

**ONTARIO COLLEGE OF TRADES**  
**ORDRE DES MÉTIERS DE L'ONTARIO**

Apprenticeship  
Training Standard  
Log Book

Surface Blaster

278B

2014





**ONTARIO COLLEGE OF TRADES**  
**ORDRE DES MÉTIERS DE L'ONTARIO**

Apprentice Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Trade: \_\_\_\_\_

**Ministry of Training, Colleges and Universities Registered Training Agreement #:**

\_\_\_\_\_

**OCOT Membership #:**

\_\_\_\_\_

This document is the property of the Apprentice named herein and represents the official record of their training.

You must become a member of the College's Apprentices Class and maintain your membership in good standing while you complete your training. For more information on membership, please visit the College's website at: [www.collegeoftrades.ca](http://www.collegeoftrades.ca)

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Any updates to this publication are available on-line; to download this document in PDF format, please follow the link: [www.collegeoftrades.ca](http://www.collegeoftrades.ca).

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## TERMS AND CONDITIONS AS PER REGISTERED TRAINING AGREEMENT

### The Apprentice agrees:

- to inform the Ministry of Training, Colleges and Universities of any change to their contact information or change in sponsor within 7 days;
- to follow the Sponsor's and Trainer's lawful instructions and make every effort to acquire the skills identified in the Apprentice Training Standard Log Book (Log Book) for the Trade which is part of the apprenticeship program established by the Ontario College of Trades for the trade;
- to obtain written verification from the Sponsor and the Trainer(s) that the requirements in the Log Book for the trade have been met.

### The Sponsor agrees:

- to ensure that the Apprentice is provided with the training required as part of the apprenticeship program established by the College of Trades for this trade;
- to ensure that the Trainer(s) verifies, in writing, when each skill identified in the Log Book for the trade has been successfully completed by the Apprentice;
- to review the progress of training with the Apprentice, and with the Trainer(s) where the Sponsor and the Trainer are not the same party.

RESOURCE	LINK
Red Seal Program	<a href="http://www.red-seal.ca">www.red-seal.ca</a>
Ministry of Training, Colleges and Universities	<a href="http://www.tcu.gov.on.ca">www.tcu.gov.on.ca</a>
Employment Ontario	<a href="http://www.tcu.gov.on.ca">www.tcu.gov.on.ca</a>
Service Canada	<a href="http://www.servicecanada.gc.ca">www.servicecanada.gc.ca</a>
Ontario College of Trades and Apprenticeship Act, 2009	<i>Ontario College of Trades and Apprenticeship Act, 2009</i>
Ontario Ministry of Labour – Health and Safety Partners	<a href="http://www.labour.gov.on.ca">www.labour.gov.on.ca</a>
College of Trades Appointments Counsel	<a href="http://www.cot-appointments.ca">www.cot-appointments.ca</a>
Essential Skills Ontario	<a href="http://www.essentialskillsontario.ca">www.essentialskillsontario.ca</a>
Exam Preparation Guide	<a href="http://www.collegeoftrades.ca">www.collegeoftrades.ca</a>

## **INTRODUCTION TO THE LOG BOOK**

As of April 8th, 2013, the Ontario College of Trades (College) became responsible for the development and maintenance of Log Books in the Province of Ontario.

Please refer to the College of Trades website for the most accurate and up-to-date information: [www.collegeoftrades.ca](http://www.collegeoftrades.ca)

This Log Book is intended to be used by the Apprentice and Sponsor as an official record of training. The completion of this document is necessary to complete your apprenticeship and receive your Certification of Apprenticeship.

The Log Book identifies skills required for this trade and its related training program. It has been written in statements which describe how you, the Apprentice, must perform each skill in order to become competent in your trade.

The Trainer and Apprentice are required to sign-off and date each skill after the Apprentice has proven competence in these skills. However, if a skill is shaded, it is optional and does not need to be signed off.

This on-the-job Log Book is a document issued to Apprentices who sign a Registered Training Agreement in the Province of Ontario. It is designed to record an Apprentice's acquired skills and time worked for the trade to which they are registered. This Log Book is developed by the Ontario College of Trades and used by the Ministry of Training, Colleges and Universities.

This Apprenticeship Training Standard for Surface Blaster was developed in consultation with representatives from industry and may include members from a related Trade Board/Working Committees.

The information presented in this standard is, to the best of our knowledge, current at time of printing and is intended for general application.

## ROLES AND RESPONSIBILITIES

### Ontario College of Trades

Under the *Ontario College of Trades and Apprenticeship Act, 2009 (OCTAA)*, the College of Trades is responsible for:

- Establishing and maintaining qualifications for membership;
- Issuing Certificates of Qualification and Statements of Membership;
- Maintaining a [Public Register](#) of members;
- Receiving and investigating complaints, and determining disciplinary action;
- Establishing Apprenticeship Programs, Training Standards and Scopes of Practice for each trade;
- Conducting Trade Equivalency Assessments;
- Determining Journeyperson-to-Apprentice ratios;
- Addressing compliance with legislation (OCTAA) and regulations; and,
- Promoting the skilled trades and conducting research.

For any matters related to your membership in the Apprentices class, you must contact the College of Trades directly at: (647) 847-3000 or toll free at: 1(855) 299-0028.

### Ministry of Training, Colleges and Universities

Is responsible for:

- Registering Training Agreements;
- Approving which persons may provide apprenticeship training;
- Approving Training Delivery Agents;
- Issuing Certificates of Apprenticeship;
- Administering Certificate of Qualification examinations;
- Promoting skilled trades and apprenticeship;
- Conducting policy development, evaluation and research; and,
- Passing regulations.

For any matter related to your Registered Training Agreement or completing your apprenticeship, you must contact your Local Apprenticeship Office at the Ministry of Training, Colleges and Universities.



## **Roles and Responsibilities of the Apprentice**

An Apprentice is an individual who has entered into an Registered Training Agreement with a Sponsor to receive training in a trade as part of an apprenticeship program established by the College of Trades.

As an Apprentice, you have certain roles and responsibilities to follow throughout your apprenticeship training:

Steps:

1. You must become a member of the College of Trades Apprentices Class and maintain your membership in good standing while you complete your training. For more information on membership, please visit the College of Trades website at: [www.collegeoftrades.ca](http://www.collegeoftrades.ca)
2. As an Apprentice, you are responsible for completing skills or skill sets in this Log Book and ensuring that they are dated and signed by both you and your Trainer.
3. You must also ensure your Skill Set Completion Form is completed and signed by your current Sponsor once you have demonstrated competence in all the mandatory skills in this Log Book. Once this is done, we recommend you submit the Log Book to your local Ministry of Training, Colleges and Universities office.
4. You are responsible for informing the staff at your local Ministry of Training, Colleges and Universities office regarding changes to the following:
  - Your Sponsor's address;
  - Your name and address; and/or,
  - Your Sponsor, including starting employment with a new Sponsor.
5. You must present the Apprentice Completion Form (Please refer to Appendix B), once all unshaded skills and skill sets have been completed within this document, along with your authorized Log Book to your local Ministry of Training, Colleges and Universities office.

## **Roles and Responsibilities of Sponsors and Trainers**

Log Books identify the on-the-job skills required for a trade and its related training program.

This Log Book has been written in concise statements which describe how well an Apprentice must perform each skill in order to become competent. Competence means being able to perform to the required standard.

By using this Log Book, Trainers will be able to ensure that the Apprentice is developing skills detailed for the trade.

Trainers and Apprentices are required to sign-off and date the skills following each successful acquisition.

The detailed content listed for each skill is not intended to represent an inclusive list; rather, it is included to illustrate the intended direction for the skill acquisition.

The Trainer must provide their signature based on their assessment and professional judgment that the apprentice is competent in the skills described above. The Trainer's signature is not a general warranty or guarantee of the apprentice's future conduct.

Sponsors participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement by signing the appropriate box included at the end of each skill set.

## **SAFETY**

Safe working procedures and conditions, accident prevention and the preservation of health are of primary importance for apprenticeship programs in Ontario. These responsibilities are shared and require the joint efforts of government, sponsors, employers, employees and the public. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to or cause an accident or injury.

It is generally recognized that a safe attitude contributes to an accident free environment. Everyone will benefit as a result of a healthy attitude towards prevention of accidents.

A tradesperson is possibly exposed to more hazards than any other person in the work force and, therefore, should be familiar with and apply Occupational Health and Safety Act and Regulations dealing with personal safety and the personal safety rules applying to each task.

### **Legal and Administrative Aspects of Safety:**

Accident prevention and the provisions of safe working conditions are the responsibilities of an employer and employee.

#### **Employer's Responsibilities - The employer is responsible for:**

- Providing and maintaining safety equipment and protective devices;
- Ensuring proper safe work clothing is worn;
- Enforcing safe working procedures;
- Providing safeguards for machinery, equipment and tools;
- Observing all accident prevention regulations; and,
- Training employees in the safe use and operation of equipment.

#### **Employee's Responsibilities - The employee is responsible for:**

- Working in accordance with the safety regulations pertaining to the job environment;
- Working in such a way as not to endanger themselves or fellow employees and the public.

#### **Workplace Health and Safety's Responsibilities:**

- Workplace Health and Safety (Ontario's Ministry of Labour) will conduct periodic inspections of the workplace to ensure that safety regulations for industry are being observed.

## **APPRENTICESHIP PROGRAM SUMMARY**

**The scope of practice for the trade of Surface Blaster includes** assessing the pre-blast area and site, controlling the blast area, designing and implementing the blast, loading blast holes, hooking up and initiating shot and assessing blast results. Ontario Regulation 276/11, Section 45 of OCTAA reference.

\*While the Log Book draws on the scope of practice regulation (Section 45 of Ontario Regulation 276/11 under OCTAA) the Training Standard does not purport to add to or modify the scope of practice as provided in regulation.\*

### **Program Guidelines**

#### **On-the-Job Training Duration**

Industry has identified 2240 hours as the duration necessary for any Apprentice to become competent in the skills required. There may be circumstances in which the duration varies from this guideline.

#### **In-School Training Duration**

Industry has identified 360 hours of in-school training as the duration necessary for an Apprentice to complete the in-school curriculum for this program.

#### **Ratio Guideline**

There are no set regulations for Journey person to Apprentice ratios in the Surface Blaster trade.

#### **Program Requirements**

There are no set regulations for wage rates in the Surface Blaster trade.

#### **Compulsory and Voluntary Classification**

This program does not contain compulsory skill sets and is considered a voluntary trade.

#### **Eligibility for Apprenticeship Program Completion**

The Apprentice must:

- Achieve competency in all mandatory (unshaded) skills as identified in the Training Standard;
- Complete the in-school training as outlined by the industry and approved Curriculum Standard.

It is the responsibility of an Apprentice to maintain a training record in the form of an Ontario College of Trades Log Book or Schedule of Training. The Sponsor and Trainer are required to sign-off when competencies in the trade are achieved.

**Essential Skills**

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change. Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

The nine Essential Skills are:

- ▶ Reading
- ▶ Writing
- ▶ Document Use
- ▶ Numeracy
- ▶ Computer Use
- ▶ Thinking
- ▶ Oral Communication
- ▶ Working with Others
- ▶ Continuous Learning

A series of tools endorsed by the Canadian Council of Directors of Apprenticeship (CCDA) have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- Understand how essential skills are used in the trades;
- Learn about individual essential skills strengths and areas for improvement; and,
- Improve essential skills and increase success in an apprenticeship program.

A link to the complete essential skills profile for Red Seal trades can be found at [www.red-seal.ca](http://www.red-seal.ca).

## TRAINING THE APPRENTICE

### Tips for Apprentices

Remember, it takes time to learn. The following is a list of additional tips and tools to help make the most of your apprenticeship training:

- Practice safe work habits;
- Use your Apprenticeship Log Book as a journal to keep track of the skills you have achieved;
- Listen to the suggestions of your Trainer;
- Discuss your training needs with your Sponsor;
- Review your training plan with your Training Consultant, Trainer, or Sponsor;
- Ask your Trainer questions if you are unsure of any skill you need to perform or any tools or equipment you need to use to perform your duties;
- Show enthusiasm and develop good work habits; and,
- Upon demonstration of competency, ensure that you and your Trainer sign-off the individual skills. Once a 'set of skills' have been signed off, ensure your Sponsor signs off this area as well.

