

Emergency Response Planning for Surface Mines



WSN recognizes that individual companies must develop health and safety policies and programs which apply to their workplaces and comply with appropriate legislation. The information contained in this reference material is distributed as a guide only to assist in developing those policies and programs.

While WSN cannot guarantee the absolute accuracy or sufficiency of this information, we will be pleased to respond to individual inquiries about this information at any time.

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Objective

The purpose of this guideline is to assist surface mining operations to:

1. Create an effective emergency response plan, or
2. Revise an existing plan

What is an emergency?

An emergency is any unforeseen event which has the potential to

1. Cause death or injury to employees, customers or members of the general public
2. Disrupt or shut down business operations
3. Physically damage equipment and/or the environment
4. Jeopardize a company's financial viability
5. Threaten a company's public image or reputation.

What is emergency management?

Emergency management is the process of:

1. Planning and preparing for an emergency
2. Organizing a response to an emergency
3. Recovering from an emergency

Why have an emergency response plan?

1. Preservation of life is always the first and most important goal of emergency response.
2. An objective of any plan is the protection of the health and safety of employees, emergency responders and the general public.
3. Emergency plans are required by legislation in Ontario (Reg. 854 Sections 25, 41; Reg.213 Sections 17, 18, 264 - please refer to the addendum for details)
4. In the event of a disaster it would be difficult to prove "due diligence" without proof of the prior existence of an emergency response plan and the equipment and training required.
5. An emergency response plan is intended to control losses to people, equipment, materials and environment (PEME) – the central tenet of loss control.
6. Having an emergency response plan and procedures can reduce a company's exposure to civil or criminal liability in the event of an incident and may reduce insurance premiums.

Nine Steps to developing an Emergency Response Plan

1. Establish a planning team

Demonstrate management's commitment to the project by appointing a competent team leader and authorizing the leader and the team he assembles to take the necessary steps to develop an emergency response plan. Management should provide the leader with expectations for deliverables and a deadline and budget, if required.

The size of the team charged with development or refinement of an emergency response plan depends on the company's location, operations and resources. An aggregate pit or quarry operation in a rural or remote location will have to be more self-reliant in the event of an emergency than one located close to supportive police, fire and medical services. Such variables will largely determine the nature and scope of the planning process.

The team may elect to meet with municipal and provincial government agencies, first response organizations and others to obtain information. Meetings will also be held with other company personnel such as JHSC members, worker safety and health representatives, engineers, maintenance, human resources, purchasing and others.

With management's directives and deadlines in mind, the team should also establish schedules and budget for their work and have these approved, if necessary.

2. Evaluate current plans, procedures and incident or drill records

A preliminary analysis of current emergency response plans and procedures provides a valuable benchmark to start the plan creation process. The team should also review records of the company's response to any previous emergency events or drills.

Documents to review:

- Health and safety policy
- Evacuation plan
- Fire protection and fire fighting plans
- Security procedures
- Mutual aid agreements with other companies
- Risk management plan

- Records from previous incidents and drills
- Environmental policies
- JHSC inspection records
- Minutes from JHSC meetings
- Accident investigation records
- Records of past meetings with first responders (fire, police, medical, etc.)

3. Identify hazards, estimate probability and assess potential impact on people, property and business

A good starting point is to create an inventory of emergencies which have or could have occurred in:

- Your facility
- The area adjacent to your facility
- The community
- The region

Include the following if appropriate:

- Fire
- Chemical spills and leaks
- Hazardous materials
- Extreme weather
- Explosion
- Electrical emergency
- Water hazards and floods
- Ground subsidence / runs of material
- Mobile equipment
- Conveyor emergencies
- Confined space
- Working at elevations
- Widespread illness or pandemic
- Other(s)

Take into account such factors as:

- Patterns of extreme weather such as heavy snow, freezing rain, drought, tornadoes, excessive rain
- Proximity to flood plains, seismic faults, dams, water tables
- Proximity to companies which produce, use, store or transport explosives or

other dangerous goods

- The state of the roads leading to and from your facility – are they ever impassable due to heavy snow or reduced visibility – what is the local accident frequency?
- For isolated operations, the availability of emergency transportation such as ambulance or helicopter
- Typical employee drive time to and from work
- Historical utility down time for telephone, cell phone, electricity, natural gas, municipal sewer and water service

A blank Vulnerability Analysis Chart has been included in the addendum. It uses a numerical scoring system to estimate impact. The safest condition is the one with the lowest score. An explanation of the process and a sample chart are included.

