

OCCUPATIONAL HEALTH & SAFETY PROGRAM

Mar-Tech Underground Services Ltd.

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This revision has not yet been reviewed by MTU Joint Health & Safety Committee

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OCCUPATIONAL HEALTH AND SAFETY POLICY

To all employees June 2, 2008

At Mar-Tech Underground Services Ltd. the safety and health of our employees is our first priority. The management at Mar-Tech Underground Services Ltd., hereafter to be referred to simply as Mar-Tech, is fundamentally interested in its employees' health and safety. It is a primary objective of management to protect our workers from injury and illness of all kinds.

To fulfill this commitment Mar-Tech will make every effort to provide and maintain a safe and healthy workplace by adhering to acceptable industry standards and complying with WorkSafe BC's Occupational Health and Safety regulations, policies, guidelines and standards. In keeping with occupational health and safety legislation, a healthy and safe workplace will be established and maintained through consultation and cooperation with management and employees.

Supervisors will be held accountable for the health and safety of workers under their supervision. Responsibility includes ensuring that machinery and equipment are safe and that work practices are in compliance with established legislation, workplace practices and procedures. To protect their health and safety, workers must receive adequate specific work task training.

Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

Contractors will be required to operate according to legislative requirements using best practices and following Mar-Tech Undergrounds Occupational Health and Safety Program, including all policies and procedures regarding health and safety.

Health and safety is an integral part of this organization's every day business. It is in the best interest of all to join together and put into practice health and safety principles in all work activities.

This policy will be reviewed on a minimum annual basis and revised as necessary.

Signed: _____ **Print Name:** _____

Date: _____

Notice to Crews & Visitors

PLEASE READ

All Mar-Tech Employees, outside workers and visitors must understand the following general safety requirements before proceeding to work in and around a Mar-Tech worksite.

- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

Thank you. Your compliance is critical in maintaining a safe workplace!

INSPECTIONS

Regular inspections are made of all workplaces, including buildings, structures, grounds, excavations, tools, equipment, machinery and work methods and practices, at intervals that will prevent the development of unsafe working conditions.

INSPECTION OF TOOLS & EQUIPMENT

A critical aspect of Mar-Techs' safety program involves insuring that each tool, machine and piece of equipment in the workplace is:

- Capable of safely performing the functions for which it is intended for use.
- Selected and operated in accordance with:
 - The manufacturer's instructions wherever available
 - Safe work practices
 - The requirements of WorkSafeBC Regulations.

Unless otherwise specified by WorkSafeBC Regulations, the installation, inspection, testing, repair and maintenance of a tool, machine or piece of equipment must be carried out in accordance with the manufacturer's instructions and any standard the tool, machine or piece of equipment is required to meet, or as specified by a professional engineer.

IDENTIFYING TOOLS & EQUIPMENT UNSAFE FOR USE

A tool, machine or piece of equipment determined to be unsafe for use must be identified in a manner which will ensure it is not inadvertently returned to service until it is made safe for use. Unless otherwise specified by this Regulation, any modification of a tool, machine or piece of equipment must be carried out in accordance with the manufacturer's instructions, if available, safe work practices, and the requirements of all relevant WorkSafeBC Regulations.

PARTICIPATION OF THE COMMITTEE OR REPRESENTATIVE

Any inspection must include the participation of members of the joint committee or the worker health and safety representative, as applicable.

Regular inspections of the workplace are intended to:

1. Identify unsafe conditions or practices with the potential to cause injury or disease.
2. Determine necessary corrective measures.
3. Prevent unsafe work conditions and practices from developing.

The different kinds of inspections conducted by Mar-Tech are:

1. **Regular - Planned Inspections:** Inspect building, structures, grounds, tools, equipment, machinery, and work methods and practices for hazards that might cause injury, illness or disease. These inspections occur monthly.
2. **Equipment inspections:** Workers are trained to inspect their machinery, tools, and equipment regularly, following the manufacturer's recommendations. The Occupational Health and Safety Regulation may also have specific requirements.
3. **Special inspections:** The Occupational Health and Safety Regulations require a special inspection after a malfunction, accident or other significant incident to ensure that work does not resume until it is safe to do so.

- 4. Site inspections:** For all Mar-Tech worksites an initial hazard assessment is to be conducted prior to commencing any and all works. The hazard assessment is to be conducted by an employee specifically instructed in the assessment of typical worksite hazards. Unless specified otherwise by a supervisor, the senior operator on the worksite is to conduct the hazard assessment. For worksites with varying, complex and/or potentially hazardous environments, it is the responsibility of the Field Supervisor (Ron Ferenczi) to conduct both the initial hazard assessment and subsequent, regular site inspections.

THE INSPECTION TEAM

The inspection team includes both worker and management representatives.

As of Wednesday, September 19 – 2008, the Inspection Team at Mar-Tech Underground Services Ltd. is made up of the members of the Joint Health & Safety Committee:

Ron Ferenczi – Field Supervisor

Jason Roy – Operations Manager (Worker Health & Safety Representative)

Greg Spencer – Operator

Reid Taylor - Operator

Any unsafe or harmful conditions found during a regular inspection are to be reported immediately to the supervisor or employer and remedied immediately.

The inspection team is to record and communicate all significant findings.

Various Inspection Checklists have been generated for use in conducting Workplace, Worksite, Vehicle Inspections and more. These are to be used to record each hazard identified. It is the responsibility of the Inspection team to use this report to and to determine and implement measures to eliminate or control each hazard. Copies are to be made and available to management and workers. For example, posted copy on the OHS bulletin board.

WRITTEN INSTRUCTIONS

Mar-Tech has created a set of safe work practices and guidelines for use by all employees. A general guideline is posted on the OHS bulleting board. All qualified operators are required to also carry safe work practice guidelines for potentially dangerous or hazardous equipment and/or chemicals/materials they are operating when completing the duties of their work. It is the responsibility of management to provide the necessary written instructions to the workers so that they can conduct all works in a safe and efficient manner.

“Health and safety, productivity, and quality control all benefit from written procedures. Written procedures can help train new workers and establish a consistent level of work performance.”

-WorkSafeBC Implementing a Formal OHS Program

The written safe work procedure lists the steps in doing a task safely. Here are some of the relevant activities where Mar-Tech has provided written work procedures:

- **General Safe Work Practices Guidelines**
- **Specific Safe Work Practices Guidelines**
- **Hazard Assessment**
- **Confined Space Entry**
- **Traffic Control Awareness**
- **Public Relations**
- **Incident & Accident Reporting**

Not all tasks require detailed written procedures. Other types of written instructions may be appropriate. For some tasks, safety issues can be addressed verbally in crew talks or during training. In deciding whether or not written procedures are required, consider the following:

Written safe work procedures should be developed in consultation with the joint committee and workers who do the job. Provide workers with copies or post the procedures in the area where the work activity occurs.

Review these procedures whenever a job changes, new equipment is introduced, or workers return after an extended absence. In addition, work procedures may need to be adjusted as the result of recommendations from an inspection or from an investigation into an incident.

Copies of all Mar-Tech written work procedures are available to all employees and can be obtained upon request.

Outside agencies can request digital or hard copies of these documents by contacting Mar-Tech’s Health and Safety Officer at 604-219-2751.

JOINT HEALTH & SAFETY COMMITTEE

The Workers Compensation Act requires employers to establish a Joint Health and Safety Committee in any workplace that regularly employs 20 or more workers (full and part time).

It is the goal of our Joint Health & Safety Committee to help identify workplace health and safety responsibilities, establish positive attitudes, and assist with reducing/eliminating workplace injuries or diseases.

ROLE OF THE COMMITTEE

Mar-Techs Joint Health and Safety Committee is made up of worker and management representatives working together to identify and resolve health and safety problems in the workplace.

While the employer is ultimately responsible for the overall safety program, the committee is responsible for identifying and proposing resolutions to problems. The individual worker also has a responsibility to report problems to the supervisor or employer.

The Committee's role in the workplace includes:

- Promoting safe work practices
- Assisting in creating a safe and healthy workplace
- Recommending actions which will improve the effectiveness of the occupational health and safety program
- Promote compliance with WCB Regulation.

WORKER COMPLAINTS

Employees should be instructed that complaints concerning health and safety should be directed to their supervisor. However, if the situation is not handled to the worker's satisfaction, a committee member should be contacted. The member can work with the supervisor and the committee, if needed, to resolve the complaint. It is important to keep the worker informed of the disposition of the matter.

The safety and health committee must not be used as a grievance committee.

COMMITTEE ORGANIZATION

Members OF THE Joint Health & Safety Committee are selected according to the needs of the organization and represent all workers in the operation.

TERMS OF OFFICE

There is no mandatory term of office at this point.

DESIGNATING ALTERNATES

Alternates are designated by the current Joint Committee members. The alternate is counceled and if willing, becomes an alternate.

COMMITTEE SIZE

Mar-Tech currently considers its work practices to be of a minimally dangerous nature, and so maintains a committee of only four members; two from management and two from the workers.

CURRENT COMMITTEE

As of Wednesday, August 13 – 2008, the Joint Committee at Mar-Tech Underground Services Ltd. is made up of the following members:

Ron Ferenczi – Field Supervisor

Management representative whose function in the capacity as member of the joint committee is to manage and maintain worksite and equipment safety inspections, as well as safe work practices and methods. This member is to oversee regular equipment maintenance and inspection and submit records to the Joint Committee clerk.

Jason Roy – Operations Manager (Health & Safety Officer)

Management representative whose function in the capacity as member of the joint committee is to manage and maintain facility and equipment safety inspections, as well as safe work practices and methods. This member is to act as the clerk and records keeper for all meetings conducted by the joint committee.

Greg Spencer – Operator

Worker representative whose function in the capacity as member of the joint committee is to manage and maintain worksite and equipment safety inspections, as well as safe work practices and methods.

Reid Taylor – Operator

Worker representative whose function in the capacity as member of the joint committee is to manage and maintain worksite and equipment safety inspections, as well as safe work practices and methods.

- Minutes from the Monthly Joint Safety Committee safety meetings are to be recorded and filed for future reference.

SAFETY MEETINGS

Mar-Tech's Health & Safety Program requires that regular planned safety meetings take place. There are several types of meetings required, each with their own criteria and methodology. They are:

- **Daily tailgate safety meetings**
- **General tailgate safety meetings**
- **Monthly joint health & safety committee meetings**
- **Monthly management safety meetings**
- **Monthly general safety meetings**

DAILY TAILGATE SAFETY MEETINGS

Daily tailgate safety meetings are to be conducted on those jobs deemed by the senior operator or field supervisor to require them. These are for worksites with varying, complex and/or potentially hazardous environments, jobs with known hazardous environments and those where several sub-contracted works will take place. The following describes the requirements of daily tailgate safety meetings:

- The Field Supervisor (Ron Ferenczi) or his appointed representative is to conduct a daily tailgate safety meeting prior to start of work with all crews who will be conducting works onsite that day. In the event that sub-contractors or other Mar-Tech crews will be arriving at points later in the day, these crews must be oriented through additional tailgate safety meetings by the Field Supervisor or his representative.
- Minutes from these tailgate safety meetings are to be recorded and filed for future reference.

GENERAL TAILGATE SAFETY MEETINGS

General tailgate safety meetings are to be conducted onsite, prior to the commencement of works by the assigned senior operator. The purpose of the tailgate safety meeting is to orient its crews to the general safety guidelines and requirements, and is done at the start of each job at every worksite. Note that jobs deemed by the senior operator to have varying, complex and/or potentially hazardous environments, jobs with known hazardous environments and those where several sub-contracted works will take place are to be inspected by the field supervisor prior to the start of works. The following describes the requirements of general tailgate safety meetings:

- The senior operator is to conduct a general tailgate safety meeting prior to start of work with all Mar-Tech crews who will be conducting works onsite that day. In the event that other Mar-Tech crews will be arriving at points later in the day, these crews must be oriented through review of the tailgate safety meeting and hazard assessment reports. This orientation to be conducted by the assigned senior operator.
- Minutes from these tailgate safety meetings are to be recorded and filed for future reference.

MONTHLY JOINT HEALTH & SAFETY COMMITTEE SAFETY MEETINGS

The Joint Health & Safety Committee is to meet a minimum of once monthly, at least one (1) week prior to the General Safety Meeting as described below. Members of the Joint Committee include both worker and management representatives. Membership is voluntary. In the absence of any member of the joint committee, an alternate can be selected from the management or worker pool as delegated by the position of the absentee (ie: if a worker cannot be present, his alternate is to be another worker, and not a member of management and vice versa).

MONTHLY GENERAL SAFETY MEETINGS

All employees are to attend a monthly general safety meeting which takes place at Mar-Tech's Operations facility at 5166 272 St, Langley, BC. These meetings normally take place on the first Monday of every month.

- Minutes from the Monthly General Safety Meetings are to be recorded and filed for future reference.

MONTHLY MANAGEMENT SAFETY MEETINGS

Following the General Safety Meeting at least two (2) members of management are to meet and review the findings of the Joint Committee as well as discuss and determine necessary action for dealing with any health and safety activities, accidents or concerns raised by employees at the General Safety Meeting.

- Minutes from the Monthly Management Safety Meetings are to be recorded and filed for future reference.

ACCIDENTS

Mar-Tech's OHS program has a specific process for investigating accidents that had the potential to cause injury, illness or disease.

The function of an investigation is to identify the cause or causes of the accident and to advise steps to prevent similar unsafe conditions.

What is an incident?

The Occupational Health and Safety Regulations define an incident as "an accident or other occurrence which resulted in or had the potential for causing an injury or occupational disease." Incidents include the following:

- Accidents in which a worker is injured or killed
- Accidents in which no one is hurt but equipment or property is damaged
- Near misses (no visible injury or damage but the incident could have resulted in a serious injury, death, or property damage)

Serious incidents Mar-Tech will report to WorkSafeBC

It is Mar-Tech's strict policy to immediately notify WorkSafeBC of any serious incidents that:

- Resulted in serious injury to a worker or the death of a worker
- Involved a major structural failure or collapse of a building, bridge, tower, crane, hoist, temporary construction support system, or excavation
- Involved the major release of a hazardous substance

To report a serious incident, call 604 276-3100 in the Lower Mainland or 1 888 621-SAFE (7233) toll-free in B.C. To report an incident after normal business hours, call 604 273-7711 or toll-free 1 866 922-4357 (WCB-HELP).

In the event of a serious incident, the scene must be secured and left undisturbed until a WorkSafeBC officer releases it (except for attending to injured workers and preventing further injuries).

Where possible, investigations should involve both worker and employer representatives and members of the joint committee. An incident investigation report must include the following information:

- The place, date, and time of the incident
- The names and job titles of persons injured in the incident
- The names of witnesses
- A brief description of the incident
- A statement of the sequence of events that led up to the incident
- Identification of any unsafe conditions, acts, or procedures that contributed to the incident
- Recommended corrective actions to prevent similar incidents
- The names of persons who investigated the incident

EMPLOYER DUTIES

1. If one or more workers were injured, fill out forms 7 and 7A and send copies to the WCB or submit online:

- Form 7: Employer's Report of Injury or Occupational Disease
- Form 7A: First Aid Report

2. Determine who will investigate the incident.

3. Investigate the incident:

- Determine the cause or causes of the incident.

- Identify any unsafe conditions, acts, or procedures that contributed to the incident.
 - Recommend corrective action to prevent similar incidents.
4. Prepare incident investigation report.
 5. Provide copy of report to joint committee (and the WCB if required).
 6. Take corrective action required to prevent reoccurrence of similar incidents.
 7. Prepare follow-up report on corrective action taken.
 8. Provide copy of follow-up report to joint committee or post at the workplace.

HAZARD ASSESSMENTS

- Hazard Assessments for Confined Space Entries are conducted based on the space characteristics, access, and work activities to be performed inside the space. The potential for oxygen enrichment and deficiency, flammable gas, vapor or mist, combustible dust, other hazardous atmospheres; and the presence of harmful substances and other hazardous conditions, prior to and during all work within the confined space.
- Assessment of potential hazards inside confined space is to be assessed and recorded by qualified personnel. Refer to Hazard Assessment Report
- Crews must complete a proper hazard assessment report whenever they undertake a confined space entry.
- Hazard assessments must also be conducted whenever an employee undertakes any other action of a potentially dangerous nature.

CONFINED SPACE ENTRY PROGRAM

Mar-Tech's confined space entry program is a comprehensive series of safety protocols whose intent is to protect the worker from harm while conducting work in a confined space. As per WorkSafeBC regulations, Mar-Tech has developed its own Confined Space Entry Program, which can be requested either in digital or hard copy by contacting Mar-Tech's Health and Safety Officer at 604-219-2751.