### Sponsor

Sponsors are responsible for ensuring all terms are met as per the Registered Training Agreement. They are named on the Registered Training Agreement as the entity responsible for ensuring Apprentices receive the training required as part of an apprenticeship program. As a signatory to this agreement, they are designated as the 'Signing Authority' for the Apprentice's Skill Set Completion Form, and are required to attest to successful achievement by signing the appropriate box at the completion of each skill set.

### Tips for Sponsors

- Select Trainers with good communication skills and who work well with others;
- Ensure that the Apprentice always works under the direction of or has access to a qualified Trainer;
- Encourage Trainers to take upgrading courses (e.g. Train the Trainer, Mentor, Coach, etc.);
- Encourage safe work habits;
- Provide time for the Trainer to demonstrate skills to the apprentice;
- Provide opportunities and time for the Apprentice to learn the trade;
- Ensure that the Apprentice receives the varied on-the-job trade training experience outlined in this document;
- Set out clear expectations, and recognize good performance;
- Involve both the Apprentice and Trainer in developing the training plan and observe frequently;
- Provide constructive feedback and conduct regular performance reviews involving the Apprentice and Trainer;
- Use the Log Book as a monitoring tool and a part of regular performance evaluations; and,
- Complete the Skill Set Completion Form once the Apprentice has demonstrated competency in the skills.

### **Trainer**

A Trainer is an individual who oversees the performance of a task and sets the workplace expectations and practices for the Apprentice. In compulsory trades, a Trainer must hold a valid Certificate of Qualification and be a member of the College of Trades Journeypersons Class.

In voluntary trades, a Trainer is an individual who holds one of the following:

- A valid Certificate of Qualification and is a member of the College of Trades Journeypersons Class; or,
- Holds a Statement of Membership in the College of Trades Tradespersons Class; or,
- Holds a Certificate of Qualification previously issued by Ministry of Training, Colleges and Universities; or,
- Holds a Certificate of Apprenticeship in the trade; or,
- Has completed both the workplace-based training (competencies and/or hours as applicable) and classroom training components of the trade's apprenticeship program; or,
- Has workplace experience equivalent to the apprenticeship program (eligible to apply to College membership in the Journeypersons or Tradespersons Classes) or has the skills outlined in the Log Book.

**A classroom instructor is not permitted to sign-off the skills contained within this Log Book.**

**In this trade a trainer must be competent in the skill, but it is not mandatory to be a member of the College of Trades or have a Certificate of Qualification (CofQ).**

### **Tips for Trainers**

Trainers are responsible for ensuring the Apprentice is developing the skills outlined in this document. Here is a list of tips and tools to help Trainers in their supervision of Apprentices:

- Demonstrate model safe work habits;
- Provide opportunities and time for the Apprentice to learn the trade;
- Treat Apprentices fairly and with respect;
- Review the Log Book with the Apprentice and develop a training plan;
- Set out clear expectations and recognize good performance;
- Ensure that the Apprentice receives on-the-job trade training experience as outlined in this document;
- Encourage and respond to all questions;
- Be patient;
- Explain, show and demonstrate the skill;
- Provide continuous feedback;
- Sign-off skills when your Apprentice demonstrates competency, and,
- Use the Log Book as a guide to evaluate competence in each skill area. By using the Log Book, Trainers will be able to ensure that the Apprentice is developing skills outlined in this document.

## NOTICE OF COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this Log Book to the Ministry of Training, Colleges and Universities. You will be required to disclose the signed Apprenticeship Completion form to the Ministry of Training, Colleges and Universities in order to complete your program. The Ministry of Training, Colleges and Universities will use your personal information to administer and finance Ontario's apprenticeship training system, including confirming your completion and issuing your Certificate of Apprenticeship.
2. The Ministry of Training, Colleges and Universities will disclose information about your program completion and your Certificate of Apprenticeship to the Ontario College of Trades, as it is necessary for the College of Trades to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry under the authority of the *Ontario College of Trades and Apprenticeship Act, 2009*.
4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

Manager, Employment Ontario Contact Centre  
Ministry of Training, Colleges and Universities  
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3  
Toll-free: 1-800-387-5656; Toronto: 416-326-5656  
TTY: 1-866-533-6339 or 416-325-4084.



**COMPETENCY ANALYSIS PROFILE  
SURFACE BLASTER  
ON-THE-JOB TRAINING STANDARD SKILLS**

<b>PROTECT SELF AND OTHERS</b>	Identify, interpret and comply with federal, provincial and municipal legislation and regulations	Wear and maintain appropriate eye protection	Wear and maintain appropriate face protection	Wear and maintain appropriate head protection	Wear and maintain appropriate hearing protection
	U8030.0	8030.01	8030.02	8030.03	8030.04

Wear and maintain appropriate hand protection	Wear and maintain appropriate foot protection	Select and maintain appropriate fall protection	Mount and dismount equipment	Direct all onsite personnel
8030.06	8030.07	8030.08	8030.09	8030.10

Direct all onsite equipment	Handle all explosives	Store and secure all explosives as required	Dispose of surplus, expired or unused explosive products	Transport explosives
8030.11	8030.12	8030.13	8030.14	8030.15

<b>COMMUNICATE IN WORK PLACE</b>	Determine chain of command	Identify all authorized personnel and established contacts	Comply with job instructions	Perform job tasks as a team	Maintain records
	U8031.0	8031.01	8031.02	8031.03	8031.04

Use approved hand signals or other means of communication				
8031.06				

<b>ASSESS BLASTING AREA AND SITE</b>	Establish blast site perimeter	Establish blast area perimeter	Determine geological features of rock	Identify hazards above and below ground	Identify local environmental conditions
	U8032.0	8032.01	8032.02	8032.03	8032.04

## SURFACE BLASTER

	Determine personnel requirements  8032.06	Determine signage requirements  8032.07	Verify pre-blast survey report  8032.08	Determine monitoring requirements  8032.09	Check for miss holes  8032.10
	Review project requirements  8032.11	Confirm locates  8032.12	Ensure required permits are in place  8032.13	Ensure blast notifications are issued  8032.14	
<b>CONTROL BLAST AREA</b>  <b>U8033.0</b>	Post area, site warnings signs and barriers  8033.01	Communicate with other work crews and contractors in the blast area  8033.02	Instruct and post guards  8033.03	Notify adjacent utilities, property owners and residents of impending blast  8033.04	Remove non-essential personnel and equipment  8033.05
<b>DEVELOP/IMPLEMENT BLAST DESIGN</b>  <b>U8034.0</b>	Review historical blasting information  8034.01	Read and interpret plans, grade sheets, and limits of excavation  8034.02	Design pre-blast plan  8034.03	Verify blast design  8034.04	Verify blast perimeters  8034.05
	Determine type of explosive products  8034.06	Calculate powder factor  8034.07			
<b>LOAD BLAST HOLES</b>  <b>U8035.0</b>	Obtain drill log and verify drilling before loading  8035.01	Check for lightning and potential extraneous currents  8035.02	Identify climatic conditions  8035.03	Check for ground water  8035.04	Dewater holes  8035.05
	Verify selection of product and blasting accessories  8035.06	Verify product condition and date code  8035.07	Lay out booster  8035.08	Prime holes  8035.09	Verify primer location  8035.10

## SURFACE BLASTER

	Verify detonator  8035.11	Load explosives  8035.12	Monitor column rise  8035.13	Stem hole  8035.14	Return excess explosive products and accessories  8035.15
	Shunt leg wires  8035.16	Secure and protect non-electric detonating lead-in lines until ready for hook-up  8035.17			
<b>MAINTAIN ACCESSORIES</b>  <b>U8036.0</b>	Verifying blasting machine condition  8036.01	Verify seismograph condition  8036.02	Verify matting equipment condition  8036.03	Test warning devices  8036.04	Verify leadline or harness wires continuity and condition  8036.05
	Test lightning detector  8036.06	Verify tools and equipment condition  8036.07			
<b>CONTROL FLY ROCK</b>  <b>U8037.0</b>	Check for potential fly rock hazards  8037.01	Adjust loading of individual holes  8037.02	Verify timing  8037.03	Select appropriate matting materials  8037.04	Direct the placement select matting  8037.05
<b>HOOK UP AND INITIATE BLAST</b>  <b>U8038.0</b>	Clear blast site  8038.01	Verify initiation design  8038.02	Check leg wire, harness wire shock-tube, or detonating cord condition  8038.03	Connect detonators  8038.04	Walk the blast  8038.05
	Run out lead line  8038.06	Clear blast area  8038.07	Position required number of guards  8038.08	Initiate warning signal  8038.09	Verify lead line procedure  8038.10

## SURFACE BLASTER

	Verify shock tube lead-in line procedure  8038.11	Verify buswire procedure  8038.12	Communicate with guards  8038.13	Sound final warning  8038.14	Connect blasting machine  8038.15
	Conduct test blast  8038.16	Disconnect lead-in line from blasting machine  8038.17	Conduct post blast site inspection  8038.18	Sound all clear signal and communicate area status with relieve guards  8038.19	
<b>ASSESS BLAST RESULTS</b>  <b>U8039.0</b>	Wait appropriate time before entering blast site  8039.01	Assess blast test results  8039.02	Inspect blast results  8039.03	Evaluate blast data from monitoring equipment  8039.04	Report all incidents  8039.05
	Implement procedure to address misfires and cut-offs  8039.06	Rectify other problems/malfunctions  8039.07			

**U8030.0 PROTECT SELF AND OTHERS****GENERAL PERFORMANCE OBJECTIVE**

Protect self and others by: identifying, interpreting and complying with federal, provincial and municipal legislation and regulations; wearing and maintaining appropriate eye, face, head, hearing, hand and foot protection; selecting and maintaining appropriate fall protection; mounting and dismounting equipment using 3-point contact method; directing all onsite personal; directing all onsite equipment; handling all explosives; storing and securing all explosives as required; disposing of surplus, expired or unused explosive products; and transporting explosives.

**SKILLS**

8030.01 **Identify, interpret and comply with federal, provincial and municipal legislation and regulations**, including Canada Explosive Act (CEA), Transportation of Dangerous Goods Act (TDGA), the Ontario Health and Safety Act (OHSA), Dangerous Goods Transportation Act (DGTA), during all work operations, to ensure safety of self and others according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

◊ **In this trade a trainer must be competent in the skill, but it is not mandatory to be a member of the College of Trades or have a Certificate of Qualification (CofQ).**

**8030.0 PROTECT SELF AND OTHERS - Cont'd**

8030.02 **Wear and maintain appropriate eye protection**, ensuring correct fit during all work operations, to protect self from eye injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.03 **Wear and maintain appropriate face protection**, ensuring correct fit during all work operations to protect self from face injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.04 **Wear and maintain appropriate head protection**, ensuring correct fit during all work operations to protect self from head injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8030.0 PROTECT SELF AND OTHERS - Cont'd**

8030.05 **Wear and maintain appropriate hearing protection**, ensuring correct fit during work operations where daily noise exposure exceeds regulated limits, to protect against hearing loss according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.06 **Wear and maintain appropriate hand protection**, ensuring correct during work operations to protect self from hand injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.07 **Wear and maintain appropriate foot protection**, ensuring correct fit during all work operations to protect self from foot injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8030.0 PROTECT SELF AND OTHERS - Cont'd**

8030.08 **Select and maintain appropriate fall protection**, ensuring correct fit, during all work operations, to protect self from injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.09 **Mount and dismount equipment using 3-point contact method**, to prevent personal injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.10 **Direct all onsite personnel**, during all job operations, to protect self and others from injury according to owner/operator manuals, government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID



**8030.0            PROTECT SELF AND OTHERS - Cont'd**

8030.11            **Direct all onsite equipment**, during all job operations, to protect self and others from injury according to owner/operator manuals, government regulations, project specifications and company policy.

(mm/dd/yy)			
	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.12            **Handle all explosives**, according to government regulations, project specifications and company policy.

(mm/dd/yy)			
	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.13            **Store and secure all explosives as required**, in an approved and/or licensed container according to government regulations, project specifications and company policy.

(mm/dd/yy)			
	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8030.0 PROTECT SELF AND OTHERS - Cont'd**

8030.14 **Dispose of surplus, expired or unused explosive products**, using approved methods, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8030.15 **Transport explosives**, in a carrier, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8030: PROTECT SELF AND OTHERS</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8031.0 COMMUNICATE IN WORK PLACE**

**GENERAL PERFORMANCE OBJECTIVE**

Communicate in workplace by: determining the chain of command; identifying all authorized personnel and established contacts; complying with job instructions; performing job tasks as a team; maintaining records; and using approved hand signals or other means of communication.