Estimate the probability of the emergency happening. Though this is a purely subjective rating the outcome is useful. What is the probability of the disastrous '98 Ice Storm happening again?

Using a scale of 1 to 5, assess the possibility of death or injury in the Human Impact column. How were humans affected by the ice storm?

Do the same thing for property impact. What affect did the ice storm have on property in Eastern Ontario? What was the impact in Quebec? Consider such things as costs for asset replacement or repair as well as the cost for temporary maintenance.

Evaluate Business Impact in the next column. Consider lost production and sales. How did the ice storm affect the maple syrup industry in Eastern Ontario and Quebec?

Finally, assess both internal and external resources and their ability to respond to an emergency. Are your own staff trained and equipped to respond to an emergency? Can and will first responders such as fire and police be able to come to your assistance effectively? The large number of vehicles caught on Highway 401 when the ice storm hit overwhelmed the ability of police, fire, ambulance and tow truck services to respond to the inevitable accidents.

Add the scores across the row to total the score for each emergency scenario. The lower the score the better. This isn't a scientific analysis but the results will help in planning your own company's approach to preparing for and dealing with emergencies.

4. Identify emergency resources

The location of the mine, pit or quarry will have a great deal to do with the emergency resources available and the time required for them to respond. Surface mines located near cities will have better and quicker access to resources than mines located in rural or remote locations.

More than listing telephone numbers in the emergency procedure, many companies maintain an active relationship with some or all emergency services, providing them with site plans, plant tours and notification when there are major changes to plant, process or materials. Many fire departments, for example, would welcome an opportunity to conduct a training session at a pit or quarry within their service area.

Resources include but may not be limited to:

- Fire: may be full-time professional fire fighters; part-time volunteer departments; company employees trained and equipped to fight fires
- Police: OPP; RCMP; municipal or First Nation police forces
- SAR – Search and Rescue: teams of trained and equipped volunteers prepared to search for missing persons or respond to other types of emergencies
- Medical: provincial or local ambulance service; hospital; local doctor; air ambulance; company employees trained and equipped to provide first aid
- Municipal government, public works department: may provide assistance with situations involving water, sewer, snow removal or other services – may already have plans in place for large scale emergencies
- Electrical utility: Ontario Hydro and/or municipal or regional electricity utility may provide assistance with situations involving overhead or underground power lines
- Natural gas utility may be required to assist with situations involving natural gas and related equipment
- Telephone utility may be required to provide assistance with situations involving telephone or related service or telephone equipment
- Fuel supplier and the Ontario TSSA may be required to provide assistance with situations involving fuel, fuel storage or fuel transfer
- Ministry of Labour may be consulted
- Ministry of the Environment: advice and assistance with situations involving release of materials into the air, water or ground
- ViCARS – Victim in Crisis Assistance Referral Service: A community-based response program to assist victims of crime or disaster

5. Review codes and regulations

Some emergency situations may be caused or complicated by failing to follow the dictates of one or more codes of practice. Legislation is in place to direct companies on procedures to follow and notification to be given in case of an emergency. Codes and regulations include but may not be limited to:

- National Fire Code: details fire prevention characteristics to be included in residential and commercial buildings as well as installation, testing and use of fire emergency systems
- Ontario Building Code: specifies acceptable practices for the construction of residential, industrial and commercial buildings
- Regulation 164 – Ontario Electrical Safety Code: Specifies acceptable practices for the specification, installation, use and maintenance of electrical systems
- The Explosives Act: federal legislation governing the manufacture, testing, sale, storage, transportation and importation of explosives
- Occupational Health and Safety Act: the basis of all health and safety legislation in the province of Ontario
- Regulation 854 – Mines and Mining Plants: health and safety legislation specifically relating to mines and mining plants
- Regulation 213 – Construction Projects: health and safety legislation specifically relating to the construction industry
- Regulation 851 - Industrial Establishments: some legislation may apply
- Regulation 1101 - legislation which specifies first aid procedures and supplies according to the size of the company
- Environmental Protection Act: legislation governing the control of materials which, if released, could harm the environment and the remediation of spills once they do occur
- Ontario Mining Act: legislation which regulates the establishment and operation of mines in the province
- Aggregate Resources Act and Regulations: legislation which regulates the establishment and operation of aggregate-based industries in the province
- Technical Standards and Safety Act: legislation governing all aspects of handling, storing and transporting fuels in Ontario.

