obtained from the employee/contractor. If the employee/contractor does not consent to the search, the employee/contractor will be denied access to the work site and or accommodation.

Searches may be conducted with the use of a Drug Recognition Dog.

Revised May 6, 2019  
By E.J. Secondiak, C.D.  
ECS Safety Services Ltd

## TOOLS & EQUIPMENT POLICIES

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**EMPLOYER AND EMPLOYEES NEED TO BE MADE AWARE OF THE FOLLOWING WHEN AROUND OR USING TOOLS AND EQUIPMENT:**

### PERSONAL PROTECTIVE EQUIPMENT

- Wearing coveralls to contain or control clothing
- Wearing clothing that fits close to the body and cannot get caught on moving parts. No hoodies.
- Avoiding loose cuffs, belts, ties or protruding buckles that are easily caught on equipment
- Where long sleeves or pant legs are worn, elasticized, or closely buttoned cuffs, Velcro closures or ties should be used;
- Wearing close fitting leather or insulated work gloves that are less likely to become caught than loose fitting hand wear. In some circumstances it may not be appropriate to wear gloves at all if there is a risk of them getting caught in moving parts
- ensuring boots are laced using all eyelets and tucking in bootlaces
- Making sure long hair is snugly secured to the head, and no facial hair is present for a proper seal with the full face mask of the SCBA.
- not wearing jewelry and accessories such as chains or scarves with loose ends;
- removing a fall protection lanyard rather than wearing it draped over a shoulder
- Rings can increase the damage to a finger or result in amputation when a hand is crushed. Rings should be removed if a hazard is present.

### HAND / POWER TOOLS

- As per the Maintenance Policy (Pg. 26), all hand or power tools will be cleaned and inspected on a regular basis. Maintenance records for all tools are kept to the same standard as vehicle inspections and maintenance. Any defect found must be reported on an Opportunity Report and submitted as soon as possible. The defective tool should be removed from service (Lock out/Tag Out) until the appropriate repairs or replacement can be made.
- All tools of Swab Master Ltd. are to be used only by competently trained personnel. If you are not aware on the proper use, care and maintenance of any tool – you are not deemed competent. Tools may only be used for the purposes in which they were designed or created. Appropriate training will be given to all personnel responsible for the safe operation of any Swab Master Ltd. hand or power tools.
- In the selection of hand or power tools, you must take into consideration any ergonomic concerns there are. If the tool or equipment is able to be adjusted, you must do so before operating commences. If you are unable to adjust the tool or equipment to a suitable working position, you should file an Opportunity Report at once. Swab Master Ltd. is committed to ensuring you work safely and will use any resources available to accommodate the needs of any personnel.

### STARTING MACHINERY – SWAB RIGS & TANK TRUCKS

- The start-up of machinery can cause injury to workers near the machines or equipment if they are not aware that the machine is being started. If a machine operator cannot see the machine or parts of the machine being operated from the control panel or operator's station and moving machine parts may endanger workers, an alarm system must be installed.
- The alarm system must be effective at warning workers that a machine is about to start. It must be loud enough or bright enough to attract workers' attention while allowing them sufficient time to reach a safe location. Time delays should be in place so that the warning provides workers with enough time to move to a safe position.

- The alarm system used may include sirens, buzzers, and horns, flashing lights or a combination of these alarms. A combination of both visual (flashing lights) and audible (siren, buzzer or horn) alarm systems provide the best protection.
- Alarm systems should be automatic. They should be constructed and located so that they provide a recognizable audible or visual signal to workers. Audible devices should have a distinctive sound and be able to be heard above the surrounding noise, including the noise of the machine being operated.

## OPERATOR RESPONSIBILITIES

The machine operator is responsible for checking the machine and the surrounding area to ensure that both the operator and other workers are not at risk of being caught or struck by moving equipment. This may include such things as checking visually and verbally to make sure workers are not in the immediate vicinity of the machinery, and activating warning alarms. Having a second worker check the area may be necessary in some situations. Convex mirrors may be used to allow the operator to see obstructed areas.

## UNATTENDED MACHINERY

The worker is responsible for making sure that a machine; part of the machine; or extension to a machine, is not left unattended or in a suspended position unless the machine is immobilized and secured against accidental movement. For powered mobile equipment this means setting parking brakes; transmission locks; and lowering any blades, buckets or forks to the ground. The wheels may sometimes need to be blocked.