**SKILLS**

8031.01 **Determine chain of command**, including the blaster-in-charge, in order to confirm job responsibilities according to project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8031.02 **Identify all authorized personnel and established contacts**, with respect to the project, by communicating effectively with contractors and others according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8031.0 COMMUNICATE IN WORK PLACE - Cont'd**

8031.03 **Comply with job instructions**, to create a safe working environment for blasting operations with co-workers and others by following contract specifications, drawings, supervisor guidelines and government legislative requirements according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8031.04 **Perform job tasks as a team**, by communicating and interacting with co-workers or other personnel according to government regulations, project specifications, company policy and job specific procedures.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8031.05 **Maintain records**, including daily diary, blast reports, bills of lading, accident reports, incident reports, production reports, inventory, blaster's log and maintenance records, where applicable, at all times according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8031.0 COMMUNICATE IN WORK PLACE - Cont'd**

8031.06 **Use approved hand signals or other means of communication**, when communicating with equipment operators, to ensure a clear understanding of the directions according to Infrastructure Health and Safety Association (IHSA) requirements, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8031: COMMUNICATE IN WORK PLACE</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8032.0 ASSESS BLASTING AREA AND SITE**

**GENERAL PERFORMANCE OBJECTIVE**

Assess blasting area and site by: establishing blast site perimeter; establishing blast area perimeter; determining geological features of rock; identifying hazards above and below ground; identifying local environmental conditions; determining personnel requirements; determining signage and barrier requirements; verifying pre-blast survey report; determining monitoring requirements; checking for miss holes; review project requirements; confirming locates; ensuring required permits are in place; and ensuring blast notifications are issued.

**SKILLS**

**8032.01 Establish blast site perimeter**, according to the location where explosives are handled for the loading of a blast, in order to restrict unauthorized personnel from entering the site according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8032.02 Establish blast area perimeter**, according to the type of blast, local site conditions, potential fly rock range and safe starting point to ensure safe blast operations using maps, measuring devices and electronic tools according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8032.0 ASSESS BLASTING AREA AND SITE - Cont'd**

8032.03 **Determine geological features of rock**, by referencing blast history, observing rock outcrops, drill cuttings and/or obtaining drilling records and/or geo-technical reports from appropriate sources, in order to achieve safe blast with desired fragmentation according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.04 **Identify hazards above and below ground**, including all utilities, infrastructure and radio frequency transmissions, by observation and reference to drawings and specifications, in order to prevent injury and property damage using appropriate documentation tools and methods according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.05 **Identify local environmental conditions**, such as locating water sources, wildlife habitats, protected vegetation, by referring to project specifications for environmental restrictions in order to minimize local environmental impact according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8032.0 ASSESS BLASTING AREA AND SITE - Cont'd**

8032.06 **Determine personnel requirements**, according to job schedule and size of project, in order to ensure safe and productive operations according to company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.07 **Determine signage and barrier requirements**, according to number of accesses leading to the site, to establish the blast area and to warn of potential hazards according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.08 **Verify pre-blast survey report**, by checking with management, to ensure that pre- blast survey has been completed, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID



**U8032.0 ASSESS BLASTING AREA AND SITE - Cont'd**

8032.09 **Determine monitoring requirements**, to correctly and accurately assess environmental impact such as water tables, noise, vibration and dust according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.10 **Check for miss holes**, from previous blasting operations, by visual inspection of blast site, to identify potential hazards according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.11 **Review project requirements**, to comply with special provisions, including blasting hours, explosive products and blast design for the project according to government regulations, project specifications/provisions and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8032.0 ASSESS BLASTING AREA AND SITE - Cont'd**

8032.12 **Confirm locates**, by contacting contractors or utilities and, if required, arranging for day lighting visual inspection within blast site, to prevent damage to utilities or property according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8032.13 **Ensure required permits are in place**, including magazine permits, hot-load letters, utility company permits, and blasting permits, before the project commences, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8032.0 ASSESS BLASTING AREA AND SITE - Cont'd**

8032.14 **Ensure blast notifications are issued**, according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8032: ASSESS BLASTING AREA AND SITE</b>		
Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature

**U8033.0 CONTROL BLAST AREA**

**GENERAL PERFORMANCE OBJECTIVE**

Control blast site by: posting area, site warning signs and barriers; communicating with other crews and contractors in the blast area; instructing and posting guards; notifying adjacent utility owners, property owners and residents of impending blast; and removing non-essential personnel and equipment.

**SKILLS**

**8033.01 Post area, site warning signs and barriers, before loading commences, according to the number of accesses to the site and area in order to prevent unauthorized persons from entering the blast area and according to government regulations, project specifications and company policy.**

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8033.02 Communicate with other work crews and contractors in the blast area, before explosives arrive at the site, in order to carry out blasting operations according to government regulations, project specifications and company policy.**

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8033.0 CONTROL BLAST AREA - Cont'd**

8033.03 **Instruct and post guards**, before blast initiation, to prevent unauthorized persons from entering the blast area and to explain potential fly-rock hazards in order to prevent injury according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8033.04 **Notify adjacent utility owners, property owners and residents of impending blast**, before blast initiation, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

U8033.05 **Remove non-essential personnel and equipment**, prior to initiation, in order to prevent injury and property damage according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8033: CONTROL BLAST AREA</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8034.0 DEVELOP / IMPLEMENT BLAST DESIGN**

**GENERAL PERFORMANCE OBJECTIVE**

Develop/implement blast design by: reviewing historical blasting information; reading and interpreting plans, grade sheets, and limits of excavation; designing pre-blast plan; verifying blast design; verifying blast perimeters; checking for potential fly rock hazards; determining type of explosive products; and calculating powder factor.

**SKILLS**

8034.01 **Review historical blasting information**, if available, before designing blast, in order to achieve desired excavation results using references such as other previous blasters and blast reports, according to company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8034.02 **Read and interpret plans, grade sheets, and limits of excavation**, before designing blast, in order to achieve desired excavation results according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8034.0 DEVELOP / IMPLEMENT BLAST DESIGN - Cont'd**

8034.03 **Design pre-blast plan**, according to site conditions, fly rock, air blast and vibration limitations, direction of blast, initiation sequencing, explosive products and accessories, and fragmentation requirements, in order to maximize blasting results according to government regulations, project specifications and company policy.

(mm/dd/yy)			
	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
	Apprentice Print Name	Apprentice Signature	College of Trades ID

8034.04 **Verify blast design**, if provided by alternate sources, in order to confirm the design will achieve desired results according to government regulations, project specifications and company policy.

(mm/dd/yy)			
	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
	Apprentice Print Name	Apprentice Signature	College of Trades ID

8034.05 **Verify blast perimeters**, in the field, to ensure that drilling, loading of explosives and initiation of the blast has been carried out as per design according to government regulations, project specifications and company policy.

(mm/dd/yy)			
	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8034.0 DEVELOP / IMPLEMENT BLAST DESIGN - Cont'd**

8034.06 **Determine type of explosive products**, by assessing site conditions including water, seams, rock formations and environmental impact in order to conduct blasting operations, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8034.07 **Calculate powder factor**, based on blast design, in order to confirm that blast results will be achieved according to the design and according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8034: DEVELOP / IMPLEMENT BLAST DESIGN</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>



**U8035.0      LOAD BLAST HOLES**

**GENERAL PERFORMANCE OBJECTIVE**

Load blast holes by: obtaining drill log and verifying drilling before loading; checking for lightning and potential extraneous currents; identifying climatic conditions; checking for ground water; dewatering holes; verifying selection of product and blasting accessories; verifying product condition and date code; laying out boosters; priming holes; verifying primary location; verifying detonator; loading explosives; monitoring column rise; stemming hole; returning excess explosive products and accessories; shunting leg wires; and securing and protecting non-electric detonating lead-in lines.

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**SKILLS**

**8035.01      Obtain drill log and verify drilling before loading**, by inspecting drill holes for depth diameter and deviation, verifying pattern dimensions, to ensure drilling has been conducted according to the design, government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8035.02      Check for lightning and potential extraneous currents**, by conducting a visual inspection of potential extraneous current sources, obtaining weather forecast information, using lightning detector and/or an AM radio receiver (off station), to determine potential hazard for premature detonation according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8035.0      LOAD BLAST HOLES - Cont'd**

8035.03      **Identify climatic conditions**, including wind, temperature, and inversion effects, by visual observation and weather forecast information, in order to change explosive accessories and explosive loading practices, to conduct blast operations according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.04      **Check for ground water**, by inspecting drill holes, in order to select appropriate products and loading practices according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.05      **Dewater holes**, by using pumps, blowpipes and/or other approved equipment, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8035.0      LOAD BLAST HOLES - Cont'd**

8035.06      **Verify selection of product and blasting accessories**, including detonators, cast primers, detonating cord and surface connectors, by inspecting products and shipping documents, in order to ensure correct explosive products and accessories are delivered according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.07      **Verify product condition and date code**, from packaging and compare to manufacturer's recommended shelf life, by conducting a visual examination of explosives and explosive accessories, to ensure optimum product performance according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.08      **Lay out boosters**, detonators and other explosive products, to prepare for loading according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8035.0      LOAD BLAST HOLES - Cont'd**

8035.09      **Prime holes**, by lowering primers and/or detonators to desired depth in the holes, in order to ensure proper initiation of the explosive columns according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.10      **Verify primer location**, by checking shock tube or leg wire length, in order to ensure explosive column is primed at desired location according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.11      **Verify detonators**, by using appropriate testing methods and devices in order to ensure detonator continuity and the delay period according to manufacturer specifications, government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8035.0      LOAD BLAST HOLES - Cont'd**

8035.12      **Load explosives**, by filling the remainder of the drill hole to desired collar in order to complete the loading procedure according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.13      **Monitor column rise**, for slumping and sagging of explosive column in order to prevent overload or underload into seams, vents and voids using appropriate measuring device according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.14      **Stem hole**, by filling collar area with appropriate size and type of stemming material, in order to minimize noise, overpressure, fly rock and rifling according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8035.0      LOAD BLAST HOLES - Cont'd**

8035.15      **Return excess explosive products and accessories**, after loading is completed and place them in approved explosive storage in order to prepare for hookup according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8035.16      **Shunt leg wires**, until ready for hook up by closing detonator circuit, in order to prevent premature detonation from extraneous currents according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8035.0      LOAD BLAST HOLES - Cont'd**

8035.17      **Secure and protect non-electric detonating lead-in lines until ready for hook up**, using appropriate methods, according to manufacturing specifications, government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8035: LOAD BLAST HOLES</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8036.0 MAINTAIN ACCESSORIES**

**GENERAL PERFORMANCE OBJECTIVE**

Maintain accessories by: verifying blasting machine condition; verifying seismograph condition; verifying matting equipment condition; testing warning devices; verifying lead line or harness wires continuity and condition; testing lightning detector; and verifying tools and equipment condition.

**SKILLS**

8036.01 **Verify blasting machine condition**, visually, for corrosion or damage, battery condition, charge/discharge time and change batteries or send machine to authorized service facility for repairs as required, to ensure proper machine operating condition in accordance with manufacturer specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8036.02 **Verify seismograph condition**, visually, for items such as calibration date, correct printer, pen, paper operation, correct sensors, cable, microphone and battery condition, to ensure accurate recording of blast vibration and over pressure measurement, in accordance with manufacturer specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID



**U8036.0      MAINTAIN ACCESSORIES - Cont'd**

8036.03      **Verify matting equipment condition**, including blasting mats, approved lifting hooks and cables, holes in the blasting mats, mat cables and clamps, and debris wedged in the blasting mats, by using adequate lifting equipment, to ensure safe operation according to government regulation, manufacturer specifications, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8036.04      **Test warning devices**, prior to blast initiation to ensure they are in good operating conditions and producing audible sound, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8036.05      **Verify lead line or harness wires continuity and condition**, visually and physically, measuring resistance with an approved device such as blasting galvanometer, scanner or logger, to identify discontinuities and or current leakage according to manufacturer specifications, government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8036.0      MAINTAIN ACCESSORIES - Cont'd**

8036.06      **Test lightning detector**, for proper operation and battery level, and send to authorized service centre for repairs if required, to ensure operation in accordance with manufacturer specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8036.07      **Verify tools and equipment condition**, prior to loading, such as loading poles, blasting galvanometer, non-electric initiation devices and splicing kits, dewatering equipment and powder punches, according to manufacturer specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8036: MAINTAIN ACCESSORIES</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8037.0 CONTROL FLY ROCK**

**GENERAL PERFORMANCE OBJECTIVE**

Control fly rock by: checking for potential fly rock hazards; adjusting loading of individual holes; verifying timing; selecting appropriate matting materials; and directing the placement of selected matting.