6. Develop training programs

Everyone who works for the company requires some type of training. Even contractors and visitors may require some emergency response training and orientation.

Regulation 854 Section 41(3) states, “A suitable number of workers at each mine and mining plant shall be trained in the fire-fighting procedures and the names of such workers shall be posted in a conspicuous place; such workers shall be tested for proficiency at least once a year; and a written report of the results of the tests shall be made and kept on file.”

Training may include safety meetings, reviews of procedures, use of fire extinguishers, evacuation drills or full-scale disaster exercises. Some or all employees may be trained in first aid, CPR. WHMIS training is already mandatory.

Typically, a company will assign someone to be responsible for managing the emergency response training program. The training plan should speak to the following considerations:

- Who is to be trained
- Who will do the training; employees, contractors, community responders
- What training is required for all employees
- What training is required for specialist employees
- What training is required for contractors and their employees
- What orientation training is required for visitors
- How can members of the community first response teams be involved with the training programs
- How to evaluate training and re-training intervals
- The method of storing and the location of the training records

Training programs may include some or all of the following forms:

- Orientation, classroom and safety meeting sessions
- Tabletop exercises – members of the emergency management group meet to review their responsibilities and discuss appropriate reactions to various scenarios
- Drills – realistic exercises may include all aspects of an emergency response such as evacuations and medical events – community first response services may be involved

Due diligence requires the maintenance of complete training records for all personnel.

7. Develop a communication strategy

Effective communication is essential to report emergencies to first response support teams, employees, neighboring businesses and residences, the community, news media and other interested parties such as employees' families and company customers. Even a temporary communication disruption can have a serious effect on the response process. An Emergency Response Organization Chart can play a major role in maintaining effective communication especially during a crisis.

The first requirement is a means for alerting all personnel on the site to the emergency. A loud, open-air horn or siren may be effective for most people but operators inside cabs of mobile vehicles may not hear the warning especially if they have air conditioning running at the time. A general alert delivered on all working radio frequencies is effective. The system should be tested on a regularly-scheduled basis. The Ontario Office of the Fire Marshall recommends that each employee participate in a fire drill at least once per year. Employees should know where to go when the alarm is sounded.

Some notifications are required by law. A list of "Legislated Requirements for Incident Reporting" is included with this guideline as an addendum. Note that, in some cases, "immediate notification" is required. Someone on the emergency team should have responsibility for making reports as required by legislation.

Since many aggregate operations are in rural locations, the 911 Emergency Locator Number becomes a critical component of the notification sent to police, fire and medical first response providers. The Locator Number should be known to all employees, posted at all telephone locations and prominently displayed at the entrance to the operation.

Dealing with the news media at the time of an emergency situation can present a special challenge. Experts recommend only one trained person be allowed to brief the media on behalf of the company. Media representatives should not be given free access to the job site. They must be provided with PPE and escorted at all times for their own safety. Where possible, information for media distribution should be printed and distributed as a press release.

8. Write the plan

Every component of every emergency response plan requires the approval of some level of management. Plan development will proceed more smoothly and with fewer revisions if the approvals process and deadlines are established and understood beforehand.

Not everyone is capable of writing clear, concise copy. Encourage everyone participating in the actual plan development to record information in point form. The project leader should assign the writing tasks to those who are most knowledgeable about sections of the content. JHSC members and worker representatives must be included in the plan development process.

Working from your lists of probable emergencies and resources available, develop an approach to deal with the situations. Include a step-by-step procedure, and state who is responsible for taking which actions.

This is the time to be specific as to defining potential emergencies and the appropriate company responses. Please refer to the sample plan in the appendix for a plain language example of a direct approach.

Be sure to clearly mark interim materials as “Draft” and not for distribution. Including computer file names for each section of the plan helps to keep the material organized and offers a means of dating each revision for version control.

An editorial review of advanced plan materials by an editor who was not involved in the development or writing of the content will help to ensure consistency of presentation style while fixing annoying typographic and grammatical errors.

