

## HAZARD IDENTIFICATION AND CONTROL

### **Hazard Assessment**

Wellsite Geologists believes the best method of preventing injury or loss is by knowing what the potential hazards are. This is done in two ways:

- The first is a review of all common workplace and field tasks and hazards. This is completed annually and is completed with all affected workers.
- The second is at the work site level to identify existing or potential hazards. This hazard assessment must be done before work begins at the work site and prior to the construction of a new work site. It must be repeated at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions, when a new work process is introduced, or when a work process or operation changes.

The effectiveness of the hazard prevention program is evaluated, and, if necessary, revised:

- at least every three years;
- whenever there is a change in conditions in respect of the hazards; and
- whenever new hazard information in respect of a hazard in the work place becomes available.

### **Training**

Workers must understand the process to identify, reduce, and eliminate hazards within the workplace. This training will be on the job with workers with more experience leading to point out the more common hazards. Wellsite Geologists will provide health and safety education to each employee and address the following:

- How to properly fill out paperwork to ensure everyone is aware of the hazards and severity;
- When to stop work based on a severe hazard;
- The proper use and care of PPE;
- The hazard prevention program implemented to prevent hazards applicable to the employee, including the hazard identification and assessment methodology and the preventive measures taken by Wellsite Geologists;
- The nature of the work place and the hazards associated with it;
- The employee's duty to report; and
- An overview of the Act and Hazard Prevention Program Regulations.

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**Common Workplace Hazard Assessment**

Wellsite Geologists will, in consultation with and with the participation of the policy committee, or, if there is no policy committee, the work place committee or the health and safety representative assess workplace hazards.

Wellsite Geologists has developed, implemented and continues to monitor a program for the prevention of hazards in the work place. This program was developed with the participation of the work place committee and the health and safety representative, it is appropriate to the size of our work place and addresses the hazards we have. Our Hazard program includes the following components:

- an implementation plan;
- a hazard identification and assessment methodology;
- hazard identification and assessment;
- preventive measures;
- employee education; and
- a program evaluation.

All hazards in the work place have been identified and assessed taking into account:

- the nature of the hazard;
- the employees' level of exposure to the hazard;
- the frequency and duration of employees' exposure to the hazard;
- the effects, real or apprehended, of the exposure on the health and safety of employees;
- the preventive measures in place to address the hazard;
- any other relevant information.

The hazards are assessed using job hazard analysis' (JHA) that sets out the procedures, associated hazards (or what could go wrong) and control measures. The benefits of conducting a JHA are that previously undetected hazards may be identified, job knowledge and health and safety awareness of those participating will be increased, communication between workers and supervisors is improved, and acceptance of safe work procedures is promoted.

**Daily Hazard Assessment**

All affected workers, sub-contractors, visitors, and clients on site must participate in the daily hazard assessment prior to starting all work; if someone arrives late they must be informed of the information on the Hazard Assessment form. This can be done with team involvement, or singly if the job is to be done by one employee. All daily hazard assessments must include (in writing) documentation of workers names, date, hazards, controls, severity and probability. The daily hazard assessment allows for the opportunity to identify hazards which either have not been identified during a pre-job formal risk assessment, or hazards which arise or

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can arise when doing the work. Controls identified during the hazard assessment must be put into place before anyone starts work. If the work is deemed too hazardous it must be stopped immediately until proper controls can be put in place. Please fill out the Hazard Assessment form provided by Wellsite Geologists. The hazard assessment must be repeated if the workers change site locations or if hazards change.

A hazard at the workplace is any condition that has the potential to cause injury, illness or a loss. A hazard assessment conducted in the workplace is one of the most effective ways of ensuring a safe work environment. It is simply a careful look at what could harm workers or cause environmental damage at a workplace.

The benefits of conducting this written hazard assessment may include:

- Reducing the number and severity of incidents;
- Identifying the need for worker training;
- Identifying inadequate or missing procedures;
- Identifying the need for equipment maintenance;
- Reducing production losses and property damage; and
- Increasing worker involvement in health and safety issues.

### ***Hazard Identification***

During this process, individuals are able to identify potential hazards while evaluating equipment, machinery, work areas and activities. Once all potential hazards have been identified, they must be systematically prioritized with any imminent danger to workers being rectified prior to work commencing. Some examples of work site hazards include, but are not limited to:

- Slipping and tripping hazards;
- Fire from flammable substances;
- Oxygen deficient atmosphere;
- Harmful substances;
- Moving parts on machinery;
- Working at heights;
- Trenches/excavations;
- Pressure systems;
- Vehicles and equipment;
- Energized equipment (i.e., electricity, stored energy);
- Fumes;
- Lifting and handling loads;
- Poor lighting;
- Chemical storage/handling;
- Noise exposure;

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- Repetitive work; and
- Workplace violence.