**SKILLS**

**8037.01 Check for potential fly rock hazards**, by continuous visual inspection of burden and spacing, rock face, overburden, loading irregularities, rock geology and direction of blast initiation, in order to make necessary loading adjustments according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8037.02 Adjust loading of individual holes**, based on hazards identified in the assessment, including decking, increasing the collar, adjusting type and size of explosives, and changing the size and type of stemming materials, in order to control the energy of the charge according to project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8037.0 CONTROL FLY ROCK - Cont'd**

8037.03 **Verify timing**, by visual inspection or use of appropriate devices, to ensure proper sequencing of blast holes according to design specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8037.04 **Select appropriate matting materials**, such as rubber tire, sand, earth or geotextile, according to hazard assessment and site conditions, in order to control fly rock according to government regulation, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8037.0 CONTROL FLY ROCK - Cont'd**

8037.05 **Direct the placement of selected matting**, after loading and confirmation of tie-in of blast using appropriate communication signals such as hand signals or electronic means, in order to control fly rock according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8037: CONTROL FLY ROCK</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8038.0 HOOK UP AND INITIATE BLAST**

**GENERAL PERFORMANCE OBJECTIVE**

Hook up and initiate blast by: clearing blast site; verifying initiation design; checking leg wire, harness wire, shock-tube, or detonator cord condition; connecting detonators; walking the blast; running out lead line; clearing blast area; positioning required number of guards; initiating warning signal; verifying lead line procedure; verifying shock tube lead-in line procedure; verifying lead line procedure; communicating with guards; sounding final warning; connecting blasting machine; conducting test blasts; disconnecting lead-in line from blasting machine; conducting post blast site inspection; and sounding all clear signal and communicating area status with guards.

**SKILLS**

**8038.01 Clear blast site**, by removing all unnecessary items and hazards such as excess personnel, explosive products and accessories, empty boxes, hole plugs, tools, equipment and sharp objects, to protect the integrity of the surface initiation system according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8038.02 Verify initiation design**, before commencing final hook up, in order to ensure correct detonation sequence according to blast design, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	♦ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8038.0 HOOK UP AND INITIATE BLAST - Cont'd**

8038.03 **Check leg wire, harness wire, shock-tube, or detonating cord condition**, by visual and physical inspection, to ensure no breaks, irregularities or open circuits are present according to manufacturer specifications, government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.04 **Connect detonators**, after blasthole loading and stemming is completed, using required tools, according to blast design sequence, manufacturer specifications, government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.05 **Walk the blast**, after hook up, in order to perform final visual inspection of hook up according to government regulation, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8038.0 HOOK UP AND INITIATE BLAST - Cont'd**

8038.06 **Run out lead line**, testing, repairing or replacing as required, using approved tools and equipment, to ensure lead line is prepared for final hook up, according to government regulation, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.07 **Clear blast area**, by moving personnel and equipment to safe distance outside blast area, to protect personnel and equipment, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.08 **Position required number of guards**, providing them with instructions regarding their roles and responsibilities, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID



**U8038.0 HOOK UP AND INITIATE BLAST - Cont'd**

8038.09 **Initiate warning signal**, after receiving visual and/or auditory communication from guards, that blast area is cleared and secured of unauthorized personnel and equipment, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.10 **Verify lead line procedure**, is completed in an electric blast by ensuring lead line is shunted, connecting lead line to circuits, testing for continuity using an approved and appropriate blasting device, and tying lead in line to blast machine, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.11 **Verify shock tube lead-in line procedure**, is completed in a non-electric blast by ensuring lead-in line is connected to point of initiation and lead-in line is connected to initiator according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8038.0 HOOK UP AND INITIATE BLAST - Cont'd**

8038.12 **Verify buswire procedure**, is completed in an electronic blast by testing and programming according to manufacturer specifications, government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.13 **Communicate with guards**, by visual and/or electronic communication devices to confirm blast area is secured, according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.14 **Sound final warning**, after final communication with guards, to signal pending blast according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8038.0 HOOK UP AND INITIATE BLAST - Cont'd**

8038.15 **Connect blasting machine**, after guards confirmed, sound final warning and fire blast according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.16 **Conduct test blasts**, by implementing approved blast design in order to confirm the blast design produces desired results according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.17 **Disconnect lead-in line from blasting machine**, after initiation of blast, follow manufacturer's specifications for the initiation system used in blast according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8038.0 HOOK UP AND INITIATE BLAST - Cont'd**

8038.18 **Conduct post blast site inspection**, ensure the blast area is safe to re-enter according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8038.19 **Sound all clear signal and communicate area status with and relieve guards**, after confirming blast area is safe and secured, to allow normal operations to resume according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◇ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8038: HOOK UP AND INITIATE BLAST</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

**U8039.0 ASSESS BLAST RESULTS**

**GENERAL PERFORMANCE OBJECTIVE**

Assess blast results by: waiting appropriate time before entering blast site; assessing test blast results; inspecting blast results; evaluating blast data from monitoring equipment; reporting all incidents; implementing procedures to address misfires and cutoffs; and rectifying other problems/malfunctions.

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**SKILLS**

**8039.01 Wait appropriate time before entering blast site**, according to atmospheric conditions, government regulations, project specifications or company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**8039.02 Assess test blast results**, by visual inspection of the fragmentation, heave, fly rock, blast monitoring records, over break, under break, grades and limits, in order to determine if any adjustments to approved blast design are necessary according to government regulations, project specifications and company policy.

(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8039.0 ASSESS BLAST RESULTS - Cont'd**

8039.03 **Inspect blast results**, visually and physically, in order to evaluate blast performance, identify misfires or other unsafe conditions according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8039.04 **Evaluate blast data from monitoring equipment**, by reviewing data such as seismic and overpressure readings, modifying blast design as required, according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8039.05 **Report all incidents**, such as fly rock, injuries, blasting complaints, vibrations and overpressure exceedances to supervisor, according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

**U8039.0 ASSESS BLAST RESULTS - Cont'd**

8039.06 **Implement procedures to address misfires and cut-offs**, in order to ensure safety of people and property in the blast area according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

8039.07 **Rectify other problems/malfunctions**, such as vibration and overpressure damage, fly rock, and poor blast results by adjusting blast design, matting procedures, expanding blast area and repairing or replacing faulty equipment, in order to achieve desired results in future operations according to government regulations, project specifications and company policy.

(mm/dd/yy)			
(mm/dd/yy)	Trainer Print Name	Trainer Signature	◊ College of Trades I.D./CofQ # or other qualification as applicable
(mm/dd/yy)			
(mm/dd/yy)	Apprentice Print Name	Apprentice Signature	College of Trades ID

<b>SPONSOR SIGN-OFF FOR U8039: ASSESS BLAST RESULTS</b>		
<b>Date Completed (mm/dd/yy)</b>	<b>Sponsor Name (Print)</b>	<b>Sponsor Signature</b>

## DEFINITIONS

### Apprentices Class

Individuals in this class:

- Hold one or more valid Registered Training Agreements with the Ministry of Training, Colleges and Universities in either compulsory or voluntary trades;
- Hold a valid statement of membership with the Ontario College of Trades in the Apprenticeship class;
- Are subject to any ratios or wage rates that have been set out in regulation for their trade(s);
- Can remain in this class until they receive their Certificate of Apprenticeship;
- Can hold themselves out as Apprentices.

### Certificate of Apprenticeship (C of A)

A certificate issued by the Minister of Training, Colleges and Universities to individuals who have demonstrated that they have completed an apprenticeship program in Ontario.

### Certificate of Qualification (C of Q)

A certificate issued by the Registrar on behalf of the College of Trades to a Journeyperson. A Certificate of Qualification will serve as proof of having met any testing/program requirements and membership in the College's Journeypersons Class.

### Competence

The ability of an individual to perform a skill repeatedly and without assistance in the workplace as set out in the Log Book.

### Competency Analysis Profile (CAP Chart)

A chart that identifies the training needs of an individual trade and details the skills/skill sets that must be demonstrated during an apprenticeship program.

### Competent Person

A competent person is defined by the *Occupational Health and Safety Act* as being a person who:

- Is qualified because of their knowledge, training and experience to organize the work and its performance;
- Is familiar with the *Occupational Health and Safety Act* and its regulations that apply to the work; and has knowledge of any potential or actual danger to health or safety in the workplace.



**Competent Worker**

A competent worker is defined by the *Occupational Health and Safety Act* as being a person who:

- Is qualified because of knowledge, training and experience to perform the work;
- Is familiar with the *Occupational Health and Safety Act* and with the provisions of the regulations that apply to the work; and
- Has knowledge of all potential or actual danger to health or safety in the work.

**Sponsor**

Means a person that has entered into a Registered Training Agreement under which the person is required to ensure that an individual is provided with workplace-based training in a trade as part of an apprenticeship program established by the College of Trades.

**Sponsor of Record**

Refers to the Sponsor documented as being signatory to the current training agreement or contract. In order for a Sponsor to be considered for the training of Apprentices, they must identify that the workplace has qualified Journeypersons or the equivalent on site, and can identify that the workplace has the tools, equipment, materials, and processes which have been identified by the Industry representatives for the trade.

**Incompetence**

According to the *Ontario College of Trades and Apprenticeship Act, 2009*, a member of the College of Trades may be found to be incompetent by the College Of Trades Discipline Committee if the Committee feels that the member has displayed a lack of knowledge, skill or disregard for another person’s welfare while practising their trade. If this happens, the individual may be found unfit to practise their trade and their Statement of Membership/Certificate of Qualification may be revoked, suspended, or be subject to terms, conditions or limitations.

**Journeyperson**

Compulsory Trades Journeyperson:

- Someone who holds a valid Certificate of Qualification in the trade and who is a member in good standing of the College of Trades Journeypersons Class for the same trade; or
- Someone who holds a valid Provisional Certificate of Qualification in the trade and who is a member in good standing of the College of Trades Journeypersons Class for the same trade.

Voluntary Trades Journeyperson:

- Someone who holds a valid Certificate of Qualification in the trade and who is a member in good standing of the College of Trades Journeypersons Class for the same trade; or
- Someone who holds a Certificate of Qualification in the trade that was issued by the Ministry of Training, Colleges and Universities prior to April 8, 2013 (membership in the College of Trades is not required in this scenario).

**Journeyperson Candidates Class**

An individual who has completed an Ontario apprenticeship program (Certificate of Apprenticeship) in a voluntary or compulsory trade that has a Certificate of Qualification examination, but has not passed the Certificate of Qualification examination for their trade. There is a maximum time limit of one year to remain in the Journeyperson Candidates Class.

Are subject to any ratios and/or wage rates that have been set out for their trade(s), if they practise a compulsory trade.

Can continue to work legally in their trade if they are in a compulsory trade, as they prepare to write their examination (individuals in voluntary trades do not have to be members of the College of Trades to work legally); and can hold themselves out as Journeyperson Candidates (they are neither Apprentices nor Journeypersons).

Can remain in this class for a maximum of one year or until they pass the Certificate of Qualification exam and become members of the Journeypersons class. However, they can only remain in this class for a maximum of one year. After one year they can move into the Tradespersons Class if they are in a voluntary trade. If they are in a compulsory trade and have been in the Journeyperson Candidates Class for one year, they can no longer work legally in that trade until they pass the Certificate of Qualification examination.

**Mandatory Skill**

Status assigned to unshaded individual skills, skill sets or general performance objectives which must be signed off for the Apprentice to complete their program.

**OCTAA**

*Ontario College of Trades and Apprenticeship Act, 2009*

**Optional Skill**

Status assigned to shaded individual skills, skills sets or general performance objectives for which sign-off is not required for the Apprentice to complete the program.

**Ratios**

For up to date information regarding Journeyperson to Apprentice ratios, please visit: [www.collegeoftrades.ca](http://www.collegeoftrades.ca)

### **Red Seal Program**

The Interprovincial Standards Red Seal Program (also known as the Red Seal Program) was established more than 50 years ago to provide greater mobility across Canada for skilled workers and represents a standard of excellence for industry. Through the program, individuals are able to obtain a Red Seal endorsement on their provincial/territorial certificates by successfully completing an interprovincial Red Seal examination. The Interprovincial Standards Red Seal Program acknowledges their competence and ensures recognition of their certification throughout Canada without further examination. There are currently over 50 Red Seal designated trades. The Red Seal Program is recognized as the interprovincial *standard of excellence* in the skilled trades. The Interprovincial Standards Red Seal Program is a partnership between the Government of Canada, the Provinces, the Territories and various stakeholders.