The approvals process should include critical review of the content and may result in one or more section revisions. This is the time to get these details right before the plan is published and put into effect. The plan should also include a process for information input and future plan upgrades as required.

Finally, with full management approval, the plan may be published.

9. Implement the plan

There are several aspects to plan implementation:

- Management can indicate its “buy-in” to the plan by adding a launch covering letter signed and dated by the most senior manager for the site or operation
- The employee introduction to the emergency plan may take place through safety meetings, orientation meetings or specific training programs
- Emergency preparedness information from the plan may be distributed or promoted through posters, bulletin board showings and employee newsletters
- Supervisors should make a habit of asking employees what they would do if a fire (explosion, hurricane, etc) occurred.
- Plan implementation should include a launch with police, fire, medical and other support services

Appendices

- 1. Legislated Requirements For Accident/Incident Reporting**
- 2. Vulnerability Analysis Chart and Sample**
- 3. Surface Emergency Response Checklist**
- 4. Sample Plan**

Legislated Requirements For Incident Reporting

**Note:
The following information was believed
to be current at time of publication.
However, WSN assumes no liability in connection
with the use of this information.**

Legislated Requirements For Incident Reporting

LEGAL REQUIREMENTS FOR REPORTING INCIDENTS						
Incident		Legislation Act/ Regulations	Requirement	In What Form	When	To Whom
Event	Result					
Any Incident	Death while on the job, on company business or non employee on company property.	Coroners Act S. 10	Report facts and circumstances relating to death. Inquest will be held.	Most direct means available	Immediately	Police or Coroner
Any Incident	Medical treatment required (includes death).	Workplace Safety & Insurance Act (WSIA) S. 21	Report extent of injuries and cause of accident.	Written Form 7	Within 72 hours	Workplace Safety & Insurance Board
			Assist physician in supplying diagnosis and treatment details to the WSIB.	Written Form 156	Prior to receiving medical treatment	To physician
Any Incident	Employee Death or Critical Injury , ie. A. life threatening. B. Unconsciousness. C. Severe bleeding D. Fractures other than fingers or toes. E. Amputation of leg, arm, hand or foot. F. Burns to major portion of body. G. Loss of sight. See O. Reg. 834 (RSO 1990)	Occupational Health and Safety Act S. 8(14) S. 9(31) S. 51 S. 52 S. 53 Reg. 834 Critical Injury Defined Reg. 854 S. 21(1)	Report occurrence and available details.	Verbal	Immediately	MOL Inspector, Joint Health and Safety Committee Representative or Health and Safety Representative, Trade Union
			Record details of accident, name and address of employer; injured; and physician	Written	Within 48 hours	Director of Occupational Health and Safety Division of the MOL.
			MOL will investigate.			
Any Incident	Medical attention required and the worker is disabled from performing normal work or occupational illness is reported.	Occupational Health and Safety Act S. 52 Reg. 854 S. 21(2)	Report details of event and investigation. Investigate to find conditions contributing to the accident. Take steps to prevent a reoccurrence if possible.	Written	Within four days	MOL Inspector, Joint Health and Safety Committee Representative or Health and Safety Representative, Trade Union. Director of Occupational Health and Safety Division of the MOL.
Any Incident	Medical attention required but worker not disabled.	Occupational Health and Safety Act , S. 53 Reg. 854 Section 21 (3,4,5)	Record details of event.	Written	Immediately	Retain records for review by Inspector.
Any Incident	First Aid only.	First aid Regulation (1101) S. 5	Record name, date, treatment or advice given to worker.	Written	Immediately	Records on file