RECORDS AND STATISTICS

RECORDS

Mar-Tech uses several methods for the collection of records. Below is a non-exhaustive list of some of the reports used:

- Inspection reports and records of corrective actions taken
- Incident investigation reports and records of corrective actions taken
- Worker orientation records
- Records of worker and supervisor training showing the date, names of attendees, and topics covered (for example, lockout and WHMIS training)
- Records of meetings and crew talks at which safety issues were discussed
- Supervisors' notes and logs of safety contacts
- Records showing use of progressive discipline to enforce safety rules and written safe work procedures
- Joint committee meeting reports showing steps taken to address health and safety issues
- Subcontractor pre-qualification documents
- Equipment logbooks and maintenance records
- First aid records, medical certificates, and hearing tests
- Forms and checklists (for example, confined space entry permits) showing requirements for safe work procedures
- Sampling and monitoring records for work around harmful substances
- Emergency response plan, record of drills, and any resulting improvements

STATISTICS

Accident and injury statistics are useful for identifying trends and for measuring the effectiveness of health and safety activities and programs. The table below outlines some ways you might use data from incidents for statistical analysis:

Type of incidents Types of data Statistical analysis

- Near misses
- First aid only
- Health care only
- Time-loss injury
- Number of incidents
- Frequency of incidents
- Number of injuries
- Types of injuries
- Severity of injuries
- Number of days lost
- Compare monthly and annual results
- Compare type of work or activity
- Compare shifts
- Compare worker experience and training

INJURY RATES

Mar-Tech records and maintains a current and updated list of all noted, work-related injuries in addition to the records-on-file that can be found in each person's personnel file. This information is useful for determining the current injury rate, and to track improvements and problems with regards to the frequency, nature and severity of injuries and injury trends.

INSTRUCTION AND SUPERVISION OF WORKERS

Due to the degree of risk involved with some activities at Mar-Tech Underground Services, information instruction, training and supervision are of utmost importance in preventing injury and illness. It is Mar-Techs' responsibility to ensure that every worker receives adequate instruction to do their work safely. This is usually done through education and training. Education generally refers to formal classroom instruction that may include lectures, discussions, and videos. Training generally refers to hands-on, job-specific instruction provided individually or in small groups to workers. Training often includes demonstrations and active participation by workers so that supervisors can confirm that workers understand safe work procedures. Often, monthly Safety Meetings include informal training such as gas detector calibration/bump testing, proper trailer hook-up, proper tie-down, etc.

WORKPLACE HEALTH & SAFETY INDUCTION

Workplace health and safety induction provides new employees with the initial information, instruction and training needed to function safely and effectively on the job. This induction is conducted as soon after or sometimes preceding the first day of work by the employee. Mar-Techs Safety Induction covers the following basics:

- General Safe Work Practices
- PPE Requirements
- Confined space entry information
- Traffic safety & awareness
- Gas detector operation
- Location of first aid equipment and services
- Reporting accidents, injuries, and unsafe conditions
- Right to refuse unsafe work
- Location of fire exits, routes, and safe gathering areas
- Emergency procedures

TRAINING

Training helps to ensure that workers have the appropriate skills and knowledge to perform their work safely. Ensuring workers have appropriate training and are competent to do a work task may reduce the likelihood of an incident in the workplace.

The level of training provided will depend on:

- Degree of risk associated with task
- Worker's previous industry experience
- Worker's current skills and abilities (before training)
- Nature of the hazards involved

MANDATORY FORMAL TRAINING

Mandatory formal training is conducted annually. Some of the formal training provided is:

- Confined Space Entry
- Traffic Control Awareness
- Gas Detector Training
- WHMIS
- Transportation of Dangerous Goods
- Fall Safety & Prevention
- Occupational First Aid

An education and training record is maintained for each employee, listing topics covered and date of education and training. Education and training records are reviewed regularly to ensure that training requirements have been met.

Supervisors oversee their workers to ensure that they follow all safe work procedures. Adequate supervision includes:

- Ensuring proper training of workers
- Observing workers after training to ensure that they continue to follow safe work procedures
- Making informal inspections on a daily basis to ensure safe work procedures are being followed, including the proper use of protective equipment, devices, and clothing provided
- Enforcing safety rules and safe work procedures
- Conducting informal discussions (crew talks) with workers to discuss specific safety issues as they arise

The following are some examples of education and training topics, who may receive them, and what they should include.

Topic	Type of workers or industries	Key content (not inclusive)
New worker orientation (Health & Safety Induction)	All workers	<ul style="list-style-type: none"> • Location of first aid equipment and services • Reporting accidents, injuries, and unsafe conditions • Safe work procedures • Right to refuse unsafe work • Location of fire exits, routes, and safe gathering areas • Emergency procedures
WHMIS	All workers who are or may be exposed to hazardous materials	<ul style="list-style-type: none"> • Reading and understanding labels • Understanding information on • Location of MSDSs • Hazards of products being used • Controls measures and appropriate protective equipment (PPE)
Personal Protective Equipment (PPE)	Various industries	<ul style="list-style-type: none"> • When, why, where, and how to use specific PPE • Limitations of protection • Regular inspection and maintenance
Confined space Entry	Various industries	<ul style="list-style-type: none"> • Understand the hazards of each confined space • Procedures for working safely in a specific space as set out in the confined space entry program
Confined Space Rescue	Various industries	<ul style="list-style-type: none"> • Understand the hazards of each confined space • Procedures for working safely in a specific space as set out in the confined space entry program
Fall protection	Construction	<ul style="list-style-type: none"> • Fall protection system being used • Fall protection procedures • Proper use of fall protection equipment
Transportation of Dangerous Goods	Transportation industry, truck drivers in particular	<ul style="list-style-type: none"> • Different classifications of materials
Traffic Awareness Training	Various Industries	<ul style="list-style-type: none"> • Safe Work Practices

Topic	Type of workers or industries	Key content (not inclusive)
Chemical hazards (such as lead, asbestos), Biological hazards (such as HIV, hepatitis) and Physical hazards (such as noise, vibration, heat, cold, radiation)	Various industries	<ul style="list-style-type: none"> • Potential health effects of exposure • Common routes of exposure • Ways to prevent exposure • Proper use of controls • How to recognize signs and symptoms of exposure

FIRST AID

Mandatory First Aid Certification occurs bi-annually, typically in the last week of December and/or the first week of January. Workers whose certification will expire, as well as new employees who have completed their probationary period are automatically registered for First Aid Training.

- Mandatory First Aid Certification is Occupational First Aid Level 1

Prior to the start of work, new employees are to be oriented to the first aid equipment available on site, as well as to who the first aid attendant is on the crew that they will be working on.

EMERGENCY CONTACT INFORMATION

Emergency Contact Number Lists for each Municipality that Mar-Tech crews work in are to be kept on each truck for quick access in the event of an emergency. These contact lists include the location of hospitals, police, fire department and other emergency services, for:

- | | |
|-------------------------------|------------------------|
| • Abbotsford | • Langley, Township of |
| • Burnaby | • Maple Ridge |
| • Chilliwack | • Metro Vancouver |
| • City of North Vancouver | • New Westminster |
| • Coquitlam | • Port Coquitlam |
| • Delta | • Richmond |
| • District of North Vancouver | • Surrey |
| • Greater Victoria | • West Vancouver |
| • Langley, City of | • White Rock |

FIRST AID EQUIPMENT

First Aid Equipment is to be inspected regularly by the Inspection Team and replaced as per the manufacturer’s recommendations.

There is a First Aid Record Book hanging from the OHS bulleting board in the staff lounge. This is to be used for the reporting of any and all injuries or illnesses which occur at work.

WHMIS

Workplace Hazardous Material Information Systems (WHMIS) is implemented through coordinated federal, provincial and territorial legislation. Supplier labelling and MSDS requirements are set out under the Hazardous Products Act (HPA) and associated Controlled Products Regulations administered by Health Canada. Each of the thirteen provincial, territorial and federal agencies responsible for occupational safety and health have established employer WHMIS requirements within their respective jurisdiction. These requirements place an onus on employers to ensure that controlled products used, stored, handled or disposed of in the workplace are properly labelled, MSDSs are made available to workers, and workers receive education and training to ensure the safe storage, handling and use of controlled products in the workplace.

To promote national consistency in the application of WHMIS in Canada's workplaces, the government of each province and territory, as well as [the Labour Program at] Human Resources and Social Development Canada, which is responsible for workplaces under federal jurisdiction, established their respective employer requirements based on "Model [WHMIS] OSH Regulations". This model was prepared by the Occupational Health and Safety Committee of the Canadian Association of Administrators of Labour Legislation.

At the outset of the program (which came into effect on October 31, 1988), all governments agreed to undertake consultations on any proposed changes to their respective WHMIS legislation and regulations with the objective of maintaining consistency with developments in the national consensus on WHMIS. The Intergovernmental WHMIS Coordinating Committee, (see "Administration & Consultation" page), serves as the forum for this consultation.

Mar-Tech Underground Services complies with the legislation by providing complete and updated MSDS labels on all chemical and materials requiring them. Also, complete and updated MSDS manuals are kept in various, marked areas throughout the facility as follows:

- Racking area
- Wet-out area
- Mechanics Office (See Winston Norman)
- Operations Managers Office (See Jason Roy)
- Field Supervisors Office (See Ron Ferenczi)
- Main Office (See Irene Ayotte)

In addition to this, each of the vehicles that will be used to transport and/or store materials deemed as requiring an MSDS will carry a copy of Mar-Tech's complete and updated MSDS Manual. This manual is to be kept in an easily accessible, marked area within the operators' area of the vehicle.

Employees are trained annually in a non-transferable* Workplace Hazardous Materials Information System Program.

* This certification does not transfer beyond employment at Mar-Tech, thus if an employee ceases employment with Mar-Tech his/her WHMIS training is deemed to be void.

Confined Space Entry Procedures Manual

Mar-Tech Underground Services Ltd.

**Last Revision:
Friday, September 11th, 2008**

Jason C. Roy

REMEMBER:

**FOR ANY CONFINED
SPACE ENTRY**

***FAILURE TO
COMPLY WITH ALL
PROCEDURES
COULD BE FATAL!***

**THERE ARE NO EXCEPTIONS TO THE PROCEDURES
AS DESCRIBED IN THIS MANUAL!**

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CONFINED SPACE ENTRY PROCEDURES

INTRODUCTION

The purpose of this manual is to augment the training already provided to the worker with written instructions on the various safety aspects of confined space entry. This manual also acts as a study-guide for new employees who have not yet taken the confined space entry certification training. It is extremely important that all workers understand the inherent and potential dangers posed to health and safety when working in or near a confined space.

INSTRUCTION & TRAINING

All Mar-Tech employees who will work in the field receive mandatory annual, formal confined space entry training and certification. This certification prepares workers on how to:

- Calibrate, bump test and perform proper atmospheric testing
- Recognize a confined space
- Understand the inherent and potential dangers of a confined space
- Conduct proper confined space hazard assessments
- Fill-out confined space entry permits
- Effect confined space rescue
- Follow Written Instructions for working safely within a confined space as detailed in this manual

This certification training is augmented by periodic drills and refresher sessions throughout the year.

RECOGNITION OF CONFINED SPACES

CONFINED SPACE

A confined space is not normally designated or intended for human occupancy. Special precautions are required to protect workers who must enter from flammable or harmful atmospheres, oxygen depletion or enrichment, or situations of possible entrapment. Examples include: tanks, silos, storage bins, process vessels, pipelines, sewers, double hulls, underground utility vaults, boilers, pits, vats and tunnels.

Confined spaces have the following general characteristics:

- Not designated or intended for continuous human occupancy
- Provide limited means of entry and exit
- Have poor natural ventilation with the presence of or the potential for a dangerous atmosphere
- Pose another danger such as entrapment
- Require special precautions prior to and during entry, including the means for immediate rescue

CONFINED SPACES ARE NOT INTENDED FOR HUMAN OCCUPANCY

They are not sites of ongoing or regular work activity. They are usually entered only for purposes such as inspection, maintenance, repair or construction.

CONFINED SPACES HAVE LIMITED MEANS OF ENTRY & EXIT

Entry points may not be designated for easy walk-in. Other limitations include access by ladders or by stairways, which provide poor access because of restrictive slope, narrow width or extreme length. Physical obstructions such as bulkheads, collapsed material or machinery may impede exit. Limited means of entry and exit not only makes escape or rescue difficult, but also can restrict natural ventilation.

CONFINED SPACES HAVE POOR NATURAL VENTILATION WITH THE PRESENCE OF OR POTENTIAL FOR A DANGEROUS ATMOSPHERE

Poor natural ventilation can be a result of unpredictable or limited air movement, or natural air currents, which could draw, contaminated air into the space. Poor natural ventilation can create a confined atmosphere.

The most common cause of a confined atmosphere is physical enclosure on all sides. However, vats, pits and vessels, which contain confined atmospheres, may be open on one face. In these cases the confined atmosphere may result from entry of a gas, which is heavier than air, the release of a gas from the disturbance of wastes at the bottom of the space or the existence of a temperature inversion above the space, which prevents the movement of air through it. Vessels more than 1.5 meters deep may have poor natural ventilation.

The presence or possibility of an unsafe atmosphere is a key characteristic of a confined space. There are four general types of atmospheric dangers: a lack of oxygen; an excess of oxygen; the presence of flammables; and the presence of toxic substances. The design, location or contents of the confined space may contribute to the danger. Danger could also be produced by work activity within the space such as from welding or during painting.

CONFINED SPACE IDENTIFICATION & CRITERIA

IDENTIFICATION

1. Is the space intended for human occupancy?
YES = **Not a Confined space.**
NO = Go to question 2.
2. Does the space have poor natural ventilation?
YES = Go to question 3.
NO = Go to question 6.
3. Is an unsafe atmosphere possible prior to entry due to contents or design?
YES = **Confined Space.**
NO = Go to question 4.
4. Is an unsafe atmosphere possible due to work activity in the space?
YES = **Confined Space.**
NO = Go to question 5.
5. Is an unsafe atmosphere possible due to work location?
YES = **Confined Space.**
NO = Go to question 6.
6. Is the space unsafe due to the possibility of entrapment or other potentially dangerous conditions?
YES = **Confined Space.**
NO = **Not a Confined Space.**

DESCRIPTION OF CRITERIA

1. Human occupancy means location meant for ongoing, regular work activity. Confined spaces are intended only for activities such as inspection, maintenance, repair or construction. Many spaces with limited means of entry and exit are not intended for human occupancy. Limited means may be due to:
 - Entry/exit points not designed for walk-in
 - Ladders or other restricted routes to entry/exit points
 - Physical obstructions (eg. Bulkheads, collapsed material, machinery)
2. Poor natural ventilation can be a result of unpredictable or limited air movement, or natural air currents which could draw contaminated air into the space, Causes include:
 - All sides physically enclosed or if not enclosed, some other condition such as still air or temperature inversion which traps air
 - Small or poorly positioned openings
 - Bulkheads, other obstructions or recesses in the space
 - Location of space near source of air contaminants which could drift in

3. Sources of unsafe atmosphere include:
 - Harmful residues
 - Purge gases
 - Rusting or other condition which could contribute to oxygen depletion
 - Possible discharges from pipes or conduits leading into space
 - Other unknown conditions which could contribute to an unsafe atmosphere
4. Types of activities include:
 - Waste cleanup, sludge removal
 - Preparatory work – chipping, grinding
 - Painting, welding, fibreglassing
5. Possible problems of location:
 - Air contaminants can drift into the space from nearby sources
 - Space is inside an additional structure which contributes to atmospheric trapping
 - Space is underground with possible accumulation of subsurface gases, eg. Methane, hydrogen sulfide or radon
6. Dangers include:
 - Dislodgement of material
 - Dangerous design of space
 - Presence of dangerous equipment in space

HAZARD ASSESSMENT

Assessments are conducted based on the space characteristics, access, and work activities to be performed inside the space. The potential for oxygen enrichment and deficiency, flammable gas, vapor or mist, combustible dust, other hazardous atmospheres; and the presence of harmful substances and other hazardous conditions, prior to and during all work within the confined space.

DESCRIPTION OF SPACE

Municipal and City sewer lines accessed through street level manholes.