### **Sign-off**

Signature of the Sponsor of record, or an individual to whom that Sponsor has delegated signing authority, (e.g. Trainer) indicating an Apprentice's demonstration of competence.

### **Skill**

Individual skill described in the Log Book (note: does not mean the larger skill groups referred to in the Log Book as Skill Sets, Training Units, or General Performance Objectives, but the individual skills that make up those groups).

### **Skill Sets**

Group of individual skills found in the Log Book (may also be called Training Unit or General Performance Objective).

### **Skill Set Completion for Sponsors**

Listing for all skill sets and includes space for sign-off by Sponsor of record.

### **Supervisor**

An individual who oversees the performance of a task and oversees the actions or work of others.

### **Trade Board**

Under the *Ontario College of Trades and Apprenticeship Act, 2009*, the [College of Trades Appointments Council](#) (COTAC) may appoint a Trade Board for each designated trade, composed of Employee and Employer representatives from the industry. Trade Boards are responsible for advising and making recommendations to the College of Trades Divisional Boards on issues relating to their trade. When there is no appointed trade board for a trade, the respective sector Divisional Board will act as the default Trade Board for the trade.

### **Tradespersons Class**

A Class of Membership for individuals who practise in a voluntary trade which may or may not have a Certificate of Qualification examination.

Individuals in this class:

Have been members of the Journeyperson Candidates Class or are not eligible for Journeyperson Candidates Class and have been assessed to have experience and/or qualifications that are equivalent to a Certificate of Apprenticeship in that trade

- Are preparing to write/have no plans to write/have not passed the available Certificate of Qualification exam for their trade(s);
- Can remain in this class indefinitely or until they pass the available Certificate of Qualification exam for their trade(s); and
- Can hold themselves out as tradespersons (they are neither apprentices nor journeypersons).

**Note:** Individuals in the Tradespersons Class are considered Journeypersons for the purpose of determining ratios for that trade.

### **Trainer**

A qualified Trainer in a compulsory trade is a Journeyperson with a Certificate of Qualification. In a voluntary trade, a Trainer is an individual who is considered equivalent to a Journeyperson with a Certificate of Qualification.

**In this trade a trainer must be competent in the skill, but it is not mandatory to be a member of the College of Trades or have a Certificate of Qualification (CofQ).**

## READY TO WRITE YOUR EXAM?

Many of the skilled trades in Ontario have a final certification examination that you must pass to become certified in your trade. Passing the examination gives you the right to join the Journeypersons' class of members at the Ontario College of Trades and receive a Certificate of Qualification in your trade.

There are two types of trade certification examinations in Ontario:

1. Provincial (Ontario) examinations - which lead to a Certificate of Qualification.
2. Red Seal examinations – which lead to a Certificate of Qualification with an Interprovincial Red Seal endorsement.

If a trade is designated as Red Seal in Ontario, you will be writing the Red Seal examination. To access the Red Seal preparation guide please visit: [www.red-seal.ca](http://www.red-seal.ca)

You will write an Ontario-only examination when your trade is not designated as Red Seal trade in Ontario.

### Ontario's Exam Preparation Guide

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

### Basic Examination Details for You to Know

You will have **up to four hours to write your examination**. If you need more time, you must ask for it when you schedule the examination, not on the day of your examination. You can leave the examination centre if you complete the examination in less than four hours.

You need a mark of 70% to pass.

Exam questions are multiple choice with four options from which you must choose the correct answer. Your examination may have between 90 and 150 multiple choice questions.

### Scheduling Your Examination

The examination scheduling process is currently outlined in detail on the College of Trades website: [www.collegeoftrades.ca](http://www.collegeoftrades.ca)

### Remember these 3 basic steps:

1. Confirm your eligibility to write the examination with the College of Trades.
2. Contact Client Services at the College of Trades to pay your examination fee.
3. Contact the local Ministry apprenticeship office to schedule your examination in their examination centre: <http://services.findhelp.ca/eo/tcu/appoff>

## SURFACE BLASTER TRADE GLOSSARY

acceptor	A charge of explosives or blasting agent receiving an impulse from an exploding donor charge.
airblast	The airborne shock wave or acoustic transient generated by an explosion synonymous with overpressure.
air deck	A section of unloaded blasthole which can be positioned anywhere in the hole. This technique is typically used to improve distribution of explosive energies and to reduce quantity of explosives.
air overpressure	Refer to Airblast above. Also referred to as overpressure.
"Always and Never"	List of precautions (IME Safety Library Publication No. 4) printed by the Institute of Makers of Explosives pertaining to the transportation, storage, handling and use of explosive materials. Formerly titled "Do's AND Don'ts".
Ammonium Nitrate	The ammonium salt of nitric acid represented by the formula $\text{NH}_4\text{NO}_3$ .
ampere	unit of electrical current produced by 1 volt acting through a resistance of 1 ohm.
anfo	An explosive material consisting of ammonium nitrate and fuel oil.
artificial Barricade	An artificial mound or revetted wall of earth of minimum thickness of three feet.
authorized person	An individual approved or assigned by management to perform a specific duty or duties or to be at a specific location or locations.
authority having jurisdiction	The governmental agency, office, or individual responsible for approving equipment, an installation, or a procedure.
available energy	The energy from an explosive material that is capable of performing useful work.
backbreak	Rock broken beyond the limits of the last row of holes in a blast. Synonymous with "overbreak".
ballistic mortar	A laboratory instrument used for measuring the relative power or strength of an explosive material.
barricaded	The effective screening of a building containing explosive materials from a magazine or other building, railway, or highway by a natural or an artificial barrier. A straight line from the top of any sidewall of the building containing explosive materials to the eave line of any magazine or other building or to a point twelve feet above the center of a railway or highway shall pass through such barrier.
base charge	The main explosive charge in the base of a detonator.

bench	A horizontal ledge from which holes are drilled vertically down into the material to be blasted: benching is a process of excavating where a highwall is worked in steps or lifts.
bench height	The vertical distance from the top of a bench to the floor or to the top of the next lower bench.
black powder	A deflagrating or low explosive compound of an intimate mixture of sulfur, charcoal, and an alkali nitrate, usually potassium or sodium nitrate.
blast, (blasting)	The firing of explosive materials for such purposes as breaking rock or other material, moving material, or generating seismic waves.
blast area	The area of a blast within the influence of flyrock, gases, and concussion.
blast design	A formal document which establishes and details all relevant parameters required for the Blaster to load and fire the blast.
Blaster	A qualified person in charge of, and responsible for, the loading and firing of a blast. Synonymous with “shot firer”.
blasthole	See “drill hole” and borehole.
blast pattern	The plan of the drill holes as laid out for blasting: an expression of the burden distance and the spacing distance and their relationship to each other. Synonymous with “drill pattern”.
blast parameters	All parameters used to design and define the blast such as blast pattern, blasthole diameter, blasthole depth, explosive product and blast timing.
blast proposal	A proposal which formally establishes conditions associated with the blasting operation. May include components such as project description, safety considerations, (such as loading restrictions, guard locations, limits of blast area, limits of blast site) blast designs, personnel qualifications and site restrictions.
blast site	The area where explosive material is handled during loading of blastholes, including 15.2m in all directions from the perimeter formed by loaded holes. A minimum 9.2m may replace the 15.2m requirement if the perimeter of loaded holes is marked and separated from the non-blast site by a barrier.
blast timing	See “delay sequence”.
blasting accessories	Non-explosive devices and materials used in blasting, such as, but not limited to, cap crimpers, tamping bags, blasting machines, blasting galvanometers, and cartridge punches.

blasting agent	Any material or mixture, consisting of a fuel and oxidizer, intended for blasting, not otherwise classified as an explosive and in which none of the ingredients are classified as an explosive, provided that the finished product, as mixed and packaged for use or shipment, cannot be detonated by means of a No. 8 test blasting cap when unconfined.
blasting cap	A detonator which is initiated with a safety fuse. Synonymous with “fuse cap”, also see “detonator”.
blasting crew	A group of persons who assist the blaster in loading, tying-in, and firing a blast.
Blasting Galvanometer	An electrical resistance instrument designed specifically for testing electric detonators and circuits containing them. It is used to check electrical continuity. Other acceptable instruments for this purpose are Blasting Ohmmeters and Blasters' Multimeters.
blasting log	A written record of information about a specific blast as may be required by law or regulation.
blasting machine	An electrical or electromechanical device which provides electrical energy for the purpose of energizing detonators in an electric blasting circuit. Also used in reference to certain nonelectric systems. (Sometimes called exploder or battery.)
blasting machine CD type	See Capacitor-Discharge blasting machine.
blasting machine generator type	A hand operated electromechanical device which provides an output current to energize electric detonators.
blasting rheostat	A graduated electrical resistance device used to simulate electric detonator resistances for the testing of generator type blasting machines.
blasting mat	A mat of woven steel wire, rope, scrap tires, or other suitable material or construction to cover blastholes for the purpose of preventing flying rock missiles.
blasting permit	A permit issued by an issuing authority to formally authorize the use of explosives for a specific jurisdiction, area or application.
blasting vibrations	The energy from a blast that manifests itself in vibrations which are transmitted through the earth away from the immediate blast area.
blockholing	The breaking of boulders by loading and firing small explosive charges in small-diameter drilled holes.
booster	An explosive charge, usually of high detonation velocity and detonation pressure, designed to be used in the explosive initiation sequence between an initiator or primer and the main charge.



bootleg	The part of a drilled blasthole that remains when the force of the explosion does not break the rock completely to the bottom of the hole. Synonymous with “socket”.
borehole	A hole drilled in the material to be blasted, for the purpose of containing an explosive charge, also called “blasthole” or “drill hole”.
breakage	A term used to describe the size distribution of the rock fragments created by a blast.
bridgewire	A resistance wire connecting the ends of the leg wires inside an electric detonator and which is imbedded in the ignition charge of the detonator.
brisance	The shattering power of an explosive material as distinguished from its total work capacity.
British table of distances	A quantity distance table, prepared and approved by IME, for storage of explosive materials to determine safe distances from inhabited buildings, public highways, passenger railways, and other stored explosive materials.
bulk mix	A mass of explosive material prepared for use in bulk form without packaging.
bulk mix delivery equipment	Equipment (usually a motor vehicle with or without a mechanical delivery device) that transports explosive materials in bulk form for mixing or loading directly into blastholes, or both.
bulk strength	The strength per unit volume of an explosive calculated from its weight strength and density.
bulldoze	Synonymous with “mudcapping” and “plaster”.
burden	The distance from the borehole and the nearest free face or the distance between boreholes measured perpendicular to the spacing. Also, the total amount of material to be blasted by a given hole usually measured in cubic yards or tons.
bus wire	Expendable heavy gage bare copper wire used to connect detonators or series of detonators in parallel.
calibration date	The date on which a piece of equipment (such as a seismograph) that requires calibration is formally calibrated by a recognized calibration facility to an established standard.
cap sensitive explosive material	An explosive material which will detonate with an IME No. 8 test detonator when the material is unconfined.
Capacitor Discharge blasting machine	A blasting machine in which electrical energy, stored on a capacitor, is discharged into a blasting circuit containing electric detonators.

carton	A lightweight inner container for explosive materials, usually encased in a substantial shipping container called a case.
cartridge	An individual closed shell, bag, or tube of circular cross section containing explosive material.
cartridge count (stick count)	The number of cartridges in a standard case. A standard case typically contains about 50 pounds of explosive material.
cartridge punch	A wooden, plastic, or non-sparking metallic device used to punch an opening in an explosive to accept a detonator or a section of detonating cord. Synonymous with “powder punch”.
cartridge strength	Synonymous with “bulk strength”.
case	An outer substantial shipping container meeting Transport Canada specifications for explosive materials.
case insert	A set of printed, precautionary instructions, including the Manufacturer’s "Instructions and Warnings" which is included in a case of explosive materials.
case liner	A separate barrier inside a shipping case, used to prevent the escape of explosive materials. A liner may also restrict fumes from escaping from the case and protect the explosive materials from moisture.
cast, extruded, or pressed booster	A cast, extruded or pressed solid high explosive. (See “booster”)
certified blaster	A blaster certified by a governmental agency to prepare, execute, and supervise blasting.
cfm	An abbreviation for “cubic feet per minute”, a measure of the volume of flow. Usually refers to air flow in mining usage.
circuit	A completed path for conveying electrical current. See series circuit, parallel circuit, and series in parallel circuit. (Some nonelectric systems also use the word circuit.)
collar	The uncharged portion of the blast hole at the top.
column charge	A charge of explosives in a blasthole in the form of a long continuous unbroken column.
column depth/ column height	The length of each portion of a blasthole filled with explosive materials.
commercial	Explosives designed, produced, and used for commercial or industrial explosives applications rather than for military purposes.