LEGAL REQUIREMENTS FOR REPORTING INCIDENTS

Incident		Legislation Act/ Regulations	Requirement	In What Form	When	To Whom
Event	Result					
Worker reports <i>Industrial Disease</i>	Employee may be eligible for Compensation.	WSI Act S. 21	Report history of employee pertaining to causation of industrial disease.	Written Form 7	Within 72 hours	WSIB
<i>Recurrence of prior injury</i>	Employee disabled from doing usual work	WSI Act S. 21	Report details of recurrent injury.	Written Form 7 Form 156 Use original claim number	Within 72 hours	WSIB Physician
<i>Worker on Compensation returns to work</i>	Employee no longer eligible for same level of compensation, if any.		Report employee's return to work and details of pay and absence.	Written Form 9	As soon as possible	WSIB
Reportable Occurrence involving	A. Failure to hoist sheave, hoisting rope, shaft conveyance, shaft timber. B. Flammable gas present in underground mine C. Spontaneous heating with evolution of gas. D. Major failure or damage to equipment. E. Rockburst > 5 tonnes F. Uncontrolled fall of ground > 50 tonnes. G. Defective explosives. H. Dam or bulkhead failure. I. Run of material. J. Unexpected explosion. K. Flood. L. Fire.	OSHA S. 53 Reg. 854 S. 21 (5)	Report details of incident <ul style="list-style-type: none"> • What • When • Damage • Injuries MOL may investigate.	Written	Within two days	MOL district office

LEGAL REQUIREMENTS FOR REPORTING INCIDENTS

Incident		Legislation Act/ Regulations	Requirement	In What Form	When	To Whom
Event	Result					
Motor vehicle accident	Personal injuries or property damage in excess of \$1000	Highway Traffic Act S.199 Reg. 596 S. 11	Report occurrence. If non company vehicles involved or off company property.	Verbally	Immediately	Police
Contaminants (see Act) released to environment in excess of legal limits.	Injury, likely injury, or property damage even if no injury is likely.	Environmental Protection Act S. 15	Report occurrence and available details of event.	Most direct means available	Immediately	Ministry of the Environment
Spills of Contaminants	Injury, likely injury or property damage.	Environmental Protection Act S. 92	Report occurrence and available details of event.	Most direct means available.	Immediately	Ministry of Environment plus local municipality.
Pesticides released into environment.	Injury, likely injury or likely property damage.	Pesticides Act S. 29	Report occurrence and available details of the event	Most direct means available	Immediately	Director of the Ministry of the Environment
Discharge emission or escape of dangerous goods (see Act) or an emission of ionizing radiation in excess of AEC limits during transport.		Transportation of Dangerous Goods Act S. 18	Report occurrence and available details of the event.	Most direct means available.	Immediately	Inspector for the Ministry of Transport (Federal).
Explosion or rupture of boiler, pressure vessel or plant.	Death, injury or property damage.	Technical Standards and Safety Act Reg. 219	Report full details of incident	Most direct means available.	Within 48 Hours	Director of Technical Standards & Safety Authority.
Accidental fire or explosion due to spills or leaks when handling gasoline.		Technical Standards and Safety Act Reg. 217	Report occurrence and available details of event.	Telephone, FAX	Immediately	Inspector of Technical Standards & Safety Authority

LEGAL REQUIREMENTS FOR REPORTING INCIDENTS						
Incident		Legislation Act/ Regulations	Requirement	In What Form	When	To Whom
Event	Result					
Compressed Natural Gas	<ul style="list-style-type: none"> Asphyxiation CO poisoning Explosion Fire 	TSSA Reg. 214 S. 16	Report occurrence	Phone, FAX or other electronic communication	Immediately	Inspector
Propane	<ul style="list-style-type: none"> Asphyxiation CO poisoning Explosion Fire Accidental release Vent Spill 	TSSA Reg. 211 S.15	Report occurrence	Phone, FAX or other electronic communication	Immediately	Inspector
Gaseous Fuels	<ul style="list-style-type: none"> Asphyxiation CO poisoning Explosion Fire 	TSSA Reg. 212 S. 12	Report occurrence	Phone, FAX or other electronic communication	Immediately	Inspector
Fuel Oil	<ul style="list-style-type: none"> Asphyxiation CO poisoning Accidental release Leak Explosion Fire 	TSSA Reg. 213 S. 21	Report occurrence	Phone, FAX or other electronic communication	Immediately	Inspector
Elevators	<ul style="list-style-type: none"> Death or serious injury Injury Hazardous condition Fire 	TSSA Reg. 209 S. 36	Report occurrence	Telephone	Immediately	Director

Vulnerability Analysis Chart

This is a simple chart which anyone can use to evaluate the hazard exposure for a company. It is very subjective but valuable because it forces organization of thought and provides a simple measurement system. A blank form is provided here to photocopy. An example of a typical analysis for a surface mine is also included. The reasoning behind the selections follows:

Fire

Probability is rated as 3/5 because of fuel in vehicles and generator sets. The human impact of a vehicle or fuel fire could be serious (3/5), the impact on property very serious due to loss of equipment (5/5) and the loss of production and business also high (5/5). We don't have great on-site fire-fighting capability and nobody is trained to fight fires (2/5) and we're probably a 20-25 minute drive from the fire department. With a total score of 21, fire is our greatest risk.