ASSESSMENT

Assessment of potential hazards inside confined space is to be assessed and recorded by qualified personnel. Refer to Hazard Assessment Report (sample below)

HAZARD ASSESSMENT REPORT - MAR-TECH UNDERGROUND SERVICES								
Date:		Time:		Location:				
Job #:								
Type of work:								
Hazard Description		Hazard Present?		Possibility				Further Description
Type	Details	Yes	No	None	Low	Med.	High	
Energy	Electrical							
	Pneumatic/Hydraulic							
	Radiation							
Atmospheric	Oxygen Deficient							
	Oxygen Concentration							
	Flammable Gases							
	Carbon Monoxide							
	Hydrogen Sulfide							
Physical	Other Gases							
	Engulfment/Inversion							
	Limited Egress/Escort							
	Inadequate Lighting							
	Vibration							
	Noise							
	Poor Visibility							
	Temperature/Extreme							
Other	Slip and Fall							
	Electrocution							
	Dropped tool/equipment							
Crew:		Work Dates:						
_____		_____						
_____		_____						
_____		_____						
Other Comments & Remarks:								

Hazard Assessment by (print):		Signature: _____						

Example of Mar-Tech Hazard Assessment Report

HAZARD ASSESSMENT DESCRIPTORS

Electrical Energy

Refers to the presence of electrical energy, such as that carried by any tools being used in the confined space as well as existent electrical wiring in and around the space.

Pneumatic/Hydraulic Energy

Specific to the use of air and/or hydraulic tools.

Radiation

Refers to the presence of radiation within the confined space.

Engulfment/Immersion

Weather conditions may cause an overflow of the sewage system if it is a storm sewer or sanitary/storm combined. The workers and standby personnel must be aware of the effects of rainfall on the system.

Oxygen Deficiency

Before entry and during work the atmosphere must be tested for Oxygen deficiency. (>19.5% & <23%)

Flammable Gases

Before entry and during work the atmosphere must be tested for the presence of flammable gases. (LEL below 10%).

Carbon Monoxide

Before entry and during work the atmosphere must be tested for Carbon Monoxide. (Below 25 ppm).

Hydrogen Sulfide

Systems may have raw (untreated) sewage running through them. Consequently the possibility of the presence of hydrogen sulfide is there. The atmosphere must be tested prior to entry and continuously for the presence of hydrogen sulfide. (Below 10 ppm).

Slip and Fall

The areas inside the manhole are accessed by a permanent ladder. The possibility of slipping on this ladder is present especially if it is wet and/or the ladder rungs are rusted or otherwise corroded and incapable of sustaining the weight of the worker.

Bio-Infectious

This system has raw sewage running through it, consequently the possibility of the presence of bio-infectious contaminants exists. Equipment, tools and clothing may be contaminated. Protective gloves, coveralls, and footwear must be worn if contact is possible. Hands must be washed thoroughly with an anti-microbial soap before eating, drinking or before any contact between hands and face. Also complete wash up must be done when finishing work.

POSTING OF AREA

The work area will be protected from traffic by traffic cones and signs. The entrance will be posted as a confined space and an entry permit will be completed and posted for each entry.

VENTILATION

- The space will be CONTINUOUSLY ventilated with clean, respirable air by a portable blower. The blower will create airflow of a minimum of (50 cubic feet per minute) per worker in the confined space.
- Ducting will be used to direct airflow into the workspace to ensure efficient air exchange. The space must be ventilated for a minimum of 20 minutes after initial testing and prior to entry. After the 20-minute ventilation, the air must be tested again and the results recorded on the entry permit.
- The atmosphere must be continuously ventilated while work is being performed.

STANDBY PERSON RESPONSIBILITIES

- The standby person (Top Man) must:
- Be trained, equipped and capable of initiating or affecting immediate rescue in the case of an emergency.
- Be qualified and capable of operating the gas detector supplied
- Perform the Hazard Assessment
- Fill-out the entry Permit
- Conduct atmospheric testing prior to and during entry as required
- Know who is in the confined space and prevent unauthorized entry.
- Maintain regular communications with the worker in the confined space.
- Remain at their station immediately outside the space at all times while the worker is in the confined space.
- Instruct the worker in the confined space to vacate the space immediately if an unexpected (new) danger or hazard arises, or for any reason the Standby person feels requires it.
- In the event of an emergency, the standby person must not enter the confined space until back-up assistance has arrived. **See Confined Space Rescue**

WORKER RESPONSIBILITIES

- The worker (Bottom Man) must:
- Be trained, equipped and capable of making a safe confined space entry.
- Follow the direction of the standby person at all times.
- Not disconnect their primary lifeline.
- Vacate the space immediately if they feel the safety equipment in use has been compromised or is not operating properly.
- Vacate the confined space immediately if they feel any symptoms of illness such as nausea, dizziness, watery eyes or other sudden onset issues.
- Vacate the confined space immediately if they feel the standby person has broken communication or has left the area immediately outside the confined space for any length of time,
- Vacate the confined space immediately if they feel the danger or hazards as assessed and recorded in the Hazard Assessment Record have changed in any way.

MANDATORY MINIMUM SAFETY EQUIPMENT

- 1 (one) combination combustible gas, toxic gas, oxygen detector/tester.
- 1 (one) ventilation unit (consists of 1 (one) model &8C HP leader fan complete with model HCH8 hose container & hose
- 1 (one) first aid kit (minimum size #2)
- Full, parachute-style body harness
- Tripod with manlift

PERSONAL PROTECTIVE EQUIPMENT (PPE)

There are additional PPE requirements when a worker will enter a confined space. The complete list follows:

- Hard hat
- Cover-alls (full length arm/length coverage)
- Safety footwear (hard-toes boots)
- Gloves (PVC)
- Eye protection (Safety goggles)
- Hearing protection (Ear plugs or muffs)

Each crew member that enters a confined space must wear an approved parachute-type safety harness complete with attached approved safety line which is tended at all times by another person stationed outside the entrance to the confined space.

REMEMBER:

IF YOU CAN'T TEST,

IF YOU CAN'T VENTILATE,

DO NOT ENTER!!!

A worker's COMMON SENSE is still his best ally. One of the simplest and best safety rules to follow is this:

IF SOMETHING DOESN'T SEEM RIGHT, DON'T DO IT! YOU HAVE THE RIGHT OF REFUSAL!

ENTRY PROCEDURES

The following safe work practice procedures are to be observed by crews involved in confined space entry:

1. Confined Space Rescue

Prior to arriving at worksite, establish emergency numbers and a definite location in the event EHS or rescue personnel must be summoned.

2. Safe Parking

Establish a safe parking area for all work vehicles and equipment, using the work truck(s) as a buffer wherever possible.

3. Traffic Control

Set up traffic control as per the Traffic Control Manual for work on Roadways (the Traffic Control Manual) issued by the Province of British Columbia Ministry of Transportation & Highways.

4. Posting of Area

Place approved barricade and/or approved markers, cones, signs, lights, flagging tape, etc. around the opening.

5. Hazard Assessment

Conduct a Hazard Assessment of the confined space & record results

6. Set-up Safety Equipment

- a. Tripod
- b. Lifeline(s)
- c. Ventilation fans & ducting
- d. Other safety equipment as needed

7. Fill-out Entry Permit

Complete pre-entry information on entry permit. Workers, standby personnel and supervisor sign permit.

8. Atmosphere Testing

Perform pre-entry atmospheric tests and record results and time on permit.

- If the tests find permissible atmospheric conditions, proceed to 15.
- If the tests find that the atmosphere is still non-permissible, proceed to 9 or 10 below.

9. Lack of Oxygen or Presence of Toxic Gases

If atmosphere testing shows an atmosphere that is lacking in oxygen or that has toxic gases present, the standby person is to:

- a. Inform the supervisor
- b. Ventilate the confined space for a period of at least 10 minutes.
- c. Re-test confined space atmosphere
- d. If permissible levels still do not exist, repeat steps from **9a** as required.
- e. Once atmosphere testing shows the space is safe, go to **15**.

10. Presence of combustible/flammable gases

- a. Inform supervisor
- b. All potential sources of ignition shall be eliminated (no smoking, flares, etc.)
- c. Ventilate for a period of at least 10 minutes.
- d. Re-test the confined space atmosphere
- e. If permissible levels still do not exist, repeat steps from **10a** as required.
- f. Once atmosphere testing shows the space is safe, go to **15**.

11. Monitor atmosphere constantly while work is being done in confined space

12. Increase record of atmosphere testing

If an atmosphere test has shown a non-permissible atmosphere at any point in time during testing, increase record of testing to every 5 minutes instead of 15.

13. Use Extreme Caution

Especially when entering confined space in commercial or industrial areas. Be aware of any service stations, paint stores, printing shops, dry-cleaning plants, chemical plants, garbage dumps, etc. in the area. If it doesn't feel safe, do not enter.

14. If in doubt about any tests performed, re-test.

Remember that lives may depend on testing accuracy. If you are unsure of any result, re-test to confirm readings before anyone enters the space.

15. Start ventilation of space

Install ventilator fan and hose.

16. Re-test atmosphere and record results and time on entry permit

Record atmosphere test results every 15 minutes as long as the atmosphere is permissible. If at any time an atmosphere test shows a non-permissible level, go to step 9 or 10, depending on the nature of the reading.

17. Allow fresh air to completely cycle through the space

18. Establish standby station and allow worker to enter space

19. Continuously ventilate space while working.

20. Continuously monitor atmosphere while working in space.

If at any time an atmosphere test shows a non-permissible reading, go back to step 9 or 10, depending on the nature of the reading.

21. Re-test before any re-entry

PROPERTIES OF GASES & VAPOURS

Below is a list of some of the gases and vapors that may be found in confined spaces.

GAS/VAPOUR	FLAMMABLE	PHYSICAL DESCRIPTION	MAIN DANGER	MAX. LEVEL PERMITTED IN AIR	DENSITY (2) (compare to air=1)
Argon	No	Colorless, Odorless	Displacement of Oxygen	Ensure Oxygen is greater than 18% at all times (4)	1.4
Carbon Dioxide (CO ₂)	No	Colorless, Odorless	Displacement of Oxygen + Toxic	5000 ppm (1)	1.5
Carbon Monoxide (CO)	Yes	Colorless, Odorless	Toxic, asphyxiant	25 ppm (1)	0.97
Chlorine	No	Greenish/yellow color, sharp, pungent odor	Toxic – severe lung and eye irritant	0.5 ppm (1)	2.5
Gasoline Vapors	Yes	Colorless, sweet odor	Fire and Explosion	500 ppm (1)	3.5
Hydrogen Sulfide (H ₂ S)	Yes	Colorless, rotten egg odor (3)	Extremely toxic – can cause lung failure	10 ppm 3(1)	1.2
Methane (CH ₄)	Yes	Colorless, odorless	Fire and Explosion	20% of LFL	0.6
Nitrogen (N ₂)	No	Colorless, odorless	Displacement of Oxygen	Ensure Oxygen is greater than 18% at all times (4)	0.97
Nitrogen Dioxide (NO ₂)	No	Reddish brown color; pungent odor	Toxic – severe lung irritant	1 ppm (1)	1.6
Sulfur Dioxide (SO ₂)	No	Colorless, Suffocating odor	Toxic – severe lung irritant	2 ppm (1)	2.2

1. The levels are 8-hour average exposure limits, except for nitrogen dioxide, where the level is a ceiling limited, not to be exceeded at any time.
2. Concentrated gases with a density more than one may, in the absence of air currents, tend to settle in low areas; those less than one rise.
3. Exposure deadens the sense of smell
4. Where air-purifying respirators are worn, oxygen content of the air must exceed 19.5% (NIOSH approval).

RESCUE & FIRST AID

RESCUE

In the event of an accident, the following confined space rescue protocols are to be observed:

A standby person shall remain in constant communication with the entrant. The standby worker must have assistance, if it is necessary to enter the space to effect rescue.

If an entrant advises the standby person that an injury has occurred, then the standby person will immediately notify the site First Aid Attendant. All personnel shall be advised during the pre-job orientation training that in the event of an emergency or should the need arise to evacuate the entrant from the space, all instructions shall be issued by the rescue coordinator.

In the event that the entrant loses consciousness and/or fails to respond to a periodic check from the standby person at the entrance, the standby person shall immediately contact the rescue services by dialing 911. Rescue will be coordinated by the rescue coordinator.

- The space will be assumed IDLH until proven otherwise.
- Rescue personnel will enter the space only if they have been properly trained and are equipped to perform the rescue. All rescue personnel must be monitored by a standby person.
- If the hazard is a low risk, and the injured person is in no immediate danger, the rescue personnel will stabilize the victim and EHS and emergency response summoned.
- If the hazard is identified as high risk, the injured worker will be moved to a safe environment, stabilized and EHS and emergency response summoned.
- If the LEL is above 10% the space must not be entered. Any ignition sources must be shut off and all personnel removed from the area. The area must be secured and the fire department contacted immediately.
- Rescue Personnel will wear a full body harness and lifeline.
- There will be at least one rescue team member with an OFA first aid certification.

REMEMBER:

CONFINED SPACE RESCUE IN AN EMERGENCY SITUATION DEMANDS DELIBERATE THOUGHT AND ACTION. YOU ARE OF NO USE TO THE VICTIM IF YOU ARE OVERCOME IN THE SAME WAY AS THE VICTIM. YOU MAY BE THE PERSONS ONLY CHANCE OF SURVIVAL. DO NOT JEOPARDIZE HIS LIFE AND YOURS BY RASH ACTIONS.

FIRST AID

The first aid rules to follow if a person loses consciousness or is otherwise unresponsive in a confined space are as follows:

1. Do not enter the space yourself, or allow anyone else to enter the space for any reason!
2. Dispatch someone to contact emergency confined space entry services immediately.
3. If the lifeline and harness have become detached and/or entangled, direct the air venting hose to as close to the victims face so as to supply the victim with as much oxygen as possible.
4. If the lifeline and harness are intact and not entangled, engage the crank of the self-retracting life-line (SRL) and begin to raise the person up towards the opening of the confined space; generally the manhole opening.
5. If you cannot hoist the victim out of the space and into fresh air, direct the air venting hose to as close to the victims face as possible so as to supply the victim with as much oxygen as possible and wait for help to arrive to effect rescue.
6. If you can hoist the victim out of the space and into fresh air, do so.
7. Once safely away from the opening of the confined space, detach the lifeline and carefully lay the victim on the ground.
8. Check if the victim is breathing.
9. If the victim is breathing, keep them warm and comfortable until help arrives. Continue to monitor pulse and breathing. Apply oxygen if available.
10. If breathing has stopped, apply artificial respiration until breathing is restored.
11. If breathing cannot be restored, continue resuscitation until qualified personnel are in control of the situation
12. If emergency personnel cannot be contacted, once stable, transport the victim to the nearest medical facility (doctor, hospital, etc)

ENTRY SITE SET-UP CHECKLIST

- Confined Space Rescue Protocol in Place
- Safe Parking
- Traffic Control
- Posting of Area
- Hazard Assessment
- Tripod
- Lifelines
- Ventilation fans and ducting
- Check PPE and complete PPE section of permit.
- Complete pre-entry information on entry permit.
- Workers, standby personnel and supervisor sign entry permit.
- Perform pre-entry atmospheric tests and record results and time on permit.
- Start ventilation of space
- Re-test atmosphere and record results and time on entry permit.
- Establish standby station and enter space.
- Continuously ventilate space while working.
- Continuously monitor atmosphere while working in space.
- Re-test before any re-entry.

GLOSSARY OF TERMS

Asphyxia

The extreme condition caused by lack of oxygen and excess of carbon dioxide in the blood, produced by interference with respiration or insufficient oxygen in the air; suffocation.

Asphyxiant

A substance, such as a toxic gas, or an event, such as drowning, that induces asphyxia.

CFM

Cubic Feet per Minute

EHS

Emergency Health Services

IDLH

IDLH is an initialism for Immediately Dangerous to Life and Health, and is defined by the NIOSH as exposure to airborne contaminants that is "likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment." Examples include smoke or other poisonous gases at sufficiently high concentrations.

LEL

The explosive limit of a gas or a vapour, is the limiting concentration (in air) that is needed for the gas to ignite and explode. There are two explosive limits for any gas or vapor, the lower explosive limit (LEL) and the upper explosive limit (UEL). At concentrations in air below the LEL there is not enough fuel to continue an explosion; at concentrations above the UEL the fuel has displaced so much air that there is not enough oxygen to begin a reaction. Concentrations of explosive gases are often given in terms of percent of lower explosive limit (%LEL).

Non-permissible Atmosphere

The atmosphere has been deemed unsafe for confined space entry.

OFA

Occupational First Aid

PPE

Personal Protective Equipment

PPM

Parts per Million

Permissible Atmosphere

The atmosphere is deemed safe for confined space entry

Incident & Accident Reporting Policy

Mar-Tech Underground Services Ltd.