Three commonly used methods to identify hazards are:

1. Physical inspections, both informal and planned;
2. Job Hazard Analysis (JHA) which includes breaking down workers actions into individual tasks, and identifying hazards involved with each task; and
3. Incident/accident investigation findings.

### ***Assessing Hazards***

Once these hazards and risks have been identified, individuals are better able to assess the potential risks and harm that could occur by the identified hazards. In assessing hazards it can be determined if adequate precautions have been taken and if more needs to be done (process changes need to be made).

All Employees must report any unsafe or harmful conditions including a list of potentially harmful substances found during the inspections if they cannot be fixed immediately.

At this stage hazards must be eliminated, isolated, or minimized. It may not always be practical to eliminate or isolate a hazard. In such cases these hazards must be minimized to an acceptable level through the development of Safe Work Practices, special training and personal protective equipment. Hazards that are identified at the worksite must be addressed immediately and mitigated.

### ***Controlling the Hazard***

If possible, all hazards must be eliminated. If the hazard cannot be eliminated then Engineering, Administrative and/or PPE controls must be put in place. Engineering controls are incorporated into the process itself, sometimes as part of the equipment. Substitution or isolation are both engineered methods. Administrative controls are used to minimize the exposure to a hazard by worker training and worker rotation. If the engineering or administrative controls do not achieve enough of a control then Wellsite Geologists must ensure workers affected by the hazard use the appropriate PPE. A combination of engineering, administrative and PPE controls may be the best method to achieve a greater level of worker safety.

#### ***Engineering Controls***

Engineering controls should be used first, if possible; they provide the highest degree of control because they eliminate or control the hazard at its source. The use of engineering controls includes:

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*Elimination:* Completely removing a hazardous job, tool, process, machine, or substance;

*Substitution:* Substituting or replacing one substance or process with another that would not pose a potential hazard;

*Redesign:* Hazards can often be "engineered out" through redesign of the work site, work processes, and jobs;

*Isolation:* Hazards can often be isolated through containment or enclosure;

*Automation:* Some processes can be automated or mechanized;

*Barriers:* Some hazards can be blocked or barricaded. The further the barrier keeps the hazard away from the workers, the more effective it is;

*Absorption:* Engineering controls that would absorb the hazard such as baffles that block or absorb noise; and

*Dilution:* Some hazards can be diluted or dissipated.

#### *Administrative Controls*

If engineering controls are not feasible or practical, then administrative controls are the next approach to controlling the hazard. The uses of administrative controls include, but are not limited to:

- Planning and communication;
- Safe Work Practices;
- Clients Safe Work Permits;
- Work/rest schedules limiting exposure to the hazard;
- Limiting hours of work;
- Scheduling hazardous work during times when exposure to workers is minimized;
- Monitors and alarm systems;
- Training;
- Safety meetings; and
- Posters and bulletins.

#### *Personal Protective Equipment*

Personal protective equipment (PPE) must always be used as a last resort in controlling hazards. PPE is less effective as a control as it does not eliminate the hazard. The PPE must be properly maintained and worn by workers.

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***Emergency Control of a Hazard***

In the event of an emergency (dangerous to the safety or health of workers) only those workers competent in correcting the condition, and the minimum number of workers necessary to correct the condition may be exposed to the hazard. Every reasonable effort must be made to control the hazard while the condition is being corrected.

***Hazard Reporting***

Once the Hazard Assessment has been completed, it must be updated regularly and as hazards change. If a hazard is noticed during the shift employees can report these hazards verbally to other Employees, but they must follow that verbal report with a written report once it is practical to do so. If the hazard is severe, work must be stopped and the hazards reassessed. Reports of hazards submitted to Wellsite Geologists must always be written.

A hazard report must include the following:

- Description of the *hazard* and its location;
- Time and date first noticed;
- The risk it presents;
- Control measures needed; and
- Interim actions taken, if any.

All hazards reported will be immediately investigated and controlled. A worker will be assigned to correct the hazard and a specific time or date will be given for completion.

Employees can submit their written reports in any format they wish. Wellsite Geologists must receive all written reports within 24 hours or sooner if immediate action is necessary.

***Written Job Hazard Analysis (JHA)***

We have created a list of tasks that we perform; some of those tasks have been assessed as critical. A task may become critical based on frequency, severity, or probability. This list is at the end of the manual and will be updated as new tasks are introduced. All tasks listed as critical will have a corresponding JHA completed with input of workers. The hazard identification process is used for routine and non-routine activities as well as new processes, changes in operation, products or services.