confined detonation velocity	The detonation velocity of an explosive material in a substantial container or a borehole.
connecting wire	Wire used to extend the firing line or leg wires in an electric blasting circuit.
continuity check	(circuit continuity check) - A determination made by instrumentation where possible, and visually in all cases, to show that an initiation system is continuous and contains no breaks or improper connections that could cause stoppage or failure of the initiation process.
contour blasting	A blasting technique used to produce smooth walls and reduce overbreak in underground blasting. The cushion holes have light, well distributed charges and are fired on the last delay period in the round.
core load	The explosive core of detonating cord, expressed as the weight in grains of explosive per metre.
coupling	The degree to which an explosive fills the cross-section of a borehole; bulk-loaded explosives are completely coupled; untamped cartridges are decoupled.
coyote shooting	A method of blasting using a number of relatively large concentrated charges of explosives placed in one or more small tunnels driven in a rock formation.
crimp	The folded ends of paper explosive cartridges; the circumferential depression at the open end of a fuse cap or igniter cord connector which serves to secure the fuse; or the circumferential depression in the blasting cap shell that secures a sealing plug or sleeve into electric or nonelectric detonators.
crimping	The act of securing a fuse cap or igniter cord connector to a section of a safety fuse by compressing the metal shell of the cap against the fuse by means of a cap crimper.
critical diameter	The minimum diameter for propagation of a detonation wave at a stable velocity. Critical diameter is affected by conditions of confinement, temperature and pressure on the explosive.
crystallization	A change in the physical properties of explosive materials and blasting agents in response to changes in temperature and component evaporation. Crystallization may result in changes to the properties of the explosive product or blasting agent.
current leakage	Portion of the firing current bypassing part of the blasting circuit through unintended paths.
cushion blasting	A blasting technique used to produce competent slopes or smooth walls. The cushion holes, fired after the main charge, have a reduced spacing and employ decoupled charges.
cutoff	A break in a path of detonation or initiation caused by extraneous interference, such as flyrock or shifting ground.

date-shift code	A code, required by Federal regulation (ERD), applied by manufacturers to the outside shipping containers, and, in many instances, to the immediate containers of explosive materials to aid in their identification and tracing.
daylighting	The act of exposing a buried service to confirm its location and prevent damage as a result of excavation operations. Excavation techniques for daylighting are typically limited to non-destructive / non-invasive methods including hand digging and hydro-vacuum equipment.
decibel	A unit of air overpressure commonly used to measure air blast.
deck loading (decking)	A method of loading blastholes in which the explosive charges, called decks or deck charges, in the same hole are separated by stemming or an air cushion.
deck	An explosive charge that is separated from other charges in the blasthole by stemming or an air cushion.
decoupling	The use of cartridge explosive products significantly smaller in diameter than the diameter of the blasthole. Decoupling or the use of decoupling charges is designed to reduce the charge concentration in the blasthole and minimize stresses exerted on the walls of the blasthole.
deflagration	An explosive reaction such as a rapid combustion that moves through an explosive material at a velocity less than the speed of sound in the material.
delay	A distinct pause of predetermined time between detonation or initiation impulses, to permit the firing of explosive charges separately.
delay blasting	The practice of initiating individual explosive decks, boreholes or rows of boreholes at predetermined time intervals using delay detonators, or other delaying means, as compared to instantaneous blasting where all holes are fired essentially at the same time.
delay detonator	An electric or nonelectric detonator used to introduce a predetermine lapse of time between the application of a firing signal and the detonation of the base charge.
delay element	The device in a delay detonator that produces the predetermined time lapse between the application of a firing signal and detonation.
delay interval	The nominal time between the detonations of delay detonators of adjacent periods in a delay series; the nominal time between successive detonations in a blast.
delay period	A designation given to a delay detonator to show its relative or absolute delay time in a given series.
delay series	A series of delay detonators designed to satisfy specific blasting requirements. There are basically two types of delay series: millisecond (MS) or short period (SP)

	with delay intervals on the order of milliseconds and long period (LP) with delay time on the order of seconds.
delay sequence	The sequence of initiating individual explosive decks, blastholes or rows of blastholes, at predetermined time intervals using delay detonators or other means of delay.
delay tag	A tag, band, or marker on a delay detonator that denotes the delay series, delay period and/or delay time of the detonator.
delay time	The lapse of time between the application of a firing signal and the detonation of the base charge of a delay detonator.
density	The mass of an explosive per unit volume, usually expressed in grams per cubic centimeter or pounds per foot. (Also see “specific gravity”).
detonating cord	a flexible cord containing a center core of high explosive which may be used to initiate other high explosives.
detonating cord ms connector	nonelectric short-interval (millisecond) delay devices for use in delaying blasts which are initiated by detonating cord.
detonating cord trunkline	the line of detonating cord that is used to connect and initiate other lines of detonating cord.
detonating primer	a name applied for transportation purposes to a device consisting of a detonator and an additional charge of explosives, assembled as a unit.
detonation	an explosive reaction that moves through an explosive material at a velocity greater than the speed of sound in the material.
detonation pressure	the pressure produced in the reaction zone of a detonating explosive.
detonating velocity	the velocity at which detonation progresses through an explosive.
detonator	Any device containing an initiating or primary explosive that is used for initiating detonation in another explosive material. A detonator may not contain more than 10 grams of total explosives by weight, excluding ignition or delay charges. The term includes, but is not limited to, electric blasting caps of instantaneous and delay types, blasting caps for use with safety fuses, detonating cord delay connectors, and nonelectric instantaneous and delay blasting caps which use detonating cord, shock tube, or any other replacement for electric leg wires.
dewater holes	The process of removing water from a blasthole prior to loading.
diameter	The cross-sectional width of a borehole or an explosive cartridge.
division 1.1	Explosive material characterized by mass exploding potential.

division 1.2	Explosive material characterized by projection hazard.
division 1.3	Explosive material characterized by fire hazard, minor blast or projection hazard.
division 1.4	Explosive material characterized by minor explosion hazard, not mass exploding.
division 1.5	Insensitive explosives. Very little probability of initiation or transition from burning to detonation during transport.
ditch blasting	The formation of a ditch by the detonation of a series of explosive charges.
donor	An exploding charge producing an impulse that impinges upon and explosive "acceptor" charge.
double cap	The application of two (2) detonators per single delay column charge in order to ensure redundancy of initiation. Detonators are typically placed at different elevations in the blasthole.
downline	A line of detonating cord or plastic tubing in a blasthole which transmits the detonation from the trunkline or surface delay system down the hole to the primer.
drill hole	A hole drilled in the material to be blasted for the purpose of containing an explosive charge, also called "blasthole" or "borehole".
drilling deviation	Unconformity of drill hole from its intended position, direction, and path.
drill log	A record of all occurrences during drilling that might help in a complete logging of the hole to assist at time of loading or in determining the cost of the drilling.
drilling pattern	The location of blastholes in relationship to each other and the free face.
dual delay	A non-electric detonator system which combine in-hole delays and surface connector delays in one product.
dummy	A cylindrical unit of clay, sand, or other inert material used to confine or separate explosive charges in a borehole.
dynamite	A high explosive used for blasting, consisting essentially of a mixture of, but not limited to, nitroglycerin, nitrocellulose, ammonium nitrate, sodium nitrate, and carbonaceous materials.
electric blast	A blast primed with electric detonators and associated wiring.
electric blasting circuit	An electric circuit containing electric detonators and associated wiring.
electric detonator	A detonator designed for, and capable of, initiation by means of an electric current.

electronic detonator	A device that utilizes stored electrical energy as a means of powering an electronic timing delay element / module and that provides initiation energy for firing the base charge.
emergency response plan	Instructions carried on a vehicle transporting explosive materials and giving specific procedures in case of emergency.
emulsion	An explosive material containing substantial amounts of oxidizer dissolved in water droplets, surrounded by an immiscible fuel, or droplets of an immiscible fuel surrounded by water containing substantial amounts of oxidizer.
energy	A measure of the potential for an explosive to do work.
ERD explosives	Explosives Regulatory Division - Federal government agency regulating explosive use in Canada.
explosion	A chemical reaction involving an extremely rapid expansion of gases usually associated with the liberation of heat.
explosive	Any chemical compound, mixture or device, the primary or common purpose of which is to function by explosion.
explosive actuated device	Any tool or special mechanized device which is actuated by explosives. The term does not include propellant-actuated devices. Examples of explosive- actuated devices are jet-tappers and jet perforators.
explosive charge	The quantity of explosive material used in a blasthole, coyote tunnel, or explosive device.
explosive loading factor	The amount of explosive used per unit of rock. Also called "powder factor".
explosive materials	These include explosives, blasting agents and detonators. The term includes, but is not limited to, dynamite and other high explosives, slurries, emulsions, and water gels; black powder and pellet powder; initiating explosives; detonators (blasting caps); safety fuse; squibs; detonating cord; igniter cord; and igniters.
explosive strength	The amount of energy released by an explosive upon detonation which is an indication of the capacity of the explosive to do the work.
extra (ammonia) dynamite	A dynamite in which part of the nitroglycerine is replaced by ammonium nitrate in sufficient quantity to result in the same weight strength.
extraneous current	Electrical energy, other than actual firing current or the test current from a blasting galvanometer, that is present at a blast site and that could enter an electric blasting circuit. It includes stray current, static electricity, RF (electromagnetic) waves and time-varying electric and magnetic fields.
fire extinguisher rating	A rating set forth in the National Fire Code which may be identified on an extinguisher by a number (5, 20, 70, etc.) indicating the extinguisher's relative

	effectiveness followed by a letter (A, B, C, etc.) indicating the class or classes of fires for which the extinguisher has been found to be effective.
fire-resistant	Construction designed to offer reasonable protection against fire.
firing current	An electric current of recommended magnitude and duration to sufficiently energize and electric detonator or a circuit of electric detonators.
firing line	The wire(s) connecting the electrical power source with the electric blasting circuit.
flammability	The ease with which an explosive material may be ignited by flame and heat.
flashover	The sympathetic detonation between explosive charges or between charged blastholes.
flash point	The lowest temperature at which vapors from a volatile combustible substance ignite in air when exposed to flame, as determined in an apparatus specifically designed for such testing.
flyrock	Rocks propelled from the blast area by the force of an explosion.
fragmentation	The breaking of a solid mass into pieces by blasting.
free face	A rock surface exposed to air or water which provides room for expansion upon fragmentation; sometimes called open face.
fume classification	See IME fume classification.
fuse	See "safety fuse".
fuse cap	A detonator which is initiated by a safety fuse; also referred to as an ordinary blasting cap. Synonymous with BLASTING CAP, also see DETONATOR.
fuse cutter	A mechanical device for cutting safety fuse clean and at right angles to its long axis.
fuse lighters	Pyrotechnic devices for the rapid and certain lighting of safety fuse.
gauge (wire)	A series of standard sizes such as the American Wire Gauge (AWG), used to specify the diameter of wire.
Galvanometer	See Blasting Galvanometer.



gap sensitivity	The maximum length of gap across which a detonation wave will travel and initiate a second or receptor cartridge. Both primer and receptor cartridge should be of the same composition, diameter, and weight. Usually refers to gap in air but other media may be used.
gelatin dynamite	A type of highly water-resistant dynamite characterized by its gelatinous or plastic consistency.
geotextile	Permeable fabrics which, when used in association with soil, have the ability to separate, filter, reinforce, protect, or drain. In blasting applications, it is typically used to contain flyrock material in conjunction with matting.
grade sheets	Documents which establish the required finished grade (elevation) for an excavation.
grains	In the avoirdupois system of weight measurement 7000 grains are equivalent to one standard 16 ounce pound (0.45 kg.). A grain is 0.0648 grams in both the avoirdupois and the troy system.
ground vibration	Shaking the ground, by elastic waves emanating from a blast; usually measured in millimetres per second of particle velocity.
guard(s)	Individual or individuals tasked with establishing the Blast Area and keeping all non-essential workers and the public out of the Blast Area in accordance with direction from the Blaster.
hangfire	The detonation of an explosive charge at some non-predictable time after its normally designed firing time.
harness wire	Wire assemblies for connecting electronic detonator and/or firing circuits.
heave	Movement or shifting of the blasted material to an intended distance and direction by the force of the blast.
Hertz (Hz)	Synonymous with "cycles per second."
high explosives	Explosives which are characterized by a very high rate of reaction, high pressure development, and the presence of a detonation wave in the explosive.
highwall	A nearly vertical face at the edge of a bench, bluff, or ledge on a surface excavation.
hole diameter	The cross-sectional width of the blasthole.
hole plugs	See "stemming plugs"
hook up	The act of connecting loaded holes together in accordance with the design delay sequence.