This policy was adapted from Craig Rowe's "Incident and Accident Reporting"
Updated by: Jason Roy September 11, 2008

INCIDENT & ACCIDENT REPORTING POLICY

Definitions

Accident – An event that results in harm to people, damage to property or equipment, or loss of process or productivity.

Incident – An event that, under slightly different circumstances, could have resulted in harm to people, damage to property or equipment, or loss of process or productivity. Examples include a slip and fall that did not result in an injury, or nearly backing into a pedestrian with a motor vehicle. Sometimes an incident is referred to as a “near-miss.”

Preventable – It is becoming an accepted belief in safety and risk management that all accidents are preventable. This means that for every accident or incident there is something that could have been done to avoid it.

Incident and accident reports are valuable because:

- They capture complaints, accidents and incidents before they become claims.
- They help establish a defense for claims that may be presented years after an incident/accident.
- They serve as the basis for analyzing the causes of incidents and accidents and for recommending risk improvements to prevent similar events in the future.
- They help identify weaknesses in your current risk management policies and procedures to prevent more serious losses from occurring.

Risk Management: Incidents

1. If an incident occurs, attend to those involved to ensure there are no injuries.
2. Complete an incident report (sample below). Incident reports should include at least:
 - names and contact information of the reporter and witnesses;
 - a detailed description of the incident; and
 - recommendations to prevent similar incidents in the future.
3. Contact your insurance representative for advice on whether an incident should be reported to the insurer. Incidents are often reported even if a claim may not come out of them.
4. Keep the report on file:
 - Documentation should be kept for as long as necessary to defend against potential claims. The length of time that legal action may be taken by law is called the Statute of Limitations.

Key Point

Having accident and incident procedures and forms is an essential part of an effective risk management program.

Key Point

Tracking accidents and incidents is an excellent way to identify areas of concern that are in need of risk management solutions.

- If the reporter is an adult, keep the incident documentation on file for at least three to five years **after** the Statute of Limitations passes for that type of claim. Your lawyer should be able to advise how long this is.
- If the reporter is a minor, keep the incident documentation on file for at least three to five years **after** the Statute of Limitations passes for that type of claim once the minor has reached the age of majority. Your lawyer should be able to advise how long this is.

- An efficient method of organizing and storing incident reports is in an electronic database where they can be sorted and retrieved based on a number of factors.
5. Review the report to determine the cause of the incident and any loss prevention measures that could be implemented.

Risk Management: Accidents

1. Attend to any persons involved.
2. If necessary, move yourself and injured persons out of any areas of immediate danger such as fire or traffic.
3. Administer first aid if necessary. Only administer the level of first aid that you are qualified to perform.
4. Do not admit liability or promise to pay for expenses incurred by injured persons.
5. Call or ask a bystander to call 9-1-1 or the emergency number for police, ambulance and/or fire department if necessary. Do not leave the scene of the accident unless it is to call one of those services.
6. Protect any damaged property or evidence from further damage (as long as the protection is at a reasonable cost). As an insured, it is your duty to minimize the damage to the extent possible.
7. Complete an accident report (sample below). The accident report should include at a minimum:
 - names and contact information for the reporter and witnesses;
 - a detailed description of the accident; and
 - a description of injuries and property damage.
8. Promptly notify your insurer of the possible claim. If an employee is injured, claims should be reported to WorkSafeBC.

Key Point

If an accident involves injuries or potentially involves injuries, report it to your insurance representative.

- Note the name of the person to whom you reported the claim. In the case of a dispute, this may be used to prove that the claim was reported.
9. Keep the report on file.
 - Documentation should be kept for as long as necessary to defend against potential claims. The length of time that legal action may be taken by law is called the Statute of Limitations.
 - If the victim is an adult, keep the incident documentation on file for at least three to five years after the Statute of Limitations passes for that type of claim. Your lawyer should be able to advise how long this is.
 - If the victim is a minor, keep the incident documentation on file for at least three to five years after the Statute of Limitations passes for that type of claim once the minor has reached the age of majority. Your lawyer should be able to advise how long this is.
 - An efficient method of organizing and storing incident reports is in an electronic database where they can be sorted and retrieved based on a number of factors.

Claims Handling

1. Reporting Claims

- a. If a claim is, or could become, greater than your deductible, is complex, involves injuries, or if you are in doubt, it is best to have the claim handled by your insurer. Your insurer is an expert at investigating and settling claims.
- b. The following are guidelines for dealing with your insurer:
 - i. If a reported incident/accident will likely result in a claim, submit a copy of the incident/accident report to your insurer.

- ii. If you receive a Statement of Claim from an injured party explaining the intent to make a claim against your organization, submit it to your insurer.
 - iii. If applicable, the adjuster will provide a Proof of Loss form to be completed to demonstrate that the organization has experienced a loss.
 - iv. Document all monetary costs related to the claim (repair work, hospital bills, lost income, etc.).
 - v. Cooperate and communicate often with your insurer while they are handling your claim.
2. Maintain a claims record (sample below)
- a. By keeping detailed records about claims you will be better able to track trends in loss causes, and the costs associated with them.
 - b. Keep simple records of premiums paid, additional charges and returned premiums.

Statement of Policy: Public Relations

Mar-Tech Underground Services Ltd.

This policy was last updated & approved by Mar-Tech September 11th, 2008

GENERAL STATEMENT OF INTENT

Mar-Tech Underground Services Ltd. - Occupational Health & Safety Program 2008

This policy statement is meant to indicate the overall philosophy of Mar-Tech Underground Services Ltd. with regards to how and why we must maintain an amicable public relationship at all times. The work done by Mar-Tech is almost always under either direct or indirect public scrutiny and as a contractor working within the parameters of a contract agreement with municipalities; we must maintain the same level of commitment to public service and relations that the municipality does.

It is the responsibility of all managers and employees to maintain a good relationship with the public in all circumstances, and to document and report all incidents, no matter how minor.

EMPLOYEE CONDUCT

If and when an employee encounters a public complaint, it is important to approach the situation using the following rules of conduct:

- **Listen to the person giving the complaint so they know they are heard.**
- **When you speak, do so in a calm, quiet voice.**
- **Remain tactful and respectful.**
- **If the person is speaking to you in a threatening or derogatory manner (calling names, etc) tell them politely that you cannot help them until they speak to you calmly and rationally.**
- **If the person continues to interrupt or will not listen to you, tell them you cannot help them unless they listen to you.**
- **If a person will not speak to you calmly and rationally, tell them you will give them the business card or phone number of your supervisor (see chain-of-command matrix below) and do so.**
- **NEVER swear or become aggressive.**
- **NEVER engage someone who is extremely angry.**
- **ALWAYS fill out an incident report after any incident that occurs.**
- **ALWAYS report to your supervisor after any incident occurs.**

TYPICAL PUBLIC COMPLAINTS

Some of the situations which you may encounter when conducting work are as follows:

Public complaints about:

- Noise.
- Water splashing from toilet during line cleaning.
- Worker conduct.
- Equipment location and parking.
- Changes to traffic pattern.
- Vehicle idling.
- Interruption of service.
- Damage to property.

Noise

Generally speaking the hours of work are considered to be 7:30AM to 7:00PM Monday to Friday. Noise generated by equipment, machines and workers during these hours are often a point of frustration for homeowners and the general public. At all times do what you can to minimize noise, and try to keep equipment and machines from residential areas during the early part of work hours if at all possible. If a complaint is raised, follow the general rules of conduct and make an attempt to move equipment away from the area where the complaint was issued.

Water splashing from toilet during line cleaning

Mar-Tech Underground Services Ltd. - Occupational Health & Safety Program 2008

Some sanitary lines are prone to back-pressure issues during flushing work. Typically shallow, smaller diameter lines are the most susceptible to back-pressure related issues. The operator is to use only the amount of pressure required to clean the line. In some cases, this still results in splashing of clean water as the p-trap in the toilet “gurgles” and clears. If a homeowner reports that this has occurred in their home, follow the rules of conduct and inform them that this is not a normal occurrence, but can happen in some systems. Tell them that it may be due to a problem with the grade in their service or in the sewer vent stack. It is a good idea if the homeowner is agitated to ask to go inside the home and view the extent of the water splashing. In most cases minor cleanup is all that is needed and the operator can offer to clean it up for the homeowner. In cases where an incident occurs, it is important that the operator contact the office and inform the Project Co-ordinator.

Worker conduct

Workers are to conduct themselves in a professional manner at all times. Depending on the severity of the perceived inappropriateness of the behavior witnessed, it could potentially be reported back to the client, the municipality, the police, supervisors, management and others. Inappropriate behavior will not be tolerated by management and will be punished. Such behavior can result in a lowered opinion of the company as a whole so it is the responsibility of everyone on-site to prevent inappropriate behavior from occurring. Some examples of inappropriate behavior that will not be tolerated are:

- Swearing or foul language
- Rude gestures
- Willful destruction or damage to private property
- Littering, including throwing garbage from vehicles and leaving work materials behind after works completed
- Trespass onto private property without consent.

Equipment location and parking

- When a piece of equipment, including work vehicles needs to be placed or parked where it may impede a homeowner from moving a vehicle in or out of their driveway, the employee is to attempt to contact the homeowner and request to park there prior to doing so. Contact should be made directly and verbal consent given. The homeowner should be told the following:
 - Why the equipment needs to be there
 - Approx. how long the equipment will be there
 - If possible, how long it will take to move the equipment if needed.
- Note that if contact with the homeowner cannot be made, the operator should be prepared to move the vehicle the homeowner returns and if requested, and do so in a timely fashion.

Vehicle Idling

More and more municipalities are putting Idling bylaws in place in order to reduce air and noise pollution. These bylaws limit the amount of time a vehicle can idle in place, but for some operations idling is necessary for the work to be possible. It is the responsibility of the contractor to be familiar with the specifics of such bylaws in municipalities they are contracted to work in, if not provided by the client

For example, as of January 2009, Metro Vancouver bylaw officers will have the authority to issue \$100 fines to truck drivers. Review the following article from cbc.ca for more information.

Idling bylaw targets Vancouver drivers

Last Updated: Tuesday, July 18, 2006 | 8:32 PM ET

CBC News

Drivers who leave their vehicles sitting idling in Vancouver for more than three minutes could face fines following the passage of a new city bylaw on Tuesday.

The anti-idling bylaw takes effect immediately, but enforcement won't begin for another six months.

Drivers of cars left idling for more than three minutes could be fined. (CBC)

City councillors say they see the bylaw as a tool that gives bylaw officers the chance to educate drivers on the problems associated with prolonged idling.

When the tickets are issued, car drivers will face fines of \$50 and truck drivers will be hit with fines of \$100.

The city hopes the bylaw will reduce emissions of greenhouse gases and other contaminants, while also reducing fuel consumption, noise and car theft.

The bylaw does not apply to emergency vehicles, buses that are loading or unloading passengers or armoured cars.

City officials say they expect most of the enforcement will happen through complaints from private citizens and businesses.

Changes to traffic pattern

There are times when equipment will affect the regular flow of traffic, and this can be a point of frustration with motorists. It is important that employees adhere to the B.C. Ministry of Transportation's guidelines for conducting works on public roads and highways at all times, and utilize traffic control personnel (TCP) as required. Even so, there will be occasions when motorists will become angry because of the deviation in traffic pattern and flow. It is critical to keep traffic moving through a worksite and TCP are trained to keep vehicles moving. If a vehicle stops in your worksite, do not engage them; keep them moving through at all costs.

Interruption of service

Wherever and whenever any interruption to service will take place, the homeowner must be notified a minimum of 24 hours prior. Municipal guidelines apply and must be adhered to as per the contract. Even so, homeowners and business owners may become frustrated by this lack of service and in some cases, the rental of portable washroom facilities may be required. This is not typical, as most interruptions are temporary and with notification can be worked around.

Damage to property

During certain works there is the risk of inadvertently causing damage to property. Some typical types of property and ways in which it can become damaged follow:

- Grass/Lawn
- Gardens
- Trees & bushes
- Other Landscaped areas
- Driveway
- Fences & walls
- Vehicles

If you accidentally cause damage to someone else’s property it is important that you attempt to make contact with the owner of the property and inform them of the damage done. If you cannot make contact with them directly, leave them a note and/or business card. Make sure you leave a brief description of the circumstances and provide accurate contact information. If possible, take photographs of the damaged property. These can become important evidence later on.

ORGANIZATION

This outlines the chain of command in terms of dealing with the public. If and when a complaint arises, the member of the public is likely to make the complaint to the first person they see on site. It is important that such complaints be deferred to the operator in charge of the site in all cases. When that contact cannot be immediately made, the employee is to report to the next person in the chain of command. Use the following matrix to determine who reports to whom:

Chain-of-command Matrix:

Public complaint made to:	Employee Reports to
Laborer	Operator in-charge of jobsite, senior operator
Operator	Field Supervisor (Ron Ferenczi) or Operations Manager (Jason Roy)
Field Supervisor / Operations Manager	Job coordinator (Bob Taylor or Bob Kennedy)
Job coordinator	Client or Municipal department head

REPORTING

It is the responsibility of the person immediately involved in the incident to complete a report immediately, or as soon after the incident has occurred as possible. If someone has been injured, after proper emergency response measures have been taken, an Accident Report must be filled out. A sample of Mar-Techs’ Accident Report can be found at the end of this document. If no-one was injured an Incident Report will suffice. A sample of a MTU Incident Report can also be found at the end of this document.

Completed reports should be submitted to a job co-ordinator or supervisor and a subsequent debrief and investigation should take place.

General Safe Work Practices

Mar-Tech Underground Services Ltd.

This policy was approved by Mar-Tech's Joint Safety Committee August 15, 2008
Updated September 11, 2008

OCCUPATIONAL HEALTH AND SAFETY POLICY

To all employees June 2, 2008

At Mar-Tech Underground Services Ltd. the safety and health of our employees is our first priority. The management at Mar-Tech Underground Services Ltd., hereafter to be referred to simply as Mar-Tech, is fundamentally interested in its employees' health and safety. It is a primary objective of management to protect our workers from injury and illness of all kinds.

To fulfill this commitment Mar-Tech will make every effort to provide and maintain a safe and healthy workplace by adhering to acceptable industry standards and complying with WorkSafe BC's Occupational Health and Safety regulations, policies, guidelines and standards. In keeping with occupational health and safety legislation, a healthy and safe workplace will be established and maintained through consultation and cooperation with management and employees.

Supervisors will be held accountable for the health and safety of workers under their supervision. Responsibility includes ensuring that machinery and equipment are safe and that work practices are in compliance with established legislation, workplace practices and procedures. To protect their health and safety, workers must receive adequate specific work task training.

Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

Contractors will be required to operate according to legislative requirements using best practices and following Mar-Tech Undergrounds Occupational Health and Safety Program, including all policies and procedures regarding health and safety.

Health and safety is an integral part of this organization's every day business. It is in the best interest of all to join together and put into practice health and safety principles in all work activities.

This policy will be reviewed on a minimum annual basis and revised as necessary.

Signed: _____ **Print Name:** _____

Date: _____

Notice to Crews & Visitors

PLEASE READ

All Mar-Tech Employees, outside workers and visitors must understand the following general safety requirements before proceeding to work in and around a Mar-Tech worksite.

- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

Thank you. Your compliance is critical in maintaining a safe workplace!

General Safe Work Practices

Policy

All Mar-Tech employees will be aware of and follow the below listed general safe work practices.

Procedures

1. You have the right to refuse work you believe is unsafe. WorkSafeBC OHS regulations state that:

“A person must not carry out or cause to be carried out any work process or operate or cause to be operated any tool, appliance or equipment if that person has reasonable cause to believe that to do so would create an undue hazard to the health and safety of any person.”

2. Prior to operation of any Mar-Tech vehicle, the operator will complete a pre-trip inspection, including completion and submission of hardcopy to mechanic Winston Norman. Note that different pre-trips are required depending on the vehicle being operated. The type of Pre-Trip required will be detailed in the Operators Safe Work Practices Guidelines if required for that vehicle. Do not operate a vehicle if you have not or cannot do a pre-trip, or if you determine in the course of your pre-trip that the vehicle is unsafe to drive.
3. All work related injuries or transmissible illnesses will immediately be reported via an Accident and Incident report to a supervisor or if unavailable the Occupational Health & Safety Officer. Employees will obtain authorization from their supervisor, prior to seeking medical attention for a work related injury or illness except in an emergency.
4. Injuries or illnesses not reported prior to the employee leaving for the day may result in a subsequent claim being questioned by WorkSafeBC, thus jeopardizing the employees' rights to compensation.
5. All employees must attend safety meetings and training sessions as determined necessary by Mar-Tech and/or WorkSafeBC.
6. Cooperation in employee accident investigation is mandatory of all employees who have knowledge about or have witnessed an accident.
7. Personal protective equipment (PPE) must be worn as required. Each employee is required to purchase and wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.