***Hazard Priority Ranking***

When a hazard assessment is started at Wellsite Geologists the hazards must first be identified, then classified or prioritized based on severity associated with the

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task or item. The first ranking estimates the severity of the problem if the potential accident/incident were to occur:

1. Imminent Danger (e.g. causing death, widespread occupational illness, loss of facilities)
2. Serious (e.g. severe injury, serious illness, property and equipment damage)
3. Minor (e.g. non-serious injury, illness, or damage)
4. Negligible/Ok (e.g. minor injury, requiring first aid or less)

The second ranking estimates the probability (think in terms of risk assessment) of the accident/incident occurring:

- A. Probable – Likely to occur immediately or soon
- B. Reasonably probable – likely to occur eventually
- C. Remote – could occur at some point
- D. Extremely remote – unlikely to occur

This manual contains safe work practices and JHA's that all employees must refer to.

Any tasks that may arise that are deemed to have hazards will be evaluated and rated prior to a safe work practice or JHA being compiled.

### ***Communication to Affected Workers, Bystanders and Visitors***

Wellsite Geologists will appoint a representative at every worksite to control access to individuals and ensure that workers affected by the hazards identified in a hazard assessment report are informed of the hazards and the methods used to control or eliminate the hazards.

### **Review Process**

All hazard assessments are reviewed periodically while on-site, then again by a supervisor. At Wellsite Geologists all hazard assessments are reviewed to ensure that a new hazard has not been created from the corrective measures put into place to prevent impact from another hazard.

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## Inspections and Monitoring Worksites

Work site inspections must be made at the first visit to any new jobsite in order to prevent the development of unsafe working conditions. Inspections must be performed by competent workers. Any unsafe or harmful conditions including a list of potentially harmful substances found during these inspections should be reported and told to all workers and any future employees sent to the site or if possible, fixed immediately. The person receiving the report must investigate the reported unsafe condition or act and must ensure that any necessary corrective action is taken without delay. The information collected at a work site inspection, must be reported on your Hazard Assessment form and communicated to everyone who comes onto your location.

Wellsite Geologists will maintain the following schedule of inspections (all inspections will be performed by the most senior person onsite):

- Office – Monthly
- Shop/yard – Monthly
- Worksite Inspections - prior to the commencement of each job and weekly thereafter
- Vehicle Inspections – Pre-Use (visual) and Weekly (documented)
- Equipment/Tools – Pre-Use

  
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President - Dennis Labrecque

May 14, 2013  
Date

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**Overview of Inspections**

Every work site contains hazards that must be identified and controlled to ensure worker safety. Regular inspections of the workplace and of work processes and procedures at the workplace are conducted to identify any risk to the safety or health of any person at the workplace. If a risk is identified, Wellsite Geologists will correct any unsafe condition as soon as is reasonably practicable and, in the interim, take immediate steps to protect the safety and health of any person who may be at risk.

Wellsite Geologists requires members of the committee or a representative, where one exists, to inspect the place of employment at reasonable intervals determined by the committee or the representative and Wellsite Geologists.

**Work Site Inspections**

Only by maintaining a constant frequency of inspections can hazards be identified and controlled before they become problems. Worksite inspections will be completed prior to the commencement of each job and weekly thereafter. This will allow Wellsite Geologists to make improvements to equipment, work procedures, training, and work site conditions, as necessary.

Work site inspections will focus on:

- Physical layout and conditions of the work site including location, terrain, season, and weather;
- Hazards associated with the materials handled;
- Condition of process equipment and tools;
- Condition of safety and personal protective equipment;
- Work practices and behaviour of people at the work site;
- Conformance and compliance issues; and
- Level and quality of supervision provided to workers.
- Slipping, tripping and falling hazards;
- Safety devices and monitoring systems;
- Lighting;
- Storage of controlled products;
- Faulty or missing emergency response equipment;
- Improper or missing warning hazard notification signs;
- Faulty machinery, cables, tie-downs, etc.;
- Housekeeping activities;
- Inadequate or missing safety and personal protective equipment;
- Firefighting capability;
- Flammable, corrosive, or explosive materials, etc.

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### **Vehicle Inspections**

#### *Commercial Vehicle*

All commercial vehicles must be inspected pre & post trip, and on an ongoing basis by the driver. A vehicle with a major defect must not be driven on a highway. The defect must be reported immediately to Wellsite Geologists. Wellsite Geologists must repair the defect prior to the vehicle being operated.