hot load letters	(Previously “Drill and Load Letters”) – A letter, sealed by a professional engineer and signed by the site blast crew, permitting the drilling of holes closer than 7.5m removed from a loaded hole but no closer than 1.0m removed as established in OHSA.
IME	Institute of Makers of Explosives
IME fume classification	A classification indicating the amount of carbon monoxide and hydrogen sulfide produced by an explosive or blasting agent. Explosives with positive oxygen balances are not considered as being acceptable in these classifications.
initiation	The start of deflagration or detonation in an explosive material.
initiation sequencing	The order of borehole detonations in a given blast design.
initiator	A detonator, detonating cord or similar device used to start detonation or deflagration in an explosive material.
instantaneous detonator	A detonator that has a firing time of essentially zero seconds as compared to delay detonators with firing times of from several milliseconds to several seconds.
inventory	A listing of all explosive materials stored in a magazine.
inversion	A reversal of the normal behavior of temperature in the troposphere (the region of the atmosphere nearest the Earth’s surface), in which a layer of cool air at the surface is overlain by a layer of warmer air.
issuing authority	The governmental agency, office, or official vested with the authority to issue permits or licenses.
leading (lead)	The wire(s) connecting the electrical power source with the circuit lines or wires containing electric detonators. See “firing line”.
lead-in lines	The non-electric shock tube used to connect the tied-in blast to the blast machine/device.
leakage resistance	The resistance between the blasting circuit (including lead wires) and the ground.
leg wires	The two single wires or one duplex wire extending out from an electric detonator.
loading	Placing explosive material in a blasthole or against the material to be blasted.
loading density	The weight of explosive loaded per unit length of borehole occupied by the explosive, expressed as “pounds/foot” or “kilometers/meter” of borehole.
loading pole	A non-metallic pole used to assist the placing and compacting of explosive charges in blastholes.

locates	The detection, marking and reporting of buried utility services on a job site.
loggers	An electronic device that records data over time or in relation to location either with a built in instrument or sensor or via external instruments and sensors.
lowering hook	A tool designed for lowering, dislodging or removing explosives from a borehole quickly and safely.
magazine	Any building, structure, or container, other than an explosives manufacturing building, approved for the storage of explosive materials.
magazine keeper	A person responsible for the inventory and safe storage of explosive materials, including the proper maintenance of explosive materials, storage magazines and areas.
magazine permit	A permit formally issued by the issuing authority (ERD) granting permission to install and operate a magazine for explosive product and accessory storage.
main explosive charge	The explosive material that performs the major work of blasting.
manufacturing codes	Code markings stamped on explosive materials packages, indicating among other information, the date of manufacture.
matting	The operation of placing blasting mats on a blast to prevent flyrock.
millisecond	One thousandth part of a second (.001 1/1000 sec.)
minimum gap sensitivity	An air gap, measure in inches or centimeters, which determines whether the explosive material is within specific tolerances for gap sensitivity. Also see “gap sensitivity”.
misfire	A blast or specific borehole that failed to detonate as planned. Also, the explosive material itself that failed to detonate as planned.
miss holes	Specific holes in a misfire which failed to fully or partially detonate
ms connectors	Nonelectric, short-interval (milliseconds) delay devices for use in delaying blasts which are initiated by detonating cord. Same as “detonating cord ms connectors”.
muckpile	The pile of broken material resulting from a blast.
mudcapping	A mud covered or unconfined charge fired in contact with a rock surface without the use of a borehole. Synonymous with “bulldoze”.
multiple path trunkline system	Duplication or repetition of trunkline elements in a blast initiation system to provide alternate paths of initiation.

nitroglycerin	An explosive chemical compound used as a sensitizer in dynamite and represented by the formula $C_3H_5(ONO_2)_3$ .
non-electric blast	A blast that does not employ the use of electric detonators for sequencing or initiation.
non-electric detonator	A detonator that does not require the use of electric energy to function.
non-sparking metal	A metal that will not produce a spark when struck with other tools, rock, or hard surfaces.
overbreak	See "backbreak".
overburden	Material of any nature laying on top of a deposit of material which is to be mined.
overhang	A section of a geological formation that is undermined and therefore represents a greater risk of failure. Can be a naturally occurring geological formation or may result from previous blasting.
oxidizer or oxidizing material	A substance, such as a nitrate, that readily yields oxygen or other oxidizing substances to promote the combustion of organic matter or other fuel.
oxygen balance	The percentage of oxygen in an explosive material or ingredient thereof in excess of ( + ) or less than ( - ) that which is needed to produce ideal reaction products.
particle velocity	A measure of the intensity of ground vibration, specifically the velocity of motion of the ground particles as they are excited by the wave energy.
pattern dimensions	See Blast Pattern.
petn	An abbreviation for the name of the explosive pentaerythritol tetranitrate.
placards	Signs placed on vehicles transporting hazardous materials (including explosive materials) indicating the nature of the cargo.
pneumatic loading	The loading of explosive materials into a borehole using compressed air as the loading or conveying force.
powder	A common synonym for explosive materials.
powder punch	See "cartridge punch".
powder factor	The amount of explosive used per unit of rock. Also called "explosive loading factor".
powder retriever	A non-sparking, specialized tool designed and used for the removal of explosives from a loaded blasthole.

pre-blast design	A document containing details (blasting parameters) of a blast, or blasts, that are submitted to authorities prior to loading an initiation of the blast(s).
preblast survey	A documentation of the existing condition of structures near an area where blasting is to be conducted.
premature firing	The detonation of an explosive charge before the intended time.
presplitting (preshearing)	A smooth blasting method in which cracks for the final contour are created by firing a single row of holes prior to the initiation of the rest of the holes in the blast pattern.
prilled ammonium nitrate	Ammonium nitrate in a pelleted or prilled form.
primary blast	A blast used to fragment and displace material from its original position to facilitate subsequent handling and crushing.
primary explosive	A sensitive explosive which nearly always detonates by simple ignition from such means as spark, flame, impact, friction, or other primary heat sources of appropriate magnitude.
primer	A unit, package, or cartridge of explosives used to initiate other explosives or blasting agents, and which contains (1) a detonator; or (2) detonating cord to which is attached a detonator designed to initiate the detonating cord.
propagation	The detonation of an explosive charge by an impulse received from an adjacent or nearby explosive charge.
quantity distance table	A table listing minimum recommended distances from explosive materials stores of various weights to a specific location.
radio frequency energy (rf)	The energy radiated as electromagnetic waves in the radio frequency spectrum.
radio frequency transmitter	An electronic transmitting device which radiates radio frequency waves. The transmitting device may be fixed (stationary) or mobile, and includes car telephones, citizen band radios, AM and FM radio transmitters, television transmitters and radar transmitters.
receptor (acceptor)	A charge of explosive materials receiving an impulse from an exploding donor charge.
regression analysis	A process using formulas and/or graphs to determine attenuation (dissipation) of vibrations induced (generated) by a blast at given distances from the blast.
relief	The effective distance from a blasthole to the nearest free face.
resistance	The measure of opposition to the flow of electrical current, expressed in ohms.

rifling	Ejection of gases upon detonation from a blasthole due to unconfined explosion. (commonly occurs due to lack of adequate stemming)
safety fuse	A flexible cord containing solid flammable material by which fire or flame is conveyed at a continuous and uniform rate from the point of ignition to a cut end. A fuse detonator is usually attached to that end, although safety fuse may be used without a detonator to ignite material such as deflagrating explosives.
safety standard	Suggested precautions relative to the safety practices to be employed in the manufacture, transportation, storage, handling and use of explosive materials.
scaled distance	A factor relating similar blast effects from various weight charges of explosive material at various distances. Scaled distance referring to blasting effects is obtained by dividing the distance of concern by a fractional power of the weight of the explosive materials.
scanners	An electronic device used to profile the face of a blast to delineate true burden prior to loading and/or blasting. Also referred to as "face profiler".
seam	A stratum or bed of coal or other material. May also refer to a crack or joint in a blast area which may be filled with mud or other material. A seam may be in any orientation.
secondary blasting	Blasting to reduce the size of boulders resulting from a primary blast.
seismograph	An instrument, useful in monitoring blasting operation, which records ground vibration. Particle velocity, displacement, or acceleration is generally measured and recorded in three mutually perpendicular directions.
semi-conductive hose	A hose used for pneumatic conveying of explosive materials having an electrical resistance high enough to limit flow of stray currents to safe levels yet not so high as to prevent drainage of static electric charges to ground. Hose of not more than 2 megohms resistance over its entire length and of not less than 1,000 ohms per foot meets the requirements.
sensitivity	A physical characteristic of an explosive material classifying its ability to be initiated upon receiving an external impulse such as impact, shock, flame, friction, or other influences which can cause explosive decomposition.
separation distances	Minimum recommended distances from explosive materials accumulations to other specified locations.
shaped charge	An explosive with a shaped cavity, specifically designed to produce a high velocity cutting or piercing jet of product reaction; usually lined with metal to create a jet of molten liner material.
shelf life	The maximum storage period during which an explosive material retains adequate performance or physical characteristics.

shock tube	A small diameter plastic tube used for initiating detonators. It contains only a limited amount of reactive material so that the energy that is transmitted through the tube by means of a detonation wave is guided through and confined within the walls of the tube.
shock wave	A transient pressure pulse that propagates at supersonic velocity.
short delay blasting	The practice of detonating blastholes in successive intervals where the time difference between any two successive detonations is measured in milliseconds.
shot	See “blast”.
shot firer	See “blaster”. (A shot firer usually refers to an underground coal mine blaster).
shunt (shunting)	The shorting together of the free ends of (1) electric detonator leg wires, or (2) the wire ends of an electric blasting circuit or part thereof. The term also applies to an electrical shorting device applied to the free ends of electric detonators by the manufacturer.
shunting leg wires	See Shunt (Shunting)
signature hole	A recorded vibration wave induced by detonation of a single blasthole.
slumping	The typically undesired collapsing or sinking of the explosive column loaded into a blasthole.
slurry	An explosive material containing substantial portions of a liquid, oxidizers and fuel, plus a thickener.
Society of Chemical Manufacturers and Affiliates	A non-profit chemical trade organization of companies in the U.S. Canada and other parts of the world who manufacture chemicals for sale.
spacing	The distance between boreholes. In bench blasting, the distance is measured parallel to the free face and perpendicular to the burden.
specific gravity	The ratio of the weight of any volume of substance to the weight of an equal volume of pure water.
splicing kit	(For non-electric tube) – Specially designed adapters to permit the joining of individual lengths of shock tube.
stability	The ability of an explosive material to retain chemical and physical properties specified by the manufacturer when exposed to specific environmental conditions over a particular period of time.
steady state velocity	The characteristic velocity at which a specific explosive at a given charge diameter will detonate.

stemming	Inert material placed in a borehole on top of or between separate charges of explosive material. Used for the purpose of confining explosive materials or to separate charges of explosive material in the same borehole.
stemming ejection	See “rifling”
stemming plugs	A plastic, vinyl or foam plugs used to seal explosive column in the blasthole at the bottom of collar.
storage	The safekeeping of explosive materials, usually in specially designed structures called magazines.
subdrilling	The practice of drilling boreholes below floor level or working elevation to insure breakage of rock to working elevation.
sympathetic detonation	The detonation of an explosive material as the result of receiving an impulse from another detonation through air, earth or water. Synonymous with “sympathetic propagation”.
sympathetic propagation	See “sympathetic detonation”.
tamping	The action of compacting the explosive charge or the stemming in a blasthole. Sometimes refers to the stemming material itself.
tamping poles	A wooden or plastic pole used to compact explosive charges or stemming.
test blast	An initial trial blast to evaluate blast design, assess local site conditions and ensure safety procedures on-site.
tie in	The process of connecting detonators together to form a complete and sequenced blast prior to initiation.
toe	In bench blasting, excessive burden measured at the floor level of the bench.
toe burden	The actual measured distance from the free face to the blast hole at design grade.
tool box meeting	A site specific safety meeting regularly scheduled and typically occurring on site between supervisors and workers. The meeting is intended to address specific safety topics to enhance prevention, and to identify safety concerns and disseminate information on accidents, incidents and near misses over the period between scheduled meetings.
true burden	The actual measured distance from the free face to the blast hole.
unconfined detonation velocity	The detonation velocity of an explosive material fired without confinement: for example, a charge fired in the open. (Paper tubes are generally not considered as confinement.)



underbreak	Rock remaining within a specific excavation perimeter that was inadequately fragmented during the blast according to design.
utility company permits	A permit issued by an issuing authority to formally authorize the use of explosives for a specific site, area or application.
voids	Air gaps within an explosive column in a blasthole. Also referred to as cavities and enlarged spaces within a drilled hole.
v.o.d.	Velocity of detonation.
water gel	An explosive material containing substantial portion of water, oxidizers and fuel, plus a cross-linking agent.
water hammer	An effect that may occur when explosives are detonated under water.
water resistance	The ability of an explosive to withstand the desensitizing effect of water penetration.
weight strength	The energy of an explosive material per unit of weight. Often expressed as a percentage of the energy per unit of weight of a specified explosive standard.