Below is a list of the PPE that is provided by Mar-Tech:

Standard Mar-Tech PPE:

- Protective gloves
- Ear plugs
- Eye protection
- Hard hat
- High visibility vest
- Coveralls (after probation)

First Aid PPE:

- Latex gloves
- Disinfectant
- Eye Protection
- Antibacterial wipes

8. Employees will only operate equipment that is in completely safe working condition. This is determined both by regular inspection, and also by the operator. The operator must be educated in the proper operation of the equipment. If equipment is not in safe working condition the employee is required to document this in writing to their supervisor and either the Health and Safety Officer and/or the Joint Safety Committee.
9. The use of alcohol and other non-prescription drugs is prohibited during work hours (with the exception of over the counter medications that will not effect a person's ability to work effectively/safely i.e. ibuprofen, aspirin, acetaminophen/Tylenol and remedies to alleviate allergy symptoms that do not cause excessive drowsiness). Prescription drugs that cause drowsiness and may affect the employee's ability to perform their job in a safe manner are prohibited. Employees who need to take this type of medication must either stay home until they complete the medication or bring a signed note from their health care provider stating that "this drug will in no way affect the employees' ability to satisfactorily perform the duties stated in their job description".
10. All work areas must be kept free from unsafe clutter and garbage. Each employee is responsible for safely and appropriately cleaning up any hazards that s/he has created.
11. All employees will correct any unsafe condition or practice when it is safe and in their authority to do so. If an employee is unsure about their authority to correct an unsafe condition they should immediately warn others of the hazard, make it off limits when/where possible and contact their supervisor for assistance.
12. Mar-Tech's facilities and vehicles are equipped with regularly maintained fire extinguishers, mounted in safe and easily identifiable locations.

Safe Work Practices CCTV Inspection

Mar-Tech Underground Services Ltd.

This policy was approved by Mar-Tech's Joint Safety Committee August 15, 2008
Updated September 11, 2008

OCCUPATIONAL HEALTH AND SAFETY POLICY

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Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

Contractors will be required to operate according to legislative requirements using best practices and following Mar-Tech Undergrounds Occupational Health and Safety Program, including all policies and procedures regarding health and safety.

Health and safety is an integral part of this organization's every day business. It is in the best interest of all to join together and put into practice health and safety principles in all work activities.

This policy will be reviewed on a minimum annual basis and revised as necessary.

Signed: _____ **Print Name:** _____

Date: _____

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- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

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CCTV Operator Safe Work Practices

Policy

Those Mar-Tech employees who will be operating on a CCTV Inspection truck must be aware of and follow the below listed safe work practices.

Procedures

1. You must have a copy of, and follow the procedures as laid-out in the General Workplace Practices Guidelines. The practices detailed herein are meant as a supplement to that set of guidelines.
2. Prior to operation of your CCTV Inspection vehicle, you must complete the AM section of your a Vehicle Inspection Checklist. At the end of the day, the PM component must be completed and the report is to be submitted mechanic Winston Norman. Never operate a vehicle if you have not or cannot do a pre-trip, or if you determine in the course of your pre-trip that the vehicle is unsafe to drive.
3. Personal protective equipment (PPE) must be worn as required. Each employee on a CCTV Inspection truck is required to purchase and wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.
 - Protective gloves
 - Ear plugs
 - Eye protection
 - Hard hat
 - High visibility vest
 - Coveralls (after probation)
4. The CCTV Inspection Operator is to conduct a Tailgate Safety Meeting with all Mar-Tech crews upon arrival and prior to commencement of works on each job and each worksite encountered.
5. CCTV Inspection Operators are required to attend Monthly General Safety Meetings
6. At least one member of the CCTV Inspection crew is to have a current, unexpired Occupational First Aid – Level 1 Certification.
7. The operator of the CCTV Inspection truck is to possess and have posted a list of emergency contacts in case of emergencies.
8. Each CCTV Inspection truck is equipped with a fully stocked First Aid Kit. It is the responsibility of the operator to maintain, restock and replace the First Aid equipment as necessary.
9. Each employee working on a CCTV Inspection truck to be trained to conduct inspection of all confined space entry equipment as needed.
10. Each employee working on a CCTV Inspection truck to be trained to conduct proper hazard assessments if needed.
11. Each employee working on a CCTV Inspection truck to be trained to conduct proper confined space entry procedures if needed.
12. Each employee working on a CCTV Inspection truck to minimize risk of stick injuries by removing burrs and points in steel cables and maintain equipment at a satisfactory level of cleanliness when stored in the truck.

13. If present on the CCTV Inspection truck, the operator is to maintain and routinely inspect his electric crane unit. The manufacturers' manual and inspection certificate must be stored with or near the crane or be readily available.
14. When working on electrical equipment, employees are to shut down electrical power to the unit, stop the generator and physically unplug electrical connectors to eliminate risk of electric shock.
15. The operator is to be familiar with and follow the equipment manufacturer's guidelines at all times.
16. Maintenance and repair work to the equipment, including the truck itself conducted only by employees properly trained and confident in its repair. If the operator is unsure, or incapable of conducting maintenance or repairs, he is to report the issue to a supervisor and defer the repairs/maintenance to mechanic, Winston Norman.
17. Installation and extraction of the camera equipment into and out of the access nodes (manholes) is to be conducted by the helper by him/herself only up to and including:
 1. Any size line with the push (mini) camera
 2. 21" diameter lines with the Ultra Shorty
 3. 15" diameter lines with the Steerable Pipe Ranger
 4. 15" diameter lines with the Buchan
18. The operator is to assist with the installation and extraction of the camera when it is set to:
 1. 24" diameter or more with the Ultra Shorty
 2. 21" diameter or more with the Steerable Pipe Ranger
 3. Any diameter with the Steerable MudMaster
 4. Any diameter with the LAMP camera
 5. 18" diameter or more with the Buchan

Safe Work Practices Cleaner-Flusher

Mar-Tech Underground Services Ltd.

This policy was approved by Mar-Tech's Joint Safety Committee August 15, 2008
Updated September 12, 2008

OCCUPATIONAL HEALTH AND SAFETY POLICY

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Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

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Signed: _____ **Print Name:** _____

Date: _____

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- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

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Cleaner-Flusher Safe Work Practices

Policy

Those Mar-Tech employees who will be working on a Cleaning/Flushing truck must be aware of and follow the below listed safe work practices.

Procedures

1. You must have a copy of, and follow the procedures as laid-out in the General Workplace Practices Guidelines. The practices detailed herein are meant as a supplement to that set of guidelines.
2. Prior to operation of the cleaning/flushing vehicle, the operator must complete a Pre-Trip Inspection, including completion and submission of hardcopy to mechanic Winston Norman. Never operate a vehicle if you have not or cannot do a pre-trip, or if you determine in the course of your pre-trip that the vehicle is unsafe to drive.
3. Personal protective equipment (PPE) must be worn as required. Each employee on a cleaner-flusher truck is required to purchase and/or wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.
 - Protective gloves
 - Ear plugs
 - Eye protection
 - Hard hat
 - High visibility vest
 - Coveralls (after probation)
4. The Cleaner-Flusher Operator is to conduct a Tailgate Safety Meeting with all Mar-Tech crews upon arrival and prior to commencement of works on each job and each worksite encountered.
5. Cleaner-Flusher Operators are required to attend Monthly General Safety Meetings
6. At least one member of the Cleaner-Flusher crew is to have a current, unexpired Occupational First Aid – Level 1 Certification.
7. The operator of the Cleaner-Flusher truck is to possess and have posted a list of emergency contacts in case of emergencies.
8. Each Cleaner-Flusher truck is equipped with a fully stocked First Aid Kit. It is the responsibility of the operator to maintain, restock and replace the First Aid equipment as necessary.
9. Cleaner-Flusher crews do not carry confined space entry equipment and are therefore unable and forbidden to conduct confined space entries unless the equipment is present and being used.
10. If the need arises, the cleaner crew is to notify and utilize the CCTV crew for confined space entry equipment.
11. Only a fully trained operator is to use the controls for water pressure, reel speed/direction control and other functions of the cleaning process.
12. The operator is not to exceed the water pressure recommended by the manufacturers' guideline.
13. The operator is to be familiar with and follow the manufacturer's guideline at all times.
14. The operator is to utilize equipment of an appropriate size for the pipeline diameter being entered to minimize or eliminate the risk of the equipment turning around on itself and coming back out of the pipeline and into the manhole.

15. Prior to any access of the pipeline by the cleaner crews with root-cutting, hub-cutting or any other equipment other than a water nozzle, the crew is to have the line inspected by a CCTV crew first to confirm that there are no line features that would present a problem to further cleaning work. Gas and hydro tap-ins, severe offsets and collapses, large holes and voids are all features that present a significant risk to cleaning work. If any of these are found to exist, all cleaning must desist immediately and the issue(s) be reported to the Field Supervisor for his recommendations.
16. Each employee working on a Cleaner-Flusher truck to be trained to conduct inspection of all confined space entry equipment as needed.
17. Each employee working on a Cleaner-Flusher truck to be trained to conduct proper hazard assessments if needed.
18. Each employee working on a Cleaner-Flusher truck to be trained to conduct proper confined space entry procedures if needed.
19. The operator is to be familiar with and follow the equipment manufacturer's guidelines at all times.
20. Maintenance and repair work to the equipment, including the truck itself conducted only by employees properly trained and confident in its repair. If the operator is unsure, or incapable of conducting maintenance or repairs, he is to report the issue to a supervisor and defer the repairs/maintenance to mechanic, Winston Norman.

Safe Work Practices Grouting

Mar-Tech Underground Services Ltd.

This policy was approved by Mar-Tech's Joint Safety Committee August 15, 2008
Updated September 12, 2008

OCCUPATIONAL HEALTH AND SAFETY POLICY

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- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

Thank you. Your compliance is critical in maintaining a safe workplace!

Grouting Safe Work Practices

Policy

Those Mar-Tech employees who will be working on a Grout truck must be aware of and follow the below listed safe work practices.

Procedures

1. The operator must have a copy of, and follow the procedures as laid-out in the General Workplace Practices Guidelines. The practices detailed herein are meant as a supplement to that set of guidelines.
2. Prior to operation of the Grout Truck, the operator must complete the AM section of the Vehicle Inspection Checklist. At the end of the day, the PM component must be completed and the report is to be submitted mechanic Winston Norman. Never operate a vehicle if you have not or cannot do a pre-trip, or if you determine in the course of your pre-trip that the vehicle is unsafe to drive.
3. Personal protective equipment (PPE) must be worn as required. Each employee on a Grout Truck is required to purchase and/or wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.
 - Protective gloves
 - Ear plugs
 - Eye protection
 - Proper respirator mask
 - Hard hat
 - High visibility vest
 - Coveralls (after probation)
4. The Grout Truck Operator is to conduct a Tailgate Safety Meeting with all Mar-Tech crews upon arrival and prior to commencement of works on each job and each worksite encountered.
5. Grout Truck Operator is required to attend Monthly General Safety Meetings
6. Each employee on a Grout Truck must be oriented and trained on the use, including the proper hook-up, testing and use of pneumatic (air-powered or driven) tools and equipment.
7. Only employees trained and competent in the safe handling, storage and mixing of grout chemicals are to be required to work with them.
8. At least one member of the Grouting crew is to have a current, unexpired Occupational First Aid – Level 1 Certification.
9. The operator of the Grout truck is to possess and have posted a list of emergency contacts in case of emergencies.
10. Each Grout truck is equipped with a fully stocked First Aid Kit. It is the responsibility of the operator to maintain, restock and replace the First Aid equipment as necessary.
11. Each employee working on a Service Cutter truck to be trained to conduct inspection of all confined space entry equipment as needed.
12. Each employee working on a Grout truck to be trained to conduct proper hazard assessments if needed.

13. Each employee working on a Grout truck to be trained to conduct proper confined space entry procedures if needed.
14. Each employee working on a Grout truck to minimize risk of stick injuries by removing burrs and points in steel cables and maintain equipment at a satisfactory level of cleanliness when stored in the truck.
15. All pneumatic (air-powered or driven) equipment is to be connected and/or disconnected with the air valve in the off position.
16. All pneumatic (air-powered or driven) equipment is to be connected and/or disconnected with the air valve in the off position.
17. If present on the Grout truck, the operator is to maintain and routinely inspect his electric crane unit. The manufacturers' manual and inspection certificate must be stored with or near the crane or be readily available.
18. When working on electrical equipment, employees are to shut down electrical power to the unit, stop the generator and physically unplug electrical connectors to eliminate risk of electric shock.
19. The operator is to be familiar with and follow the equipment manufacturer's guidelines at all times.
20. Maintenance and repair work to the equipment, including the truck itself conducted only by employees properly trained and confident in its repair. If the operator is unsure, or incapable of conducting maintenance or repairs, he is to report the issue to a supervisor and defer the repairs/maintenance to mechanic, Winston Norman.
21. Installation and extraction of the Grout equipment into and out of the access nodes (manholes) is to be conducted by a minimum of a two-man crew. When required, a third-man can be used by request for installing and extracting the grouting equipment.
22. In all cases where feasible, the electric crane is to be utilized for the lowering and raising of grout equipment into and out of the access nodes (manholes).
23. Grout Trucks pull double-duty as CCTV Inspection vehicles, so all crew workers on a Grout Truck must also abide by all safe work practices as outlined in the Operator Safe Work Practices - CCTV Inspection.
24. Installation and extraction of the camera equipment into and out of the access nodes (manholes) is to be conducted by the helper by him/herself only up to and including:
 1. Any size line with the push (mini) camera
 2. 21" diameter lines with the Ultra Shorty
 3. 15" diameter lines with the Steerable Pipe Ranger
 4. 15" diameter lines with the Buchan
25. A second helper or the operator to assist with the installation and extraction of the camera when it is set to:
 1. 24" diameter or more with the Ultra Shorty
 2. 21" diameter or more with the Steerable Pipe Ranger
 3. Any diameter with the Steerable MudMaster
 4. Any diameter with the LAMP camera
 5. 18" diameter or more with the Buchan

Safe Work Practices Liner Installation

Mar-Tech Underground Services Ltd.

This policy is a work in progress.

OCCUPATIONAL HEALTH AND SAFETY POLICY

To all employees June 2, 2008

At Mar-Tech Underground Services Ltd. the safety and health of our employees is our first priority. The management at Mar-Tech Underground Services Ltd., hereafter to be referred to simply as Mar-Tech, is fundamentally interested in its employees' health and safety. It is a primary objective of management to protect our workers from injury and illness of all kinds.

To fulfill this commitment Mar-Tech will make every effort to provide and maintain a safe and healthy workplace by adhering to acceptable industry standards and complying with WorkSafe BC's Occupational Health and Safety regulations, policies, guidelines and standards. In keeping with occupational health and safety legislation, a healthy and safe workplace will be established and maintained through consultation and cooperation with management and employees.

Supervisors will be held accountable for the health and safety of workers under their supervision. Responsibility includes ensuring that machinery and equipment are safe and that work practices are in compliance with established legislation, workplace practices and procedures. To protect their health and safety, workers must receive adequate specific work task training.

Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

Contractors will be required to operate according to legislative requirements using best practices and following Mar-Tech Undergrounds Occupational Health and Safety Program, including all policies and procedures regarding health and safety.

Health and safety is an integral part of this organization's every day business. It is in the best interest of all to join together and put into practice health and safety principles in all work activities.

This policy will be reviewed on a minimum annual basis and revised as necessary.

Signed: _____ **Print Name:** _____

Date: _____

Notice to Crews & Visitors

PLEASE READ

All Mar-Tech Employees, outside workers and visitors must understand the following general safety requirements before proceeding to work in and around a Mar-Tech worksite.

- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

Thank you. Your compliance is critical in maintaining a safe workplace!

Liner Installation Safe Work Practices

Policy

Those Mar-Tech employees who will be working on a Liner Installation Crew must be aware of and follow the below listed safe work practices.