A driver may continue to drive a commercial motor vehicle if the commercial motor vehicle or trailer drawn by it has a minor defect, but only if he or she has entered the defect on the daily inspection report.

Drivers must monitor the condition of the vehicle they are driving, if a defect is noted it must be documented on the inspection form.

Records of the inspections must be kept in the vehicle. The duplicate copies must be sent to Wellsite Geologists to ensure the defects are repaired (this must be done even when no defect has been identified). The original inspection records must be forwarded to Wellsite Geologists within 20 calendar days of the completion of the report. Wellsite Geologists retains these reports and a certification that the repairs have been made for a minimum of 6 months from the date the report was prepared.

All Annual Inspections and Maintenance work will be complete by a Qualified Technician.

#### *Non- Commercial Vehicle*

All non-commercial vehicles and employee owned vehicles must be inspected, using the Vehicle Inspection sheet, on a weekly basis by the driver. All Annual Inspections and Maintenance work will be complete by a Qualified Technician.

### **Personal Protective Equipment Inspections**

All Personal Protective Equipment must be inspected before use. A documented monthly inspection will be performed by the wearer. All specialized PPE will be inspected by a qualified technician before use and at a frequency acceptable to the manufacturer.

### **Equipment Inspections**

All equipment must be inspected at a frequency acceptable to the manufacturer. Daily inspections will be completed by the person using the equipment (assisted by supervisor if not yet qualified); all complete inspections will be performed by a qualified technician.

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**Emergency and Fire Equipment Inspections**

All Emergency and Fire Equipment Inspections must be inspected at a frequency acceptable to the manufacturer. A monthly inspection will be completed by the Safety Coordinator during the Office Inspection. An annual inspection will be outsourced and completed by a trained, competent technician.

**Material Inspections**

All materials used are to be inspected prior to use. If a purchased material does not meet specifications it must be returned or not used (never try to repair a manufacturers' defect). Ensure that materials are correct for the job and meet the specifications of the job and Client; and that you are trained to work with the materials provided.

**Office /Shop Inspections**

The Safety Coordinator will complete a full office and shop inspection the first week of every month. A review of the previous month's issues should be completed prior to the inspection. Any deficiencies must be corrected within the next month (serious issues should be dealt with immediately), and documented on next month's inspection sheet.

***Inspection Reports***

Inspection reports will identify hazards and recommend appropriate control measures such as:

- Performing maintenance on equipment and vehicles;
- Marking hazards with signs, flags, lights, alarms, or barricades;
- Providing additional personal protective or other safety equipment to workers; and
- Informing workers of the hazards.

Wherever possible, hazards will be eliminated. If this is not possible, other control measures will be used such as developing specific operational procedures and/or wearing appropriate PPE.

***Follow-Up Action***

Deficiencies that have been noted in any inspection must be followed up by the Safety Coordinator. Any serious (high potential to cause injury) deficiencies must be repaired immediately.

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## Preventative Maintenance

It is critical to ensure that tools, equipment, personal protective equipment, vehicles, etc are maintained to prevent costly downtime and ensure ongoing safety.

The maintenance program is designed to reduce overall operating costs associated with vehicles or equipment that is out-of-service. The maintenance program provides for continuous and regular inspections, maintenance and repair. The active maintenance schedule at Wellsite Geologists does not take precedence over any repairs or service prior to the service date.

Any equipment used during normal work operations should be maintained in safe running condition. If any equipment is obviously faulty (H<sub>2</sub>S meter failed bump test, equipment will not turn on, etc) they must be taken out of service immediately. All equipment must be kept maintained and be safe to perform its intended task, adequate strength for its purpose and free from obvious defects.

This Preventative Maintenance Program will be maintained and include:

- Adherence to applicable legislation, standards, and manufactures' specifications,
- Using the services of appropriately qualified personnel, and
- Scheduling and documentation of all maintenance work.

  
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An inventory of all machinery/ equipment used at Wellsite Geologists has been established and is kept current. When new machinery or equipment is acquired, it must be added to the inventory.

#### *Defective Equipment*

Defects observed in machinery or equipment must be reported to a supervisor. All defective equipment at Wellsite Geologists must immediately be removed to protect the health and safety of any worker who may be at risk until the defect is corrected by a competent person, this must be done as soon as is reasonably practicable. Wellsite Geologists is responsible for ensuring that all defective equipment is removed from the worksite.

A Wellsite Geologists worker who knows or has reason to believe that equipment under the workers control is not in a safe condition will immediately report the condition of the equipment to Wellsite Geologists, and repair the equipment if the worker is authorized and competent to do so.

#### **Safety Equipment**

H<sub>2</sub>S meters and 4 head monitors must be calibrated at an accredited facility every 6 months. Bump testing will be performed prior to each job; records of each bump test will be kept in the box with each monitor. Please ensure you submit documentation to the safety coordinator each time a unit you are in possession of is calibrated. Record the location of the bump test, date and any concerns.

Any required maintenance will be performed before the monitor is worn.

#### **Tools and Equipment**

Ensure all tools are not worn or show signs or excessive wear. Any equipment used during normal work operations should be maintained in safe running condition.

#### **Rented/Third Party Equipment**

Ensure regular inspections and/or calibrations have been made on any rented or third party equipment. Please submit these records to the Safety Coordinator.

#### **Vehicle Maintenance**

The benefits of a vehicle maintenance program include:

- *Reduced Maintenance Costs* -- Minor adjustments and repairs made during regularly scheduled service checks help prevent unnecessary and costly repairs.

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- *Minimize Downtime* -- Preventive maintenance reduces interruptions to production caused by breakdowns.
- *Accident Prevention* -- Proper vehicle maintenance can reduce accidents caused by faulty brakes, tires, steering, and other major components.
- *Improve Driver Morale* -- When vehicles are kept in top condition drivers are more likely to handle the equipment with care.
- *Customer Relations* -- Clean, well maintained vehicles enhance the company image as a safety minded entity.

The following schedule will be used as a guide:

<b>Airfilter</b>	Check it periodically. Replace it when it becomes dirty or as part of a tune -up. It is easy to reach, right under the big metal 'lid', in a carbureted engine; or in a rectangular box at the forward end of the air in a duct hose assembly.
<b>Battery</b>	Extreme caution should be taken while handling a battery since it can produce explosive gases. It is advisable not to smoke, create a spark or light a match near a battery. Always wear protective glasses and gloves.
<b>Belts</b>	Inspect belts and hoses smoothly. Replace glazed, worn or frayed belts. Replace bulging, rotten or brittle hoses and tighten clamps. If a hose looks bad, or feels too soft or too hard, it should be replaced.
<b>Brake Fluid</b>	Check the brake fluid monthly. First wipe dirt from the brake master cylinder reservoir lid. Pry off the retainer clip and remove the lid or unscrew the plastic lid, depending on which type your vehicle has. If you need fluid, add the improved type and check for possible leaks throughout the system. Do not overfill.
<b>Engine Oil</b>	Check the oil after every fill up. Remove the dipstick, wipe it clean. Insert it fully and remove it again. If it is low, add oil. To maintain peak performance, the oil should be changed every 6,000 km or 3 months, whichever comes first. Replace the oil filter with every oil change.
<b>Exhaust</b>	Look underneath for loose or broken exhaust clamps and supports. Check for holes in muffler or pipes. Replace the rusted or damaged parts.
<b>Hoses</b>	Inspect the hoses monthly. If a hose looks bad, or feels too soft or too hard, it should be replaced.
<b>Lights</b>	Make sure that all your lights are clean and working, including the brake lights, turn signals and emergency flashers. Keep spare bulbs and fuses in your vehicle.
<b>Power Steering Fluid</b>	Check the power steering fluid level once per month. Check it by removing the reservoir dipstick. If the level is down, add fluid and inspect the pump and hoses for leaks.
<b>Shock Absorbers</b>	Look for signs of oil seepage on shock absorbers, test shock action by bouncing the car up and down. The car should stop bouncing when you step back. Worn or leaking shocks should be replaced. Always replace shock absorbers in pairs.
<b>Tires</b>	Keep tires inflated to recommended pressure. Check for cuts, bulges and excessive tread wear. Uneven wear indicates tires are misaligned or out of balance.
<b>Transmission Fluid</b>	Check transmission fluid monthly with engine warm and running, and the parking brake on. Shift to drive, then to park. Remove dipstick, wipe dry, insert it and remove it again. Add the approved type fluid, if needed. Never overfill.

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**Washer Fluid** Keep the windshield washer fluid reservoir full. Use some of it to clean off the wiper blades.

**Wiper Blades** Inspect the windshield wiper blades whenever you clean your windshield. Do not wait until the rubber is worn or brittle to replace them. They should be replaced at if worn or smearing occurs.

All work must be approved by management.

### **Qualifications**

Workers performing maintenance work will have the skills, accreditation or certification necessary. Copies of their certification must be delivered to the Safety Coordinator before they begin work.

### **Record Keeping**

Up-to-date records are an essential part of any maintenance program. Preventative maintenance performed on machinery or equipment must be documented and retained for the life of the machinery or equipment. Copies of all records are to be kept at the head office.

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