## INSTRUCTIONS FOR RECORDING A CHANGE IN SPONSOR

1. Record your first sponsor's information in Sponsor Record #1 – this would be the sponsor who has signed your initial apprenticeship Training Agreement for this trade.
2. If you do change sponsors prior to completing this apprenticeship, please contact your local Ministry of Training, Colleges and Universities Apprenticeship Office immediately to update your sponsor record.
3. Please make sure you do record all of the information regarding any additional sponsors of record towards your apprenticeship using the Sponsor Records on the following pages (if applicable).

**You must fill out a CHANGE OF SPONSOR RECORD each time you change your sponsor.**

**SPONSOR RECORD #1**

SPONSOR INFORMATION	
Apprentice Name	
Registered Training Agreement #	
Sponsor Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	

**RECORD OF SKILL ATTAINMENT**

SKILL I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***\*If you need additional copies of the Sponsor Record, please photocopy as needed or visit [www.collegeoftrades.ca](http://www.collegeoftrades.ca) and search Sponsor Record Form.***

**SPONSOR RECORD #2**

SPONSOR INFORMATION	
Apprentice Name	
Registered Training Agreement #	
Sponsor Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	

**RECORD OF SKILL ATTAINMENT**

SKILL I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***\*If you need additional copies of the Sponsor Record, please photocopy as needed or visit [www.collegeoftrades.ca](http://www.collegeoftrades.ca) and search Sponsor Record Form.***

**SPONSOR RECORD #3**

SPONSOR INFORMATION	
Apprentice Name	
Registered Training Agreement #	
Sponsor Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	

**RECORD OF SKILL ATTAINMENT**

SKILL I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***\*If you need additional copies of the Sponsor Record, please photocopy as needed or visit [www.collegeoftrades.ca](http://www.collegeoftrades.ca) and search Sponsor Record Form.***

**SPONSOR RECORD #4**

SPONSOR INFORMATION	
Apprentice Name	
Registered Training Agreement #	
Sponsor Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	

**RECORD OF SKILL ATTAINMENT**

SKILL I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***\*If you need additional copies of the Sponsor Record, please photocopy as needed or visit [www.collegeoftrades.ca](http://www.collegeoftrades.ca) and search Sponsor Record Form.***

## INSTRUCTIONS FOR APPRENTICESHIP PROGRAM COMPLETION (Appendix A)

Once an Apprentice has completed all the classroom training and on-the-job hours specified for the trade, and has acquired all the mandatory skills included in this Log Book:

1. The Apprentice and the Sponsor complete the Apprentice Completion Form and the Skill Set Completion for Sponsors Form located on the following pages.
2. They sign the forms and submit them to their local Ministry of Training, Colleges and Universities apprenticeship office. (To find the closest office, check the contact information at <http://services.findhelp.ca/eo/tcu/appoff> or call the Employment Ontario toll free number at (1-800-387-5656).
3. (Former ACA): Since this trade is competency based, all mandatory skills in the training standard must be signed off. If the Sponsor is completing the Apprentice before the industry recommended training hours are done, Ministry staff may request further information regarding the Apprentice's on-the-job training. An example of a request would be a letter from the Sponsor confirming the Apprentice worked for some time in the trade before the initial Training Agreement was registered, thereby acquiring some skills beforehand.

If Apprentices are submitting the completion request form and supporting documentation to their local Ministry of Training, Colleges and Universities apprenticeship office by mail, fax, or email (as a scanned document), they should not include their training standard; if they are presenting this form in person at the local apprenticeship office, they should bring their training standard with them.

After Ministry staff verifies all the information in the completion request, they may contact either the Apprentice or the Sponsor for further information or documentation. Once the completion has been confirmed, the Ministry will issue a Certificate of Apprenticeship to the Apprentice.

The Ontario College of Trades will receive notification of this completion, and complete the individual's membership in the Apprentices class for the trade. If the Apprentice has completed a program in a compulsory trade, the College of Trades will automatically register the Apprentice as a member of the Journeyperson Candidates class so the Apprentice can continue to work legally for one year while preparing for the certification examination. If an apprentice completes their apprenticeship in a voluntary trade **and** there is no Certificate of Qualification exam, they can apply for membership in the Journeypersons Class at the Ontario College of Trades. If there is a Certificate of Qualification exam, they must write and pass the exam in order to enter the Journeypersons Class at the Ontario College of Trades.

For permission to schedule an exam once completion is confirmed by the Ministry, the individual must first contact the College's Client Services Department at 647-847-3000 or toll free at 1-855-299-0028 to pay the certification examination fee.

## APPRENTICE COMPLETION FORM (Appendix B)

Please fill out both sides of this form, including the Skill Set Completion for Sponsors (see back of form). Once both sides are completed, submit the form to your local Ministry of Training, Colleges and Universities apprenticeship office (find contact information at <http://services.findhelp.ca/eo/tcu/appoff> or by calling Employment Ontario at 1-800-387-5656).

APPRENTICE INFORMATION	
Name (print)	
Client ID # Issued by Ministry	
Telephone Number(s)	

SPONSOR INFORMATION	
Legal Name	
Address	
Telephone Number(s)	
Sponsor's Signing Authority ( <i>print name</i> )	
E-mail Address	

PROGRAM INFORMATION			
Trade Name			
Number of hours required as per Training Agreement ( <i>for hours-based trades only</i> )			
Hours completed?_ ( <i>documentation attached</i> )	Yes ( )	No ( )	Not applicable ( )
Classroom training completed or exempt?	Yes ( )	No ( )	Not applicable ( )

I hereby confirm that the information submitted on both sides of this form is true and accurate.

**X** \_\_\_\_\_  
Apprentice's signature                      Date

**X** \_\_\_\_\_  
Signature of Sponsor's Signing Authority                      Date



## SKILL SET COMPLETION FOR SPONSORS (Appendix C)

*You will find the skill set numbers and titles in the Training Standard's Table of Contents. By signing off each skill set in the table below, you are providing final confirmation, as the Apprentice's Sponsor, that the Apprentice has demonstrated competency in all the mandatory skills included in the skill set.*

SKILL SET #	SKILL SET TITLE	SIGNING AUTHORITY SIGNATURE
U8030.0	Protect Self and Others	
U8031.0	Communicate in Workplace	
U8032.0	Assess Blasting Area and Site	
U8033.0	Control Blast Area	
U8034.0	Develop / Implement Blast Design	
U8035.0	Load Blast Holes	
U8036.0	Maintain Accessories	
U8037.0	Control Fly Rock	
U8038.0	Hook up and Initiate Blast	
U8039.0	Assess Blast Results	

### MINISTRY OF TRAINING, COLLEGES AND UNIVERSITIES USE ONLY:

Sponsor verified as most recent sponsor of record:                      Yes ( )                      No ( )  
 Documentation to support completion of hours attached:                      Yes ( )                      No ( )  
 Completion of classroom training verified:                      Yes ( )                      No ( )

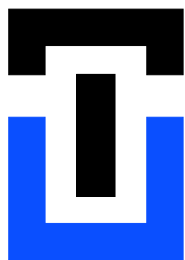
Staff Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

## MTCU APPRENTICESHIP OFFICES IN ONTARIO (Appendix D)

Location	Contact	Location	Contact
<b>Barrie</b> 705-737-1431	55 Cedar Pointe Dr Unit 609, Barrie, ON L4N 5R7	<b>Mississauga (City of)</b> 905-279-7333	The Emerald Centre, 10 Kingsbridge Garden Cir Ste 404, Mississauga, ON L5R 3K6
<b>Belleville</b> 613-968-5558	135 North Front St, Belleville, ON K8P 3B5	<b>North Bay</b> 705-495-8515	200 First Ave West, North Bay, ON P1B 3B9
<b>Brantford</b> 519-756-5197	505 Park Rd North Suite 201, Brantford, ON N3R 7K8	<b>Ottawa</b> 613-731-7100	Preston Square, 347 Preston St 3rd Flr, Ottawa, ON K1S 3H8
<b>Chatham</b> 519-354-2766	870 Richmond St West 1st Floor, Chatham, ON N7M 5J5	<b>Owen Sound</b> 519-376-5790	1450 1st Ave West Suite 100, Owen Sound, ON N4K 6W2
<b>Cornwall</b> 613-938-9702	132 Second St East Ste 202, Cornwall, ON K6H 1Y4	<b>Pembroke</b> 613-735-3911	615 Pembroke St East, Pembroke, ON K8A 3L7
<b>Dryden</b> 807-223-4632	Provincial Government Building, 479 Government St, Dryden, ON P8N 3K9	<b>Peterborough</b> 705-745-1918	901 Lansdowne St West, Peterborough, ON K9J 1Z5
<b>Elliot Lake</b> 705-848-4661	50 Hillside Dr North, Elliot Lake, ON P5A 1X4	<b>Pickering (City of)</b> 905-837-7721	1420 Bayly St Unit 1, Pickering, ON L1W 3R4
<b>Fort Frances</b> 807-274-8634	922 Scott St 2nd Flr, Fort Frances, ON P9A 1J4	<b>Sarnia</b> 519-542-7705	Bayside Mall, 150 Christina St North, Sarnia, ON N7T 7W5
<b>Hamilton Central</b> 905-521-7764	Ellen Fairclough Bldg, 119 King St West 8th Flr, Hamilton, ON L8P 4Y7	<b>Sault Ste. Marie</b> 705-945-6815	477 Queen St East 4th Flr, Sault Ste Marie, ON P6A 1Z5
<b>Kapuskasing</b> 705-337-4381	Ontario Government Complex, 122 Government Rd West, Kapuskasing, ON P5N 2X8	<b>St Catharines</b> 905-704-2991	Garden City Tower, 301 St Paul St 10th Flr, St Catharines, ON L2R 7R4
<b>Kenora</b> 807-468-2879	227 1/2 Second St South, Kenora, ON P9N 1G4	<b>Sudbury</b> 705-564-3030	159 Cedar St Ste 506, Sudbury, ON P3E 6A5
<b>Kingston</b> 613-548-1151	Cornell Corporate Centre, 299 Concession St Ste 201, Kingston, ON K7K 2B9	<b>Thunder Bay</b> 807-346-1550	189 Red River Rd Suite 103, Thunder Bay, ON P7B 1A2
<b>Kingston</b> 613-545-2455	308 Wellington St Unit 101, Side Entrance (at Rideau Terrace), Kingston, ON K7K 7A8	<b>Timmins</b> 705-235-1950	Ontario Government Complex, 5520 Highway 101 East Wing B, South Porcupine, ON P0N 1H0
<b>Kitchener</b> 519- 653-5758	4275 King St East Ste 200, Kitchener, ON N2P 2E9	<b>Toronto Central</b> 416-326-5800	625 Church St 1st Fl, Toronto, ON M7A 2B5
<b>London</b> 519-675-7788	1200 Commissioners Rd E Unit 72, London, ON N5Z 4R3	<b>Windsor Central</b> 519-973-1441	Roundhouse Centre, 3155 Howard Ave 2nd Fl, Ste 200, Windsor, ON N8X 4Y8

For current office listings, please visit: <http://services.findhelp.ca/eo/tcu/appoff>





**ONTARIO COLLEGE OF TRADES**

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**ORDRE DES MÉTIERS DE L'ONTARIO**

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