Procedures

1. The boiler and bottom-end trailer operator must each have a copy of, and follow the procedures as laid-out in the General Workplace Practices Guidelines. The practices detailed herein are meant as a supplement to that set of guidelines.
2. Prior to operation of any liner installation vehicle, the operator must complete a Pre-Trip Inspection, including completion and submission of hardcopy to mechanic Winston Norman. Never operate a vehicle if you have not or cannot do a pre-trip, or if you determine in the course of your pre-trip that the vehicle is unsafe to drive.
3. Personal protective equipment (PPE) must be worn as required. Each employee on a liner installation crew is required to purchase and/or wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.
 - Protective gloves
 - Ear plugs
 - Eye protection
 - Hard hat
 - High visibility vest
 - Coveralls (after probation)
4. The Field Supervisor or his delegated stand-in is to conduct a Tailgate Safety Meeting with all Mar-Tech crews upon arrival and prior to commencement of works on each job and each worksite encountered.
5. Each liner installation crew member is required to attend Monthly General Safety Meetings
6. Each liner installation crew member must be oriented and trained on the use, including the proper hook-up, testing and use of pneumatic (air-powered or driven) tools and equipment.
7. Only employees trained and competent in the safe handling, storage and mixing of boiler chemicals are to be required to work with them.
8. Only employees trained and competent in the safe handling, storage and mixing of liner chemicals are to be required to work with them.
9. At least one member of the liner installation crew is to have a current, unexpired Occupational First Aid – Level 1 Certification.
10. The liner installation crew will have posted a list of emergency contacts in case of emergencies both at the boiler truck and at the bottom-end trailer.
11. Each of the following liner installation vehicles is equipped with a fully stocked First Aid Kit.
 1. The boiler trailer
 2. The bottom-end trailer
 3. Each of the support vehicles

It is the responsibility of the operator to maintain, restock and replace the First Aid equipment as necessary.

12. Each employee working on a liner installation crew to be trained to conduct inspection of all confined space entry equipment as needed.
13. Each employee working on a liner installation crew to be trained to conduct proper hazard assessments if needed.
14. Each employee working on a liner installation crew to be trained to conduct proper confined space entry procedures if needed.
15. Each employee working on a liner installation crew to minimize risk of stick injuries by removing burrs and points in steel cables and maintain equipment at a satisfactory level of cleanliness when stored in the truck.
16. All pneumatic (air-powered or driven) equipment is to be connected and/or disconnected with the air valve in the off position.
17. All pneumatic (air-powered or driven) equipment is to be connected and/or disconnected with the air valve in the off position.
18. If present on the liner installation vehicles, the operator is to maintain and routinely inspect the electric crane unit. The manufacturers' manual and inspection certificate must be stored with or near the crane or be readily available.
19. When working on electrical equipment, employees are to shut down electrical power to the unit, stop the generator and physically unplug electrical connectors to eliminate risk of electric shock.
20. The operator is to be familiar with and follow the equipment manufacturer's guidelines at all times.
21. Maintenance and repair work to the equipment, including the truck itself conducted only by employees properly trained and confident in its repair. If the operator is unsure, or incapable of conducting maintenance or repairs, he is to report the issue to a supervisor and defer the repairs/maintenance to mechanic, Winston Norman.
22. Installation and extraction of equipment into and out of the access nodes (manholes) is to be conducted by a minimum of a one-person crew. When required, a second or third person can be used by request for installing and extracting the equipment.
23. In all cases where feasible, the electric crane is to be utilized for the lowering and raising of equipment into and out of the access nodes (manholes).

Work in Progress. Ron Ferenczi to complete List of Written Instructions and Safe Work Procedures.

Safe Work Practices Liner Wetout

Mar-Tech Underground Services Ltd.

This policy is a work in progress.

OCCUPATIONAL HEALTH AND SAFETY POLICY

To all employees June 2, 2008

At Mar-Tech Underground Services Ltd. the safety and health of our employees is our first priority. The management at Mar-Tech Underground Services Ltd., hereafter to be referred to simply as Mar-Tech, is fundamentally interested in its employees' health and safety. It is a primary objective of management to protect our workers from injury and illness of all kinds.

To fulfill this commitment Mar-Tech will make every effort to provide and maintain a safe and healthy workplace by adhering to acceptable industry standards and complying with WorkSafe BC's Occupational Health and Safety regulations, policies, guidelines and standards. In keeping with occupational health and safety legislation, a healthy and safe workplace will be established and maintained through consultation and cooperation with management and employees.

Supervisors will be held accountable for the health and safety of workers under their supervision. Responsibility includes ensuring that machinery and equipment are safe and that work practices are in compliance with established legislation, workplace practices and procedures. To protect their health and safety, workers must receive adequate specific work task training.

Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

Contractors will be required to operate according to legislative requirements using best practices and following Mar-Tech Undergrounds Occupational Health and Safety Program, including all policies and procedures regarding health and safety.

Health and safety is an integral part of this organization's every day business. It is in the best interest of all to join together and put into practice health and safety principles in all work activities.

This policy will be reviewed on a minimum annual basis and revised as necessary.

Signed: _____ **Print Name:** _____

Date: _____

Notice to Crews & Visitors

PLEASE READ

All Mar-Tech Employees, outside workers and visitors must understand the following general safety requirements before proceeding to work in and around a Mar-Tech worksite.

- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

Thank you. Your compliance is critical in maintaining a safe workplace!

Liner Wetout Safe Work Practices

Policy

Those Mar-Tech employees who will be working on a Liner Wetout Crew must be aware of and follow the below listed safe work practices.

Procedures

1. The Liner Wetout Crew must have a copy of, and follow the procedures as laid-out in the General Workplace Practices Guidelines. The practices detailed herein are meant as a supplement to that set of guidelines.
2. Personal protective equipment (PPE) must be worn as required. Each employee on a cleaner-flusher truck is required to purchase and/or wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.
 - Protective gloves
 - Ear plugs
 - Eye protection
 - Hard hat
 - Coveralls (after probation)

Work in Progress. To be completed by Greg Spencer.

Safe Work Practices Service Cutter

Mar-Tech Underground Services Ltd.

This policy was approved by Mar-Tech's Joint Safety Committee August 15, 2008
Updated September 12, 2008

OCCUPATIONAL HEALTH AND SAFETY POLICY

To all employees June 2, 2008

At Mar-Tech Underground Services Ltd. the safety and health of our employees is our first priority. The management at Mar-Tech Underground Services Ltd., hereafter to be referred to simply as Mar-Tech, is fundamentally interested in its employees' health and safety. It is a primary objective of management to protect our workers from injury and illness of all kinds.

To fulfill this commitment Mar-Tech will make every effort to provide and maintain a safe and healthy workplace by adhering to acceptable industry standards and complying with WorkSafe BC's Occupational Health and Safety regulations, policies, guidelines and standards. In keeping with occupational health and safety legislation, a healthy and safe workplace will be established and maintained through consultation and cooperation with management and employees.

Supervisors will be held accountable for the health and safety of workers under their supervision. Responsibility includes ensuring that machinery and equipment are safe and that work practices are in compliance with established legislation, workplace practices and procedures. To protect their health and safety, workers must receive adequate specific work task training.

Every employee must protect his/her health and safety and the health and safety of other workers by working in compliance with legislation and established workplace practices and procedures.

Contractors will be required to operate according to legislative requirements using best practices and following Mar-Tech Undergrounds Occupational Health and Safety Program, including all policies and procedures regarding health and safety.

Health and safety is an integral part of this organization's every day business. It is in the best interest of all to join together and put into practice health and safety principles in all work activities.

This policy will be reviewed on a minimum annual basis and revised as necessary.

Signed: _____ **Print Name:** _____

Date: _____

Notice to Crews & Visitors

PLEASE READ

All Mar-Tech Employees, outside workers and visitors must understand the following general safety requirements before proceeding to work in and around a Mar-Tech worksite.

- Hard hats, CSA approved footwear and high visibility vests are required to be worn by all employees, workers and visitors to a Mar-Tech reline worksite, at all times.
- All employees, workers and visitors unfamiliar with a Mar-Tech worksite are to undergo a site orientation prior to entering the site and commencing work.
- All employees, workers and visitors to a Mar-Tech worksite must wear any and all personal protective equipment (PPE) deemed necessary by the senior operator, field supervisor or his delegated stand-in. Standard PPE include: coveralls, latex, nitrile or polyvinyl gloves, eye protection and ear-plugs.
- If the worksite is in the roadway or right-of-way, all traffic-related safety precautions must be observed.
- The worksite is a no smoking area and all employees, outside workers and visitors are prohibited from smoking within 15 Meters of the indicated work zone at all times.
- Employees are further prohibited from smoking within the work vehicles used to move to and from the site at all times.
- When someone arrives at or leaves the worksite, they are to check in with the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in prior to entering or leaving the site.
- All incidents requiring first-aid must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in.
- All incidents with the public must be reported to the senior operator, Field Supervisor (Ron Ferenczi) or his delegated stand-in. Mar-Tech Public Relations Policy must be adhered to at all times.
- Parking can be difficult on or around a worksite. Only park in designated areas as per the directions of the senior operator, Field Supervisor or his delegated stand-in.

Thank you. Your compliance is critical in maintaining a safe workplace!

Service Cutter Safe Work Practices

Policy

Those Mar-Tech employees who will be working on a Service Cutting truck must be aware of and follow the below listed safe work practices.

Procedures

1. The operator must have a copy of, and follow the procedures as laid-out in the General Workplace Practices Guidelines. The practices detailed herein are meant as a supplement to that set of guidelines.
2. Prior to operation of your service cutting vehicle, the operator must complete the AM section of the Vehicle Inspection Checklist. At the end of the day, the PM component must be completed and the report is to be submitted mechanic Winston Norman. Never operate a vehicle if you have not or cannot do a pre-trip, or if you determine in the course of your pre-trip that the vehicle is unsafe to drive.
3. Personal protective equipment (PPE) must be worn as required. Each employee on a cleaner-flusher truck is required to purchase and/or wear proper, CSA-approved steel or composite hard-toe boots at all times when working on or within Mar-Tech facilities or worksites. It is the responsibility of the employer to provide other necessary PPE equipment for completion of certain tasks, and to make the employee aware of such requirements.
 - Protective gloves
 - Ear plugs
 - Eye protection
 - Hard hat
 - High visibility vest
 - Coveralls (after probation)
4. The Service Cutter Operator is to conduct a Tailgate Safety Meeting with all Mar-Tech crews upon arrival and prior to commencement of works on each job and each worksite encountered.
5. Service Cutter Operator is required to attend Monthly General Safety Meetings
6. Each employee on a Cutter Truck must be oriented and trained on the use, including the proper hook-up, testing and use of pneumatic (air-powered or driven) tools and equipment.
7. Only employees trained and competent in the use of the tools required for cutting out the top, mid and tail sections of the MTU Soft Inverted liner will be required to do so.
8. At least one member of the Service Cutter crew is to have a current, unexpired Occupational First Aid – Level 1 Certification.
9. The operator of the Service Cutter truck is to possess and have posted a list of emergency contacts in case of emergencies.
10. Each Service Cutter truck is equipped with a fully stocked First Aid Kit. It is the responsibility of the operator to maintain, restock and replace the First Aid equipment as necessary.
11. Each employee working on a Service Cutter truck to be trained to conduct inspection of all confined space entry equipment as needed.
12. Each employee working on a Service Cutter truck to be trained to conduct proper hazard assessments if needed.
13. Each employee working on a Service Cutter truck to be trained to conduct proper confined space entry procedures if needed.

14. Each employee working on a Service Cutter truck to minimize risk of stick injuries by removing burrs and points in steel cables and maintain equipment at a satisfactory level of cleanliness when stored in the truck.
15. All pneumatic (air-powered or driven) equipment is to be connected and/or disconnected with the air valve in the off position.
16. All pneumatic (air-powered or driven) equipment is to be connected and/or disconnected with the air valve in the off position.
17. If present on the Service Cutter truck, the operator is to maintain and routinely inspect his electric crane unit. The manufacturers' manual and inspection certificate must be stored with or near the crane or be readily available.
18. When working on electrical equipment, employees are to shut down electrical power to the unit, stop the generator and physically unplug electrical connectors to eliminate risk of electric shock.
19. The operator is to be familiar with and follow the equipment manufacturer's guidelines at all times.
20. Maintenance and repair work to the equipment, including the truck itself conducted only by employees properly trained and confident in its repair. If the operator is unsure, or incapable of conducting maintenance or repairs, he is to report the issue to a supervisor and defer the repairs/maintenance to mechanic, Winston Norman.
21. Installation and extraction of the service cutting equipment into and out of the access nodes (manholes) is to be conducted by a minimum of a two-man crew. When required, a third-man can be used by request for installing and extracting the cutting equipment.
22. Cutter Trucks pull double-duty as CCTV Inspection vehicles, so all crew members of a Cutter Truck must also abide by all safe work practices as outlined in the Operator Safe Work Practices - CCTV Inspection.
23. Installation and extraction of the camera equipment into and out of the access nodes (manholes) is to be conducted by the helper by him/herself only up to and including:
 1. Any size line with the push (mini) camera
 2. 21" diameter lines with the Ultra Shorty
 3. 15" diameter lines with the Steerable Pipe Ranger
 4. 15" diameter lines with the Buchan
24. A second helper or the operator to assist with the installation and extraction of the camera when it is set to:
 1. 24" diameter or more with the Ultra Shorty
 2. 21" diameter or more with the Steerable Pipe Ranger
 3. Any diameter with the Steerable MudMaster
 4. Any diameter with the LAMP camera
 5. 18" diameter or more with the Buchan

Safe Work Practices Traffic Control

Mar-Tech Underground Services Ltd.

This policy is a Work in Progress and is currently under development by the MTU Joint Health & Safety Committee.

This document is taken from the online source:

<http://www2.worksafebc.com/Publications/OHSRegulation/Part18.asp>

Part 18 Traffic Control

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18.1 Definitions

In this Part:

"traffic control" means the use of signs, flashing arrow boards, sign boards, buffer or shadow vehicles, barricades, cones, barriers, detours, traffic lights, traffic control persons (TCPs) or other techniques and devices to manage the flow of traffic;

"traffic control person" or **"TCP"** means any person designated or assigned by the employer to direct traffic.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.2 Responsibility

The employer must ensure that effective traffic control is provided and used whenever traffic could be hazardous to a worker.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.3 Standards for traffic control

Traffic control equipment, arrangements and procedures must meet the requirements of the latest edition of the *Traffic Control Manual for Work on Roadways* (the "*Traffic Control Manual*") issued by the Ministry of Transportation, unless otherwise specified by this Regulation.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.4 Supervision

(1) The employer must ensure that whenever traffic control is required, all of the following requirements are implemented:

- (a) the traffic control arrangements and procedures for the work are made known to all the people involved in the work;
- (b) the required traffic control devices and procedures are in place before the start of work and are removed when they are no longer required;
- (c) any person assigned to be a traffic control person is adequately trained in a manner acceptable to the Board and effectively performs their role in the traffic control arrangements and procedures for the work;
- (d) a traffic control person is positioned in a safe location clear of potential environmental hazards such as a slide or avalanche;
- (e) if 2 or more traffic control persons are required to work as a team at the worksite, responsibility for coordination of changes in traffic flow is assigned.

(2) The employer must ensure that during traffic control operations a supervisor is designated to ensure the requirements of subsection (1) (b) to (e) are met.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.5 Placement of traffic control signs and devices

(1) Traffic control signs and devices must be positioned and used as specified in the *Traffic Control Manual* and signs and devices must be located so as to allow traffic to move by or through the work area in a controlled manner and, if necessary, to come to a controlled stop with due regard for the prevailing weather and road conditions.

(2) Unless otherwise specified, all traffic control signs and devices must be installed and removed in a sequence which best protects workers during this phase of a traffic control operation.

(3) A sign advising of a traffic control person ahead must be placed in advance of each traffic control person's station, and this sign must be removed promptly when a traffic control person is no longer on duty at that station.

(4) Subsection (3) does not apply during emergency or brief duration work when it is not practicable to place such a sign, provided that sight lines and traffic speed allow oncoming traffic adequate warning of the work activity taking place.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

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Traffic Control Persons (TCPs)

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18.6 Use of a traffic control person

(1) A traffic control person may be used only

(a) if the use of signs and other traffic control devices and procedures alone cannot provide effective traffic control, or

(b) during emergency or brief duration work if it is not practicable to control traffic with signs and other devices and procedures.