### ***At the well site employees must do the following:***

- Before any job task can commence the operator holds a pre-job safety meeting.
- At the pre-job safety meeting with everyone in attendance hazards are identified, discussed and if possible controls put in place.
- The job procedure is discussed and employees are made aware of safety precautions.
- Proper PPE is checked and donned.
- The operator is aware of each employee's position and job task responsibility.
- The operator and employees remain visible to each other and complete the job tasks using hand signals as a form of communication. New trainees will be supervised by another trained employee until they are able to complete procedures in a safe manner. A horn can also be used as a warning.
- When units are backing up, a spotter will be required and proper hand signals are to be used. If at any time the spotter is not visible to the machine operator, they must stop the machine immediately until the spotter is back in view.

## TOOL RETRIEVAL POLICY

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Rev: Jan, 2011

The following policy will be observed and practiced by Swab Master Ltd. employees when undertaking any job or contract.

The policy to follow if your tools are stuck in a well is as follows:

- Contact the General Manager of Swab Master Ltd. – He will make the decision as to what approach and procedure will be taken to retrieve the tools.
- All communication will be between the Swab Master Ltd. General Manager and the prime contractor, unless permission is given to you to do so by the General Manager.
- Our tank trucks are not to be used for any coil tubing air clean outs and are not to be used by any other company for any purpose unless it is expressly permitted by management.

## VISITOR POLICY

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Rev: April, 2016

Swab Master Ltd. is committed to making your visit a safety and healthy one for you and others in the workplace. It is for that reason we require all visitors to any Swab Master Ltd. grounds, facilities and workplaces to abide by the following safety rules while here. All visitors are to abide by the guidelines as set forth in Element 1: Management Leadership & Organizational Commitment.

As Stated:

“Visitors at the Swab Master Ltd. main office/shop are responsible to ensure, as far as it is reasonably practicable:

- They have signed in at the Main Office and have been assigned to a Swab Master Ltd. representative and remain with that person at all times while on Swab Master Ltd. property.
  - They are protecting their own and others’ safety and health.
  - They are using all safety and health devices and protective equipment as required.
  - They have reviewed the Site Map and are aware of the muster point in the event of evacuation.
  - Visitors are required to be accompanied by an employee of Swab Master Ltd. AT ALL TIMES while in the vicinity of Swab Master Ltd. operations.”
1. Signing in: All visitors to Swab Master Ltd. shall check in at the reception desk in the main office or at the dispatch office (if main office is closed) and sign the visitors log immediately upon arrival.
  2. Hazard Identification / Emergency Plan Notification: As part of the log-in process, you will be given a sheet describing the hazards of the workplace and the procedures to follow in case of an emergency.
  3. Personal Protective Equipment: All visitors must use and wear the following PPE at all times while visiting the shop:
    - a) Safety Glasses
    - b) Steel Toe Boots

While it is not common practice for visitors to come onto a well lease site, in the event that this does occur, all visitors will be required to don all appropriate PPE as per the regulations in the **PERSONAL PROTECTIVE EQUIPMENT POLICIES**. This may include, but is not limited to:

- a) Hard Hat
  - b) Fire Retardant Coveralls with Reflective stripes
  - c) Safety Glasses
  - d) Steel Toe Boots
4. Rules of Conduct: All visitors must obey the following rules at all times:
  - a) Follow all verbal instructions and signs
  - b) Do not touch or attempt to operate any machine, tool, device or equipment.
  - c) Do not talk to or distract workers operating machines, tools, devices or equipment.
  - d) Do not engage in any pranks, horseplay, contests or running.
  - e) Stay in the “safe zone” if possible – Stay out of restricted areas
  - f) Report all injuries or hazards immediately, no matter how minor.
5. Signing out: Visitors should leave through the same area in which they entered, and sign out.
6. Non-Compliance: Visitors who fail to follow these policies will have their visiting privileges revoked and be asked to leave. Swab Master Ltd. will not be responsible for injuries visitors suffer as a result of violating these rules.

***Swab Master Ltd. thanks you for your cooperation with this policy and its efforts to ensure that you enjoy a safe and healthy stay at our workplace.***