Floods and Tornadoes

We're on high ground with no major water sources in the area. There has never been a tornado in this region. Our exposure to these two natural elements is low with total score of 10 and 15 respectively.

Vehicle Accident

We haven't had a serious accident yet but with customer trucks mixing with our vehicles and loaders all over the stockpile area the probability of having an accident is high (4). In an accident involving heavy equipment it's likely the operator(s) are going to be seriously injured (4). The equipment and business will suffer moderate losses (3) and (3). We aren't well prepared to respond in case of a vehicle accident of this nature (3) so we'd have to rely on external resources (police, fire, ambulance) which could take up to half an hour to get here (3). With a total score of 19, the potential for a vehicle accident is only slightly behind a fire (21).

Note:

You may or may not agree with the way this sample was compiled but you can see how the thought process, reasoning and scoring could work.

Vulnerability Analysis Chart

TYPE OF EMERGENCY	Probability		Human Impact	Property Impact	Business Impact	Internal Re-sources		External Re-sources	Total
	High 5	Low 1				Weak Re-sources 5	Strong Resources 1		
Fire	3		3	5	3	2	3	21	
Flood	1		1	2	2	2	2	10	
Tornado	1		4	1	1	4	4	15	
Vehicle Accident	4		4	3	3	2	3	19	

The lower the score the better

Surface Emergency Response Checklist

Emergency Response Plan

- Is there a written emergency plan? Yes___ No___
- Has it been updated within the past 12 months? Yes___ No___
- Have there been operational changes that affect the plan since the last update? Yes___ No___
- Does the plan cover the highest probability emergencies? Yes___ No___
- Does the plan identify where all employees are to gather in the event of an emergency? Yes___ No___
- Is the list of trained emergency response personnel posted? Yes___ No___
- Is the list up to date? Yes___ No___
- Are mutual arrangements addressed in the plan? Yes___ No___
- Have the mutual aid agreements been tested? Yes___ No___
- Did the employees respond to these tests? Yes___ No___
- Were the response times recorded? Yes___ No___
- Are all contractors accounted for in the plan? Yes___ No___
- Is there an alarm system to warn of an emergency? Yes___ No___
- Are the emergency contact numbers posted? At all telephones? Yes___ No___
- Do all workers know the site 911 identification number? Yes___ No___

Emergency Response Training

- Have employees received the required training? Yes___ No___
- Are records of training maintained? Yes___ No___
- Are emergency response personnel identified? Yes___ No___
- Is the checklist for emergency response personnel maintained? Yes___ No___

Emergency Response Evaluation

- Are emergency drills held for each shift annually? Yes___ No___
- Are reports of the drills maintained? Yes___ No___
- Are follow-up debriefings conducted? Yes___ No___
- Are point-in-time evaluations conducted? Yes___ No___

Rescue Incidents

- Have there been incidents where emergency response personnel were engaged? Yes ___ No ___
- Have reports of these events been kept? Yes ___ No ___
- Are follow-up debriefings conducted? Yes ___ No ___

Emergency Response Resources

- Is emergency response equipment kept at each site? Yes ___ No ___
- Is there adequate equipment for the size of the site? Yes ___ No ___
- Are equipment and materials stored properly? Yes ___ No ___
- Is there a checklist for the equipment and supplies? Yes ___ No ___
- Is someone officially responsible for maintaining the equipment and material? Yes ___ No ___

Worker Training

- Are all employees trained to follow an evacuation procedure? Yes ___ No ___
- Are all contractor employees trained to follow the evacuation procedure? Yes ___ No ___
- Does everyone know where to gather in the event of an evacuation? Yes ___ No ___
- Is there a plan to deal with missing persons from the head count? Yes ___ No ___
- Are there enough workers trained in emergency response? Yes ___ No ___
- Are there enough workers trained in first aid? Yes ___ No ___
- Have emergency response personnel been trained for all emergencies? Yes ___ No ___

Checklist reviewed by: _____

Date: _____

Sample Plan

Surface Mine Emergency Response

For: Nordstrom Aggregates
318 Malleus Road
Bracken, ON, T1B 8T2

Date: May 22, 2005

Planning team: William Nordstrom (owner)
John Milano (health and safety rep, lead hand,
loader operator, full-time employee)

No. Employees: 1 – full time, 7 – seasonal (March through October)

Copies of the Company Health and Safety Policy (attached) are posted in the lunchroom and office along with copies of the Occupational Health and Safety Act and Regulations for Mines and Mining Plants.

Emergency Phone Numbers

OPP	xxx-xxxx
Hospital	xxx-xxxx
Ambulance	xxx-xxxx
Fire Department	xxx-xxxx
Ministry of Labour	xxx-xxxx

Emergency Training

One day of the week-long pre-production startup program in March will be devoted to refresher training in emergency procedures, fire-fighting and related programs. An emergency evacuation drill will be held at least once during the March-October production season.

Evacuation Plan

In the event of an emergency requiring employee evacuation:

1. Notify the plant office by radio
2. The office will sound the alarm and notify all employees by radio to evacuate
3. All employees will come to the plant office by company vehicle obeying posted speed limits
4. Park in the parking lot and assemble in front of the office or inside if the weather is bad

Fire Protection and Fire Fighting Plan

All employees will follow the procedure:

1. In the event of a fire in equipment which has a built-in fire suppression system, (loaders, gen set) activate the system.
2. In the event of a fire at or near fuel tanks, notify the office and evacuate.
3. If you discover a fire in its early stage, notify the office by radio then make the decision whether to fight it with a fire extinguisher – all employees should be familiar with extinguisher locations and how to use them – when in doubt evacuate.
4. For any fire which cannot be fought with hand-held extinguishers, the Bracken municipal fire department will be called – if required, a Nordstrom employee will be designated to lead the fire department to the scene of the fire using a company truck. The company has offered its property for fire fighter training purposes.

Incident and Injury Plan

1. First aid kits are located at the crusher plant, gen set trailer and in each company vehicle.
2. For minor injuries (scrapes, shallow cuts, etc.) all employees are authorized to use materials in any first aid kit but must make a note of the injury and materials used in the kit's log book.
3. For any injury more serious than the above, call the office for assistance. Bill Nordstrom, John Milano and Marge Burroughs are all current-trained first-aiders. They will determine whether an injury can be treated on site, treated in hospital or requires an ambulance.
4. It is company policy that no employee shall walk on, climb or otherwise become personally involved with stockpiled material so runs of material should not be a safety issue.

Security Procedures

1. Only the main gate near the weigh scale will be opened for vehicle access. All other gates at entries to the property will be closed and locked at all times. Report any damage to gates or perimeter fences
2. Incoming customer trucks for pickup must stop at the office. Drivers are not allowed to leave the cabs of their vehicles at any time while on Nordstrom property. A designated "tarp-up" area is provided for loaded trucks beyond the weigh scale.
3. All other visitors are required to park near the office for check-in and check-out when leaving. All visiting vehicles must be accompanied by a Nordstrom vehicle when traveling on company property. Hard hats and safety glasses are available for visitors in the office.
4. No explosives are stored on the company property. Blasting contractors bring only enough explosives for the job at hand and are responsible for explosives security.
5. The OPP will be notified if there is a security reason to do so.

Severe Weather

We may expect late winter snowfall in March when we resume full-time operations but, generally, ice and snow do not pose a major hazard. The area has never experienced a hurricane or tornado. Fog and rain pose the greatest threats to safety.

1. Only Bill Nordstrom or John Milano is authorized to modify or cease operations due to severe weather.
2. Stockpiles are to be maintained at the material's angle of repose.
3. Report any signs of water backup or flooding during or following a rain storm.
4. All employees will follow the company's "heat stress" procedure (attached) during periods of extreme heat and sunshine.
5. Hours of operation in the spring and fall will be adjusted according to available daylight.

Interruption of Electrical Supply

Electrical systems in the office and weigh scale are designed to switch over to power supplied by our generators in the event of a failure of utility-supplied power.