(2) Without limiting the generality of subsection (1), one or more traffic control persons must be used if

- (a) it is necessary to institute a one-way traffic system by or through a work zone and the circumstances do not allow self-regulating single lane traffic controlled by signs and other devices as specified in the *Traffic Control Manual*, and a traffic signal system is not used,
- (b) work-related traffic cannot safely self-regulate to move in or out of the work area or safely coordinate with other traffic,
- (c) an existing traffic control system, or an existing traffic signal light system, is not adequate to regulate traffic,
- (d) the work encroaches into an intersection so as to interfere with regular traffic movement,
- (e) traffic speed or volume is a hazard to workers while setting up or removing other traffic control devices, or
- (f) other traffic control devices are not available in an emergency situation.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.7 Traffic control person to remain on duty

The employer must ensure that a traffic control person is on duty at the assigned station whenever a traffic control person is required as part of the traffic control plan for the work.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.8 Location of traffic control persons

A traffic control person must

- (a) stand in a safe position, preferably on the driver's side of the lane under the TCP's control, be clearly visible, and have an unobstructed view of approaching traffic, and
- (b) be positioned at least 25 m (80 ft) away from the work area unless circumstances or space requirements, such as working at or near an intersection, dictate otherwise.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

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18.9 Operations during day time

Each traffic control person must be provided with, and must use, all of the following:

(a) a traffic control paddle meeting the requirements for a C-27H Traffic Control Paddle as specified in the *Traffic Control Manual* and, if necessary to control fatigue, a non-conductive support staff for the paddle;

(b) high visibility apparel meeting

(i) the Type 1 or Type 2 criteria of *WCB Standard Personal Protective Equipment Standard 2-1997, High Visibility Garment*, or

(ii) the Class 2 or 3 garment criteria of *CSA Standard Z96-02, High-Visibility Safety Apparel*, with a fluorescent background colour;

(c) wrist and lower leg bands fitted with a minimum 5 cm (2 in) wide fluorescent retroreflective strip about their entire circumference, except that wrist and lower leg bands are not required for a traffic control person performing this function on an emergency or a temporary basis and not as part of their normal duties;

(d) safety headgear of a high visibility colour with a strip of retroreflective tape across the top from front to back and on the sides;

(e) an effective means of communication when traffic control persons are not visible to each other, which under no circumstances means a system of passing batons or similar items to indicate the last vehicle traveling through the zone under control.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.10 Operations during night time or poor visibility

(1) During the hours of darkness, or in other conditions of poor visibility, each traffic control person must be provided with and must use, in addition to the equipment required by section 18.9, a flashlight fitted with a red signalling wand.

(2) For the purpose of subsection (1), the traffic control person must have immediate access to spare batteries for the flashlight.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.11 Equipment maintenance

All traffic control equipment and devices, including signs, traffic control paddles and personal protective equipment, must be kept clean and in working condition.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

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18.12 Precise motions

A traffic control person must make all traffic control directions and signals precisely and deliberately so that the meaning can be clearly understood.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.13 Standard signals between traffic control persons

If manual signals are used between traffic control persons to initiate changes in the direction of traffic flow, the signals shown in [Figure 18-1](#) must be used.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.14 Standard signals for traffic

(1) All traffic control directions and signals made by a traffic control person for the purpose of controlling traffic must conform to the requirements of this Regulation and the *Traffic Control Manual*.

(2) A traffic control person must use the normal signals shown in [Figure 18-2](#) when stationed on the driver's (left) side of the traffic lane under the TCP's control.

(3) The alternative signals shown in [Figure 18-2](#) must be used only when the traffic control person is stationed on the passenger's (right) side of the traffic lane under the TCP's control.

(4) A traffic control person must not use their traffic control paddle to wave traffic on and must never display the paddle to traffic in other than a static manner.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

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18.15 Dust control

If traffic causes airborne dust to the extent visibility is reduced and interferes with effective traffic control or creates a hazard to workers, the employer must control the dust by the periodic application of water or other acceptable material to the grade surface to suppress dust.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

18.16 Long periods of delay

If traffic control operations will result in long periods of traffic delay, appropriate signs or other effective means must be used to inform the traffic of the situation.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

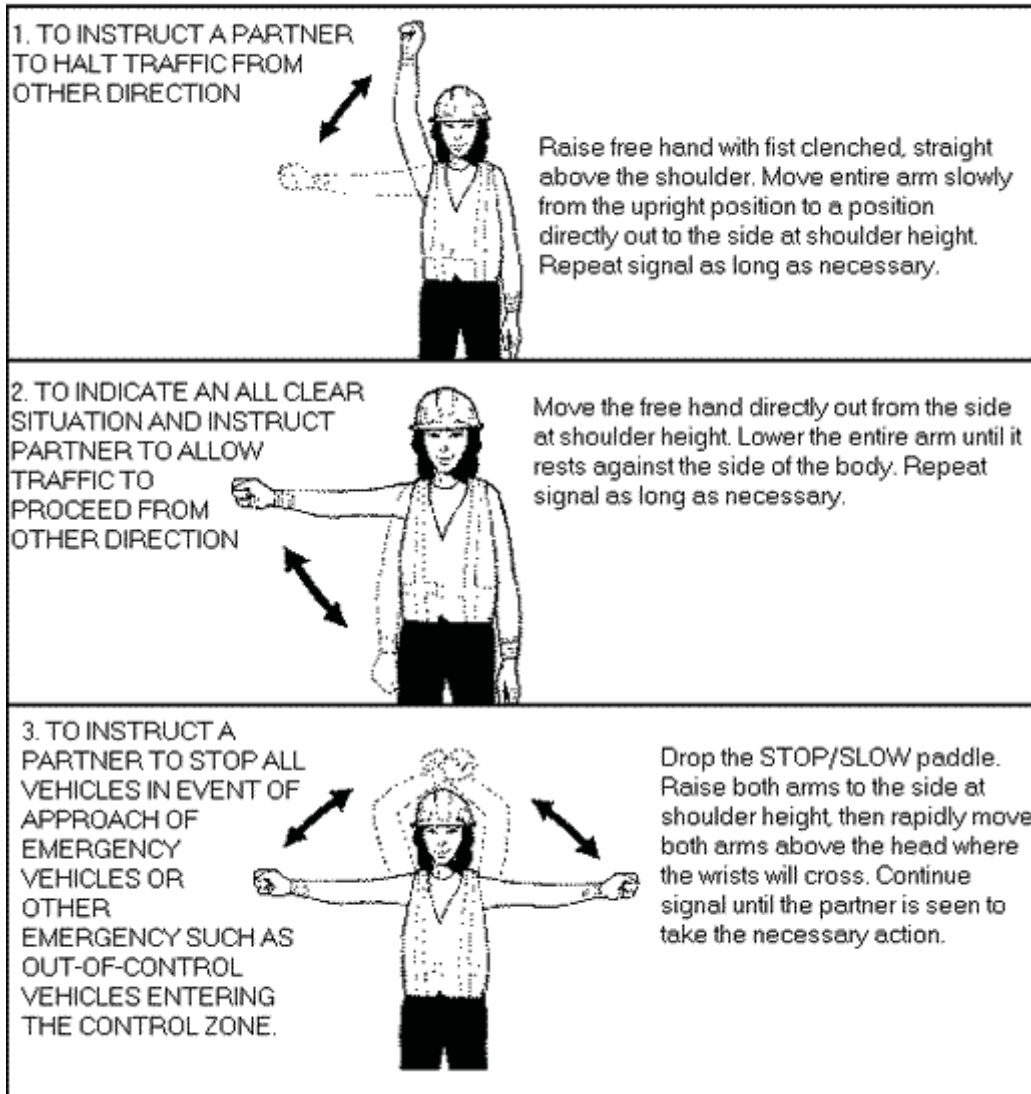
18.17 Towing and recovery operations

If the recovery of a disabled or damaged vehicle prevents the safe passage of other vehicles or if a passing vehicle is a danger to the workers engaged in the recovery operation, the person in charge must

- (a) warn traffic of the recovery operation by displaying appropriate signs and a 360° flashing light,
- (b) ensure that workers wear appropriate personal protective equipment, and
- (c) ensure that any other procedures required by the *Traffic Control Manual* are followed if the activity exceeds the limits for emergency or brief duration work.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

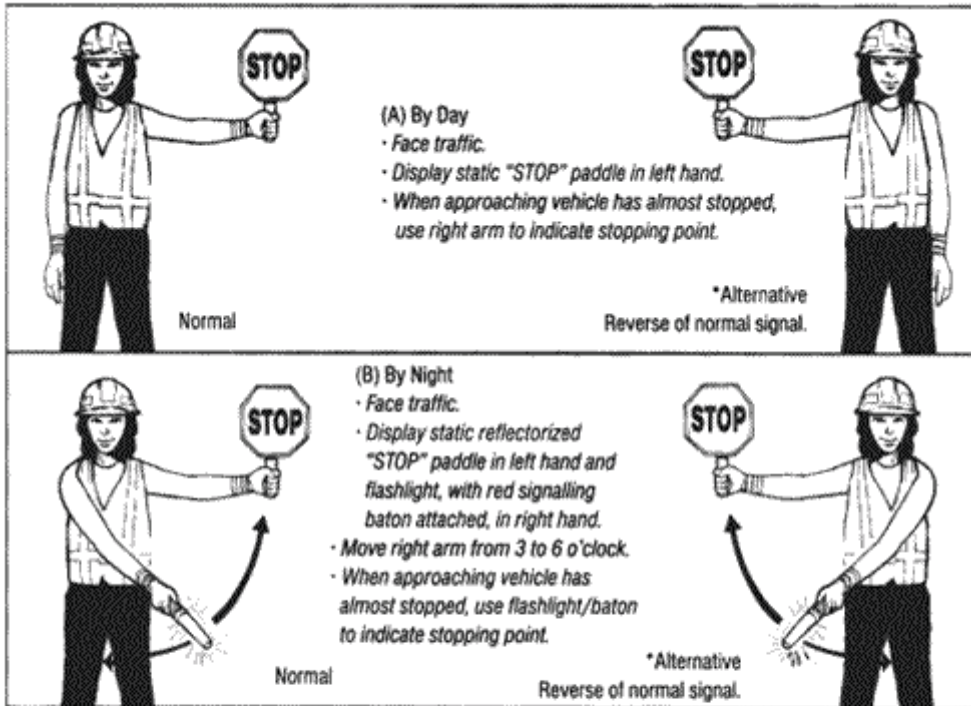
Figure 18-1: Arm signals between traffic control persons



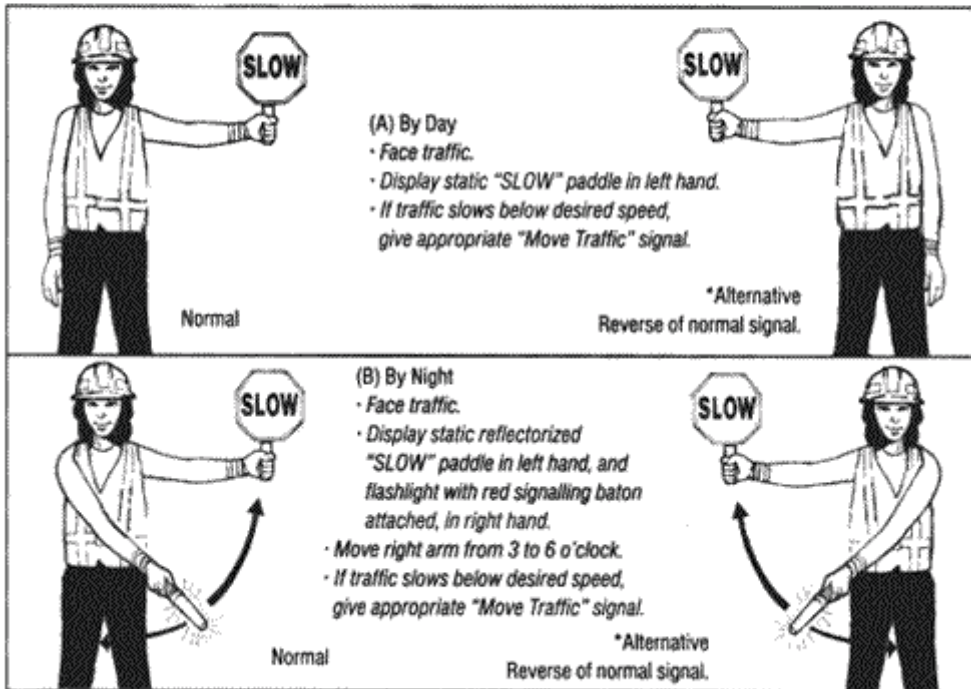
[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

Figure 18-2: Arm signals for traffic control

1 TO STOP TRAFFIC



2. TO SLOW TRAFFIC



*Use Alternative Signal only when traffic control person's station is located on the right side of traffic under his or her control.

Figure 18-2: Arm signals for traffic control (Continued)

3. TO MOVE TRAFFIC

<p>(A) Slowly by Day Normal</p>	<p>*Alternative Reverse of normal signal.</p>
<ul style="list-style-type: none"> · Face across the approach traffic lane and look across right shoulder at traffic to be moved. · Display static "SLOW" paddle in left hand. · Advance traffic by rotating lower right arm in an elliptical manner, in the direction vehicle wheels will rotate. 	
<p>(B) Slowly by Night Normal</p>	<p>*Alternative Reverse of normal signal.</p>
<ul style="list-style-type: none"> · Position as above (A). · Display static reflectorized "SLOW" paddle in left hand and flashlight, with red signalling baton, in right hand. · Advance traffic as above. 	
<p>(C) At Posted Speed by Day Normal</p>	<p>*Alternative Reverse of normal signal.</p>
<ul style="list-style-type: none"> · Position as for moving traffic slowly by day (A). · Lower left arm to conceal paddle and motion traffic on with right arm at shoulder level. 	
<p>(D) At Posted Speed by Night Normal</p>	<p>*Alternative Reverse of normal signal.</p>
<ul style="list-style-type: none"> · Position as above (C). · Hold flashlight, with red signalling baton, in right hand. · Motion traffic on as above (C). 	

*Use Alternative Signal only when traffic control person's station is located on the right side of traffic under his or her control.

[Enacted by B.C. Reg. 242/2006, effective January 1, 2007.]

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MAR-TECH UNDERGROUND SERVICES LTD - HAZARD ASSESSMENT REPORT

Date: _____ Time: _____ Location: _____

Job #: _____ Manhole: _____

Type of work: _____

Hazard Description		Hazard Present?		Possibility			Further Description
Type	Details	Yes	No	None	Low	Mod.	
Energy	Electrical						
	Pneumatic/ Hydraulic						
	Radiation						
	Oxygen Deficient						
	Oxygen Concentration						
Atmospheric	Flammable Gases						
	Carbon Monoxide						
	Hydrogen Sulfide						
	Other Gases						
	Engulfment/ Immersion						
Physical	Lifeline Entanglement						
	Inadequate Lighting						
	Vibration						
	Noise						
	Poor Visibility						
	Temperature Extremes						

Hazard Description		Hazard Present?		Possibility			Further Description
Type	Details	Yes	No	None	Low	Mod.	
Physical Con't	Slip and fall						
	Bio-infectious						
	Dropped tools/ equipment						
Other							

Crew:

Work Duties:

Other Comments & Remarks:

Hazard Assessment by (print):

Signature:

MAR-TECH UNDERGROUND SERVICES LTD. - CONFINED SPACE ENTRY PERMIT

JOB #: _____ GAS DETECTOR #: _____

LOCATION: _____ CREW: _____ SIGNATURE: _____

DATE: _____

LAST CALIBRATION / _____
 BUMP TEST: _____

PROCEDURE CHECK-LIST (ALL PROCEDURES MUST BE FOLLOWED - NO EXCEPTIONS)

- Confined Space Rescue Protocol in Place
- Safe Parking
- Traffic Control
- Posting of Area
- Hazard Assessment
- Tripod
- Lifelines
- Ventilation fans and ducting
- Check PPE and complete PPE section of permit
- Complete pre-entry information on entry permit
- Workers, standby personnel and supervisor sign entry permit
- Perform pre-entry atmospheric tests and record results
- Start ventilation of space
- Re-test atmosphere and record results and time on entry permit
- Establish standby station and enter space
- Continuously ventilate space while working
- Continuously monitor atmosphere while working in space
- Re-test before any re-entry

REASON FOR ENTRY	LOCATION (STREET)	MANHOLE #	GAS MONITOR READINGS				TESTERS INITIALS	TIME (24-HOUR CLOCK)
			OXYGEN (O2 %)	FLAMMABLE (FLAM %)	CARBON MONOXIDE (CO PPM)	HYDROGEN SULFIDE (H2S PPM)		

PPE & Safety Equipment (Check all used and in safe, working order)

- Gas Detector
- Ventilation Unit (Blower)
- First Aid Kit
- Harness
- Tripod
- Hard Hat
- Cover-alls
- Safety footwear
- Gloves
- Hearing Protection
- Eye Protection

Supervisor Signature

**INCIDENT REPORT
MAR-TECH UNDERGROUND SERVICES LTD.**

Date/Time of Incident: _____ : _____ am/pm _____ / _____ / _____

Date/Time Reported: _____ : _____ am/pm _____ / _____ / _____

Job No: _____ Client: _____

Specific Location: _____

Reporter Name: _____

Reporter Phone: office: _____ mobile: _____ home _____

Position: _____ Department: _____

Witness Name: _____

Witness Phone: office: _____ mobile: _____ home _____

Incident Description (Reporter):

Incident Description (Witness, if available):

Total MTU down time as result of incident (to 1/4 hour): _____

Other crews down time as a result of incident (circle one): Yes No

Total other crews down time as result of incident (to 1/4 hour): _____

Preventable (circle one): Yes No

Corrective Action:

Signature of Reporter: _____

Signature of Witness: _____

ATTACH PHOTOS HERE

**ACCIDENT REPORT
MAR-TECH UNDERGROUND SERVICES LTD.**

Date/Time of Incident: _____ : _____ am/pm _____ / _____ / _____

Date/Time Reported: _____ : _____ am/pm _____ / _____ / _____

Specific Location: _____

Reporter Name: _____

Phone Number(s): _____

Position: _____ Department: _____

Witness Name: _____

Witness Phone Number(s): _____

Accident Description (Reporter):

Accident Description (Witness, if available):

Police/Emergency Crews in Attendance (if applicable): _____

Property Damage (including name and contact information of owner, description and approx. amount):

Injury (including name of person, contact information, and injury description):

Signature of Reporter: _____

Signature of Witness: _____

ATTACH PHOTOS HERE

TAILGATE SAFETY MEETING

DAY: _____ **DATE:** _____ **TIME:** _____ (am/pm)

JOB NO: _____ **CLIENT:** _____

MEETING LOCATION: _____

FOREMAN: (print name) _____ **(signature)** _____ **(company)** _____

PPE Proper Personal Protective Equipment Required

- Hi-visibility reflector vest/hi-visibility coveralls
- Hard-toed boots
- Hard-hat
- Gloves
- Eye Protection (as needed)
- Hearing protection (as needed)
- Other _____

Traffic Safety

- Work area clearly marked with cones/delineators as needed
- Traffic control signs used to indicate changes to flow of traffic, closures, warn of worksite ahead as needed
- Directional arrow board, rotating beacon used when working on or near roadways as needed
- Additional traffic control personnel & equipment to be used as necessary in higher traffic areas, closures, etc
- General safety guidelines in low traffic area(s)
- General safety guidelines in moderate traffic area(s)
- General safety guidelines in heavy traffic area(s)
- Other _____

Confined space entry procedures

- Setup & stress test of tripod
- Check harness & manhole blower
- Check for last calibration date on gas detector
- Gas Detector Testing & recording of readings
- Other _____

Proper lifting techniques for:

- Manhole lids
- Catch-basin lids
- Other Equipment _____

Assess jobsite for hazards/potential dangers:

- PPE (Personal Protective Equipment) Required
- Toxic, poisonous, flammable gases or oxygen deficiency
- Moving motor vehicles & equipment
- Unstable ground materials
- Open pits, excavations and holes (including open manholes, CB's ,etc)
- Slippery or otherwise dangerous footing
- Buried or overhead electrical wires
- Danger of falling into body of water
- Risk of falling from height
- Other _____

Pedestrian/public safety

- Care taken to allow pedestrian routes to continue around jobsite safely
- Pedestrian route is clearly marked
- Personnel directing/assisting pedestrians around jobsite as needed
- Other _____

MEETING ATTENDEES:

Employee (print name) _____ (signature) _____ (company) _____

Employee (print name) _____ (signature) _____ (company) _____

Employee (print name) _____ (signature) _____ (company) _____

Employee (print name) _____ (signature) _____ (company) _____

Employee (print name) _____ (signature) _____ (company) _____

Employee (print name) _____ (signature) _____ (company) _____

MAR-TECH UNDERGROUND SERVICES

DAILY VEHICLE CHECKLIST

FORM TO BE COMPLETED IN AM PRIOR TO LEAVING SHOP AND SECTIONS MARKED TO BE RE-CHECKED AGAIN IN PM UPON RETURN. SUBMIT TO MECHANIC WINSTON NORMAN.

DRIVER: _____ DATE: _____ TIME: _____ am/pm

UNIT # _____ MILEAGE: _____ kms (LEAVING SHOP)

(*AM*) WALK-AROUND: (Note any damage to the truck, including windshield, panels, wheels, tires, etc**)**

(*AM*) SYSTEMS CHECK: (Open the hood and physically check fluid levels**)**

Lights:	TCP Equipment:
Headlights <input type="checkbox"/>	Signs - small <input type="checkbox"/> # _____
Brake sights <input type="checkbox"/>	Signs - Large <input type="checkbox"/> # _____
Turn signals <input type="checkbox"/>	Stands - Small <input type="checkbox"/> # _____
Hazards <input type="checkbox"/>	Stands - Wind Masters <input type="checkbox"/> # _____
Backup lights <input type="checkbox"/>	Delineators <input type="checkbox"/> # _____
Rotor lights <input type="checkbox"/>	Radio's <input type="checkbox"/> # _____
Arrow boards <input type="checkbox"/>	Flags <input type="checkbox"/> # _____
Oil level <input type="checkbox"/>	
Coolant level <input type="checkbox"/>	

(*AM & PM*) CAB INTERIOR:	AM		PM	
	yes	no	yes	no
Windshield Wipers - if no, specify below	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire Extinguisher - if no, specify below	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleanliness - if no, specify below	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(*PM*) RETURNED VEHICLE:	yes	no
Any vehicle damage that occurred on your shift - if yes, specify below (Accident/Incident form required):	<input type="checkbox"/>	<input type="checkbox"/>
Any lost, stolen or damaged equipment - if yes, specify below (loss form required):	<input type="checkbox"/>	<input type="checkbox"/>
Any truck systems malfunctions - if yes, specify below:	<input type="checkbox"/>	<input type="checkbox"/>

RETURNED TO SHOP: _____ MILEAGE: _____ kms TIME: _____ am/pm

FURTHER DETAILS:

Signature: _____ Print name: _____

NOTE: SMOKING IS NOT TOLERATED IN MAR-TECH VEHICLES AT ANY TIME!

JOB SITE INSPECTION CHECKLIST

Work Area	YES	NO
Is the immediate work area clear of excess materials or equipment?		
Are vehicle access doors clear of excess materials or equipment?		
Is the ground free of oil or grease?		
Is the ground dry?		
Are there overhead dangers?		
Are manholes properly covered when not in use?		

Traffic safety	YES	NO
Is the worksite adequately identified by traffic cones, signs, delineators, etc		
Are there Traffic Control Personnel on-site?		
Are the Traffic Control Personnel on-site adequate for the work being done?		
Does traffic have a clearly marked and safe path through or around the worksite?		
Do pedestrians have a clearly marked and safe path through or around the worksite?		
Was a traffic plan required for the worksite?		
Is there a copy of the Traffic Plan on-site?		
Was a lane closure request, highway use permit or other document required for the jobsite?		
Is there a copy of the lane closure request, highway use permit or other relevant documents on-site?		

Fire safety and security	YES	NO
Are fire extinguishers clearly marked?		
Are fire extinguishers properly installed?		
Have fire extinguishers been inspected within the last year?		
Are workers trained to use fire extinguishers?		
Are flammable liquids present?		
Are flammable liquids properly stored?		
Will space heaters shut off automatically when tipped over?		
Are emergency phone numbers close to phones?		

Stairs, ladders, and platforms (if none, select yes)	YES	NO
Are ladders safe and in good condition?		
Are stair handrails fastened to the wall securely?		
Are stairwells clear of materials and equipment?		
Are stairs and handrails in good condition?		
Are ladders and stairs provided with antislip treads?		

Lighting	YES	NO
Are lighting levels in work areas adequate?		
Are work areas free of glare or excessive lighting contrast?		
Is task lighting provided in areas of low light or high glare?		

Electrical	YES	NO
Are electrical cords in good repair?		
Is there clear access to electrical panels and switch gear?		
Are electrical cords secured?		
Are proper plugs used?		

Are plugs, sockets, and switches in good condition?		
Are ground fault circuit interrupters available, if required?		
Are portable power tools in good condition?		

Equipment and machinery	YES	NO
Is equipment and machinery kept clean?		
Is the equipment regularly maintained?		
Are operators properly trained?		
Are start/stop switches clearly marked and in easy reach?		
Is machinery adequately guarded?		
Is there enough work space?		
Are noise levels controlled?		
Are fumes and exhaust controlled?		
Do you have a lockout procedure in place?		

First aid	YES	NO
Is the first aid kit accessible and clearly labeled?		
Is the first aid kit adequate and complete?		
Is the first aid kit clean and dry?		
Are emergency numbers displayed?		

Garbage	YES	NO
Is the job site clear of rubbish and litter?		
Are there adequate numbers of garbage bins on-site?		
Are the garbage bins located at suitable points?		

Hazardous materials	YES	NO
Are Material Safety Data Sheets provided for all hazardous materials?		
Are containers clearly labelled?		
Are hazardous materials properly stored?		
Are hazardous materials disposed of properly?		

Environment	YES	NO
Is air quality good?		
Are workers protected from cool drafts or excessive heat?		
Are workers protected from excessive or irritating noise?		

General worker questions	YES	NO
Do workers know where to go and who to call for first aid assistance?		
Do workers know where to find MSDSs for chemical products?		
Do workers know where to find personal protective equipment (for example, disposable gloves, eye protection)?		
Do workers know how to use personal protective equipment?		
Do workers know the procedures for confined space entries?		
Do workers know the procedures for hazard assessment?		
Do workers know the procedures for confined space rescue?		
Do workers know the procedures for working alone?		
Have new/young workers received orientation specific to their workplace?		
Have workers received adequate training in safe work procedures?		

WORK VEHICLE INSPECTION CHECKLIST

Floors and walkways	YES	NO
Are floors and walkways in the vehicle clear of materials or equipment?		
Are vehicle doorways clear of materials or equipment?		
Are floor mats in good condition, not frayed or falling apart?		
Are floors clean and free of oil or grease?		
Are floors kept dry?		
If supplies or equipment are stored on the floor, are they away from doors and walkways?		

Fire safety and security	YES	NO
Is there a fire extinguisher mounted somewhere in the vehicle?		
Is the fire extinguisher properly installed?		
Has the fire extinguisher been inspected within the last year?		
Are workers trained to use fire extinguisher?		
Are flammable liquids present?		
Are flammable liquids properly stored?		
Will space heaters shut off automatically when tipped over?		
Are emergency phone numbers close to phones?		

Stairs, ladders, and platforms (if none, select yes)	YES	NO
Are ladders safe and in good condition?		
Are stair handrails fastened to the wall securely?		
Are stairwells clear of materials and equipment?		
Are stairs and handrails in good condition?		
Are ladders and stairs provided with antislip treads?		

Lighting	YES	NO
Are lighting levels in work areas adequate?		
Are work areas free of glare or excessive lighting contrast?		
Is task lighting provided in areas of low light or high glare?		

Equipment and machinery	YES	NO
Is equipment and machinery kept clean?		
Is the equipment regularly maintained?		
Are operators properly trained?		
Are start/stop switches clearly marked and in easy reach?		
Is machinery adequately guarded?		
Is there enough work space?		
Are noise levels controlled?		
Are fumes and exhaust controlled?		
Do you have a lockout procedure in place?		

First aid	YES	NO
Is there a first aid kit accessible and clearly labelled?		
Is the first aid kit adequate and complete?		
Is the first aid kit clean and dry?		
Are emergency numbers displayed?		

Garbage	YES	NO
Is the worksite clear of rubbish and litter?		
Are bins located at suitable points?		
Are bins emptied regularly?		

Hazardous materials	YES	NO
Are Material Safety Data Sheets provided for all hazardous materials?		
Are containers clearly labelled?		
Are hazardous materials properly stored?		
Are hazardous materials disposed of properly?		

Environment	YES	NO
Is air quality good?		
Are workers protected from cool drafts or excessive heat?		
Are workers protected from excessive or irritating noise?		

General worker questions	YES	NO
Do workers know where to go and who to call for first aid assistance?		
Do workers know where to find MSDSs for chemical products?		
Do workers know where to find personal protective equipment (for example, disposable gloves, eye protection)?		
Do workers know how to use personal protective equipment?		
Do workers know the procedures for confined space entries?		
Do workers know the procedures for hazard assessment?		
Do workers know the procedures for working alone?		
Do new/young workers receive orientation specific to their workplace?		
Do workers receive adequate training in safe work procedures?		

Other Comments & Notes:

WORKPLACE INSPECTION CHECKLIST

Floors and walkways	YES	NO
Are aisles clear of materials or equipment?		
Are main aisles at least 1 m (36 in) wide?		
Are doorways clear of materials or equipment?		
Are carpets or tiles in good condition, free of loose or lifting carpeting or tile?		
Are floors clean and free of oil or grease?		
Are floors kept dry?		
If supplies or materials are stored on the floor, are they away from doors and aisles and stacked no more than three boxes high?		

Fire safety and security	YES	NO
Are fire extinguishers clearly marked?		
Are fire extinguishers properly installed?		
Have fire extinguishers been inspected within the last year?		
Are workers trained to use fire extinguishers?		
Are flammable liquids properly stored?		
Will space heaters shut off automatically when tipped over?		
Are emergency phone numbers close to phones?		
Are smoke, fire, and burglar alarms in place?		

Stairs, ladders, and platforms	YES	NO
Are ladders safe and in good condition?		
Are stair handrails fastened to the wall securely?		
Are stairwells clear of materials and equipment?		
Are stairs and handrails in good condition?		
Are ladders and stairs provided with antislip treads?		

Walls	YES	NO
Are signs and fixtures securely fastened to the wall?		

Lighting	YES	NO
Are lighting levels in work areas adequate?		
Are work areas free of glare or excessive lighting contrast?		
Is task lighting provided in areas of low light or high glare?		
Are windows covered with blinds, drapes, or other means of controlling light?		
Does emergency lighting work?		

Storage	YES	NO
Are supplies and materials stored properly on shelves?		
Does your storage layout minimize lifting problems?		
Are trolleys or dollies available to move heavy items?		
Are floors around shelves clear of rubbish?		
Are racks and shelves in good condition?		

Electrical	YES	NO
Are electrical cords in good repair?		
Is there clear access to electrical panels and switch gear?		
Are electrical cords secured?		
Are proper plugs used?		
Are plugs, sockets, and switches in good condition?		
Are ground fault circuit interrupters available, if required?		
Are portable power tools in good condition?		

Computers	YES	NO
Are display screens free of dust?		
Are display screens bright enough with sufficient contrast?		
Are display screens positioned at a comfortable viewing level?		

Equipment and machinery	YES	NO
Is equipment and machinery kept clean?		
Is the equipment regularly maintained?		
Are operators properly trained?		
Are start/stop switches clearly marked and in easy reach?		
Is machinery adequately guarded?		
Is there enough work space?		
Are noise levels controlled?		
Are fumes and exhaust controlled?		
Do you have a lockout procedure in place?		

Entrances and exits	YES	NO
Is there safe access for workers and customers?		
Are emergency exits clear of materials or equipment?		
Are emergency exit signs working?		
Are emergency lighting units provided?		
Are they working?		

First aid	YES	NO
Is the first aid kit accessible and clearly labelled?		
Is the first aid kit adequate and complete?		
Is the first aid kit clean and dry?		
Are emergency numbers displayed?		

Chairs	YES	NO
Are chairs in good condition?		
Are chairs properly adjusted?		

Garbage	YES	NO
Are bins located at suitable points?		
Are bins emptied regularly?		

Hazardous materials	YES	NO
Are Material Safety Data Sheets provided for all hazardous materials?		
Are containers clearly labelled?		
Are hazardous materials properly stored?		
Are hazardous materials disposed of properly?		

Environment	YES	NO
Is air quality good?		
Are workers protected from cool drafts or excessive heat?		
Are workers protected from excessive or irritating noise?		

Parking	YES	NO
Are parking spots and walkways appropriately lighted?		
Are parking spots safe? (Names should not be painted on spots.)		
Are workers encouraged to use a buddy or escort?		
Is a speed limit posted on the parking lot?		

General worker questions	YES	NO
Do workers know where to go and who to call for first aid assistance?		
Do workers know where to find MSDSs for chemical products?		
Do workers know where to find personal protective equipment (for example, disposable gloves, eye protection)?		
Do workers know how to use personal protective equipment?		
Do workers know the procedures for working alone?		
Do new/young workers receive orientation specific to their workplace?		
Do workers receive adequate training in safe work procedures?		

Other Comments & Notes:
