



Underground Pipeline Specialists



**“I’ve been where you are.
I know good help is really hard to find.
That’s why I started this company.”**



My name is Stephen Mercer, President and Owner of Empipe Solutions. I have spent over 20 years working in the sewer maintenance and pipe rehabilitation industry, getting my start with one of the largest leading firms in the field. While there I personally tackled every job possible; from the bottom of maintenance holes, to equipment operator, to Project Superintendent on multi-million dollar contracts. At each stage, I learned what it takes to do the job right.

I also learned that my biggest challenge was finding sub-contractors who could deliver a quality job, and do so within the quote and schedule that they originally promised. I became so frustrated with unexpected cost over-runs and delays that I took the job into my own hands. Literally. In 2007 I went out, bought a truck, and serviced the jobs myself that no one else seemed capable of doing (at least, not up to my own standards).

Today I have a growing staff and a fleet of trucks. I still maintain the same tough standards that built this company (as my employees will be sure to tell you). And when needed, I'll get into that maintenance hole with my crew. Your satisfaction, and my standards, are my prime concern.

By the way, I apply the same tough standards to a private home project as I do to a major city contract. I tell my staff, "Quality is quality, so do it right or stay home."

There are no short cuts to doing a job properly; just skill and experience.

Stephen Mercer

Stephen Mercer, President



Underground Pipeline Specialists

**“Our business is simple:
You’ve got a problem. You want it fixed right.
That’s what we do; making it right.”**



Here's a brief description of our services.
There's more details on the following pages.

Sewer Flushing:

Clogged sewers are a hazard for home-owners and municipalities alike. Empipe has a full range of equipment to handle sewer cleaning operations of any scale.

CCTV Sewer Inspection:

CCTV Sewer inspections are an intricate part of evaluating your pipes' overall condition and performance. Empipe has a full range of the latest CCTV equipment capable of inspecting pipes of all sizes.

CIPP Trenchless Pipe Repair:

Empipe specializes in the cured-in-place-pipe (CIPP) process. Because surface digging is not required, the trenchless pipe repair method minimizes inconveniences to the public.

Home Drain Inspection and Repair:

Empipe are experts at sewer maintenance and solving any home drainage problem.

Robotic Cutting:

Our robotic cutting services have saved general contractors thousands of dollars by remotely repairing defects.

Hydro Excavation:

Hydro excavation is a mechanical means of using high-pressure water to break up soil while simultaneously removing the mud with a powerful vacuum.

Maintenance (MH) Rehabilitation:

Empipe offers a full range of services for MH Rehabilitation.

Not sure if we can do it? Just ask. If we can't do the job, we'll refer you to a reputable competitor. At Empipe, customer satisfaction truly has meaning.



Underground Pipeline Specialists

Sewer flushing and CCTV Sewer Inspection:



Sewer Flushing:

Clogged sewers are a hazard for both home-owners and municipalities alike. Regardless of the cause, a timely response with the correct equipment is required. Empipe has a full range of equipment to handle sewer cleaning operations of any scale.



CCTV Sewer Inspection:

CCTV Sewer inspections are an intricate part of evaluating your pipes' overall condition and performance. Empipe has a full range of the latest CCTV equipment capable of inspecting pipes of all diameters. Empipe uses NAAPI-certified operators and software to ensure your CCTV inspections are completed accurately.



Underground Pipeline Specialists

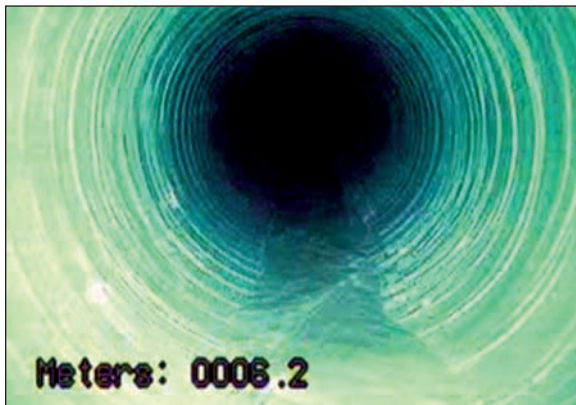
CIPP Trenchless Pipe Repair:



Empipe specializes in the cured-in-place-pipe (CIPP) process.

How it works

The CIPP process uses custom-manufactured felt tubes that are impregnated with a polyester thermo-setting resin. These tubes are inserted into the damaged section of a sewer, usually through an existing maintenance hole. Water pressure or air is used to propel the tube through the pipe, which turns the tube inside out and presses it against the walls of the existing pipe. This is like pushing the end of a sock until it is “inside out” or inverted. When the tube reaches an endpoint, the water or air inside the tube is heated which causes the resin to cure and harden.



Typical example of a sewer pipe, showing the result of the CIPP process.

The result is a sturdy, jointless new pipe within the old pipe. Once in place, a robotic cutter slices through the wall of the new pipe and restores the service connections. To verify success, CCTV video cameras are fed through the pipes and every inch is visually inspected. This pipe rehabilitation method provides a structurally sound pipe that is also resistant to the corrosive environment that exists in sewer lines.

The benefits

The rehabilitated pipe is both sturdy and efficient. This process restores the original life to the pipe while saving the cost of digging and service line re-routing. This trenchless alternative minimizes damage to existing pavement and reduces long-term street repair costs. Because surface digging is not required, the trenchless pipe repair method minimizes inconveniences to the public.

The CIPP process results in significant savings. When compared to a conventional open-cut pipe replacement, in addition to notable cost savings, a cured-in-place-pipe repair can be done in much less time, without large excavations. A conventional open-cut sewerline replacement takes more than two weeks per block with significant disruption to traffic and service; a CIPP project takes only two days and is completed without any excavation. Sewer rehabilitation also has a number of positive environmental effects.



Underground Pipeline Specialists

Home Drain Inspection and Repair:



Very few first-time home buyers ask for a sewer inspection before purchase. Sewer inspections are not something most buyers think about. They know to get a home inspection, but sewer lines are almost an after thought, if it crosses a buyer's mind at all. Yet it's one of the most important inspections a buyer should conduct.

The time to find out if a sewer is faulty or needs replacement is before buying a home, not after.

Why Inspect the Sewer Line?

Obtain a sewer inspection if the home is older than 20 years. Although the sewer line may be fairly new, tree roots can still clog up a 20-year-old sewer line.

Tree roots growing into sewer lines is a common problem. Roots crawl into tiny openings and expand in the sewer line, latching on to other debris which causes backups. Sometimes chemicals can kill the tree's roots, but if the roots reappear, the pipe may be damaged and require excavation to fix the problem.

Homes that were constructed prior to city sewers often relied on cesspools. After cities installed public septic systems, sometimes the cesspools were left intact and connected to the sewer line. You won't know unless you inspect the sewer. Many homes built from the 1860's to the 1970's have sewer lines made from pitch fiber or tar paper called 'black pipe' or Orangeburg pipes. These disintegrate and collapse over time. It has been taken off the list of acceptable materials by most building codes. If a home has fiber piping, the sewer line definitely needs to be replaced.

How to Inspect a Sewer Line

We insert a 'snake' attached to a small CCTV video camera into the clean-out and feed the camera through your sewer. You can watch the image on a monitor. Not only will we find out if the sewer line is clean or clogged, but the inspection will disclose the condition of the sewer. We can tell you what kind of material was used to construct the sewer line and whether that type of material is considered up to code. It might cost anywhere from \$85 to \$300 to have the sewer line inspected, but considering the cost to replace a sewer line, it's money well spent.

(contd.)



Underground Pipeline Specialists

Home Drain Inspection and Repair (pg.2):

Should you require a new sewer line, we can use the trenchless method, which involves pulling a new sewer line through the existing sewer without the need to dig. Trenchless sewers cost almost one-third less than digging up the entire yard and replacing the sewer.

Drainage problems are caused by several factors, including the condition of the sanitary sewer system itself, natural phenomena such as earth movement and rain, and the incorrect usage of the system by the public. Empipe are experts at sewer maintenance and solving any home drainage problem.

The following are examples of some typical sanitary sewer system problems:

Accumulation of Solids like fats, oils, grease, dirt, bones, tampons, paper towels, diapers, broken dishware, garbage, concrete, and other debris can buildup in the pipe and cause system problems, slow draining and backups.

Structural Defects in pipes and maintenance holes, significant sags or bellies in the main, cracks, holes, protruding lateral pipes, misaligned, offset and open pipe joints, and collapsing pipe sections, all impact your home drainage system.

Undersized Sewer Pipes are a growing issue. The existing sewer system is overloaded due to new sewer hook-ups, underground water infiltration, and illegal roof and yard drain connections.

Inflow and Infiltration Problem: As a sewer system ages it is in constant need of inspection and repair. Cracked and broken sewer lines, and maintenance holes, can allow ground water to enter the system. In addition to groundwater, illegal storm water connections and roof downspouts add rain-water to the sewer system. This additional water volume is called inflow and infiltration. During a heavy rain, this additional water can overburden the sewer system and cause overflows and basement flooding. Disconnecting downspouts and other fixtures that collect storm runoff lessens the chances of pipes being overloaded.

Tree Roots are a common cause of backups. Root problems tend to occur in the older areas of any city where trees are more established. The systems servicing these areas consist of older asbestos

cement and clay tile pipes which usually do not have permanent seals at the joints, which roots can penetrate. Air and nutrient-rich water can seep from the pipes, creating an ideal growing medium for roots at any depth. These can penetrate the pipe joints and cracks, then fill the pipes with a root mass. If allowed to continue growing, they may exert enough pressure to spread the cracks of the joint or point of entry, increasing the problem.

The use of plastic pipes can help eliminate root problems, as long as the pipes joints are properly sealed. Cutting roots out of the pipe is a temporary fix. Like pruning, it can encourage even more growth. Treating the roots and filling the holes with special grout or relining the pipe is the most effective treatment to help prevent re-growth.

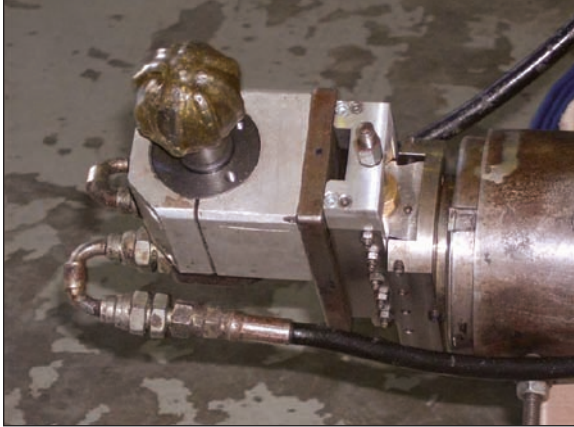
Fat, Oil and Grease from cooking and food preparation that is poured down the drain can solidify, build up and plug drain lines in your building or home. They can also plug the sewer lines owned by the City, thus increasing the maintenance cost. Plugged sewers can also cause home flooding. Also, the discharge of sewer effluent and sewer overflows can significantly impact the environment, particularly if sewage reaches fish bearing waters.

From 50 - 70 % of all sanitary sewer system problems overflows are caused by accumulations of fats, oils and greases discharged to it from the preparation and serving of food. In the food industry, "grease" often refers to fats and oils derived from animal and vegetable sources. Common sources of fat, oil and grease are meats and poultry, dairy and pasta products, vegetable and plant oils, soups, gravies, chili, sauces, and condiments, as well as waxes and paraffins.

Avoid disposing of any fat or grease down your home or work drain. Greasy pans should be wiped down with paper towels, or the grease placed into a container to solidify, and then disposed of in your regular garbage. The use of low phosphate soaps for dishes and laundry is also recommended.

If you suspect that there is grease build up in your line, or other deficiencies, we suggest inspecting your entire drainage system to determine the physical and operating condition of the system located on your property.

Robotic Cutting:



A critical part of sewer rehabilitation is the reconnection of the laterals, after a sewer pipe has been relined. Depending on the length and location of the relining project, an underground contractor may need to reinstate just a few lateral connections, or have a hefty job of more than a hundred connections. Proper equipment, and the skill to use it, is a must to make this process go smoothly and quickly. Empipe has both.

A lateral cutter (or Robotic Cutting) is a remotely-controlled unit used to reinstate the lateral connections in the renewed pipe. Its function is straight-forward: the robot cutter unit is inserted into the renewed mainline, and advanced toward the lateral connection (located via a coordinated measurement). The cutter makes an initial hole to relieve any flow that may have accumulated in the lateral, and to help remove the remainder of the lining material from the lateral opening. Once this opening is cleared, the lateral can be reconnected.

The robotic cutting services of Empipe has saved general contractors thousands of dollars by remotely repairing defects in pipes, thus avoiding the excessive cost of excavations.



Underground Pipeline Specialists

Hydro Excavation and Maintenance (MH) Rehabilitation:



Hydro Excavation:

Hydro excavation is a mechanical means of using high-pressure water to break up surrounding soil while simultaneously removing the mud with a powerful vacuum. This method is a safe, non-destructive means of excavation which replaces conventional backhoe and digging techniques.

Applications for hydro excavation include subsurface utility engineering (SUE), pole and post hole installation, exposing underground utilities, curb stop repairs, anode installation, horizontal directional drill (HDD) projects, basement excavation and renovation, foundation repair, excavating in frozen ground, stump removal, creating trenches for geo-thermal installation, and more.



Maintenance (MH) Rehabilitation:

Empipe offers a full range of services for MH Rehabilitation including inflow protector bins, frame reconstruction, internal chimney seals, brickwork rehab, ladder rung installation, joint and crack sealing, benching and Pumping Station rehabilitation.



Underground Pipeline Specialists

Case Study No.1: City of Hamilton, Multi-year Sewer Rehabilitation.

"This project was a multi-year sewer rehabilitation contract consisting of flushing, CCTV inspection, and the removal of mineral deposits and protruding laterals. We worked in a variety of pipe diameters from 200mm up to 1050mm. Empipe used a wide variety of equipment along with our expertise to achieve superior results.

We used our robotic cutters to cut back protrusions and remove mineral deposits in areas where poor pipe conditions did not allow more aggressive

techniques. Flushers, pipe cutters and reamers were used to remove deposits to contract specifications, without causing damage to the existing pipe. We prepared over 70 km of pipe for rehabilitation without any excavations.

John Cowperthwaite is still a Project Manager with the City of Hamilton. His testimonial (see below) points to the fact that, even though we are not supervised by the city, we still keep our standards high." -Stephen



Hamilton

Public Works Department
Environment and
Sustainable Infrastructure

320 - 77 James Street North
Hamilton, Ontario, Canada L8R 2K3
905-546-2424 x4314 (telephone)
905-546-2870 (facsimile)
John.Cowperthwaite@hamilton.ca

January 18/10

To whom it may concern:

Re: Steve Mercer & Empipe Solutions Ltd.

I have known and worked with Steve Mercer since 2002 and Empipe since their inception. Throughout the years I have had the pleasure of working with Steve Mercer on a number of contracts. I was thrilled when I was told that Mr. Mercer was starting his own company and had absolute confidence that Empipe Solutions Ltd. would flourish.

Recently, Empipe worked as a subcontractor on a contract that I was involved with and I was very impressed with the workmanship and concern for safety shown in an atmosphere that was not City of Hamilton supervised. The quality of the work submitted was above average and I would welcome the opportunity to work with them again in the future.

In all cases their professionalism in getting the job done without compromise to quality or safety has been very impressive. If you have any questions regarding the aforementioned, please contact the undersigned.

Sincerely,

John Cowperthwaite, C.E.T.
Project Manager, Construction Section
Engineering Services
Environment and Sustainable Infrastructure Division
Public Works Department



Underground Pipeline Specialists

Case Study No. 2: Catalina Excavating Inc., Money-saving Solution.



“Over the years, we have worked on many projects for Catalina Excavating. One specific job saved them considerable money. In this case, a road had been freshly paved, but an inspection of the main showed a drain protruding into the sewer and another drain that was not capped off. Catalina was very concerned that the new pavement would have to be dug up, at substantial expense, not to mention disruption to local residents. Empipe was able to cut back the protrusion with a robotic cutter and install a spot repair over the drain which required capping. All of this work was performed from an existing maintenance hole, saving the road pavement, and keeping disruption to a minimum.

We also routinely hydro-excavate existing utilities for Catalina so that their excavators don't need to work around gas and water mains. We have also completed numerous CCTV inspections and sewer flushings for them.” -Stephen

Testimonial:

This letter is written as testimony to the professional and competent service we have received from Empipe Solutions. We have hired Empipe on numerous occasions and have had successful results each and every time. We have used their services for Catch Basin and Manhole cleaning, for remote sewer repairs, and most recently in exposing utilities during a Water Main replacement. For every event that Empipe has worked for us they have been timely, professional, and have safety setups that insure that the job is done on schedule. Mr. Steve Mercer, our contact at Empipe Solutions has always been available for consultations and has provided us with proper documentation to satisfy our customers. Our company recommends Mr. Mercer and Empipe Solutions for your underground work.

*Sincerely,
Guy Beiter, CFO
Catalina Excavating Inc., Stoney Creek ON*



Underground Pipeline Specialists

Case Study No. 3: New Alliance Ltd., Our Commitment to Quality.



Our CCTV studio facility and
a sample of our
clearly-labeled DVDs.



"We have completed several contracts of post-construction CCTV inspection, and sewer flushing. Hernan's testimonial below expresses our commitment to each of our customers."
- Stephen

Testimonial:

Steve, I would like to thank you for all the help and support you and Empipe have provided to New Alliance Ltd. Since we started dealing with you, it was clear that you understood the work and what was required for each municipality. In the past, when we dealt with your competitors, I have had experiences where the videos submitted were not to specifications. Not every company is as diligent as you in keeping up with changes in video specifications.

I would also like to compliment you on the presentation and quality of your video: from the cover label each CD has, to your impeccable report. When we submit your videos to our clients, the quality and professionalism is apparent by the positive reactions we always receive.

In our industry your videos are very important to us as contractors, since in most cases the holdback release depends on them. Your constant availability and hard work makes this process much easier.

Congratulations!

Regards,
Hernan J. Ayala, P.Eng
General Manager
New Alliance Ltd., Oakville ON



Underground Pipeline Specialists

Case Study No. 4: Tembec Industries Inc., A Tight Timeframe Challenge.



"This was a special job. The Tembec pulp and paper mill in Témiscamingue Quebec was on its yearly shutdown for maintenance cleaning. As a major employer in the area, the plant can not afford to be closed for long. We had only 36 hours to clean the 1,000 feet of their 100-year old wooden box culvert. This sewer had not been cleaned properly in many years, so we cleared out many large items that had not been removed by previous cleaning companies. In addition to the tight time frame, we had to complete much of our work using breathing apparatus, and over large open pits. The plant's health and safety team observed our work and was very impressed with the performance of our team. Not only was the antique culvert properly cleaned out, we did it within the project deadline." - Stephen

Testimonial:

As a first time dealing with Empipe we had an outstanding experience. The level of professionalism shown on a continual basis certainly compliments their exceptional products and services. When dealing with Empipe, we have no doubt that we are getting nothing but the best in quality.

On behalf of Tembec Inc., I would like to take this opportunity to thank you for the excellent service your company has provided us. Empipe Solution Ltd. has demonstrated a high level of character and integrity in all aspects of underground pipeline services. At Tembec Inc., we would highly recommend your company as an underground pipeline specialist.

*Mahmoud Hammouda, EIT
Mechanical Project Engineer
Tembec Industries Inc.
Témiscamingue QC*



Underground Pipeline Specialists

Case study No.5: City of Welland, Basement Flooding Prevention.

"The City of Welland has been working hard to reduce basement flooding. Our role was to assist with drain lining of sewer laterals. We used our expertise in trenchless repair to provide the least amount of disruption possible." - Stephen



CITY OF WELLAND

Engineering, Public Works and Transportation Services
Office of the City Engineer
60 East Main Street, Welland, ON L3B 3X4
Phone: 905-735-1700 Fax: 905-735-7184
www.welland.ca

April 8, 2010

To Whom It May Concern:

**RE: Empipe Solutions Ltd.
Trenchless Sewer Repair**

As part of the City of Welland's basement flooding prevention program and extraneous flow reduction program, the City retained Empipe Solutions Ltd. in order to complete trenchless repairs of sanitary sewer laterals.

At all times Empipe has been excellent in every aspect of their service to the City of Welland. This includes customer contact and liaison, attention to our needs, workmanship, and follow-up. The aforementioned has resulted in a pleasant and worry-free experience for this project.

Based on my favourable experience with Empipe, I would not hesitate to recommend them to others involved in CCTV inspection and trenchless sewer lateral repairs.

Sincerely,

Erik D. Nickel, P.Eng.,
Special Projects Engineer



Underground Pipeline Specialists

**“Please join our growing list of clients.
You’ll be in good company.”**



Brennan Paving
Carillion Canada
Catalina Excavating
City of Halifax
City of Hamilton
City of London
City of Peterborough
City of Toronto
Haldimand County
New Alliance Construction
Rankin Construction
Stantec Consulting
Tembec Inc.
Wes Roc Construction

Stephen Mercer

Stephen Mercer, President



Underground Pipeline Specialists

Confined Space:



Confined space environments pose many dangers. At Empipe, we understand the hazards involved so we use only experienced crews who know horizontal pipe entry and tank work. We have the equipment, training and skill needed to enter any confined space safely.

Enclosed areas or “confined spaces” in sewers and wastewater treatment plants (or anywhere rotting organic material is found) are notorious for accumulations of hydrogen sulfide which can kill workers who are not prepared or properly trained. Confined spaces can also develop life-threatening oxygen deficiencies and generate explosive methane gas. For this reason, Empipe has strict confined space standards which requires the air to be monitored, a means to safely rescue workers if they are overcome by fumes, and extensive training.



Underground Pipeline Specialists

Bypass pumping:



A successful sewer bypass or de-watering project requires three things:

- Properly sized pumps and piping
- Versatility in equipment to ensure the correct units are applied to your application
- Experience to bring value and innovation to your project

At Empipe you get all three at no extra charge!

With our supplier network we can provide you with direct rental equipment that you set up. Or, if you prefer, we offer a complete turn-key bypass that can be monitored 24 hours a day by Empipe.

Our fully-trained staff are made completely aware of your specific job requirements, so there's no surprises, no matter how unique your project may be. Want to know the pump efficiency at a given RPM and what the NPSR is? Not a problem! We have every answer.



Underground Pipeline Specialists

Health & Safety:



The management of Empipe Solutions is seriously committed to health and safety. The protection of all of our employees from occupational injury or disease is a top priority. We make every effort to provide a safe, healthy work environment. Both management and workers are dedicated to the highest standards of safety, to reduce risk of any injury.

Empipe acquaints every worker with their rights and duties in the workplace, as well as the applicable regulations and procedures for protecting their health and safety. Where appropriate, Empipe establishes specific work practices and standards to maintain the safest conditions possible. We also encourage and facilitate employee participation in health and safety planning and activities.

By complying with prevailing regulations and the safe practices and procedures established by Empipe Solutions, which exceed government regulations, all our staff protect their own health and safety, as well as those of the public.

All our supervisors and employees are regularly trained in:

- Fall Protection Awareness
- Confined Space Entry Awareness and Rescue
- Self Contained Breathing Apparatus
- First Aid and CPR
- Traffic Control Procedures

Safety for all concerned is never separated from doing the job right. Through continuous training, diligent maintenance of all our equipment, and proper supervision, we at Empipe Solutions have an enviable safety record.



Underground Pipeline Specialists

Traffic Control (Book 7):



The Ontario Traffic Manual (Book 7) outlines basic uniform requirements for traffic control in work zones during roadway and maintenance operations on, or adjacent to, public highways, municipal roads and streets. Safety for workers, motorists and pedestrians is paramount, including the workers setting up, operating, and removing traffic control.

All Empipe employees are Book 7 trained. In fact, our own safety standards often exceed those required by Book 7 and the Ontario Traffic Conference. At Empipe, safety for all concerned is never separated from doing the job right.



Underground Pipeline Specialists

Licenses & Certification:



When choosing a service, you want to know they're qualified to do the job. Empipe is certified and licensed by all the major associations in the field. All of our employees undergo regular training and course upgrades. It's just one of the many ways we make sure every job is done right.

Certification:

- NASSCO- National Association of Sewer Companies, Certificate of Membership
- CATT- Centre for the Advancement of Trenchless Technologies with the University of Waterloo
- PACP- Certified Employees in Pipeline Assessment and Certification Program from NASSCO
- NAAPI- Certified Employees in North American Association of Pipeline Inspectors

Licenses:

- Licensed installer of the FORMADRAIN™ Pipe Rehabilitation System
- Licensed installer of the INFRASTRUCTURE™ Repair and Manhole Rehabilitation System

Safety training:

All Empipe employees receive regular training in:

- Emergency First Aid and CPR-C
- OTM Book 7 (Traffic Control)
- Confined Space Entry Awareness and Rescue
- Fall Protection Awareness
- Self Contained Breathing Apparatus
- Workplace Health and Safety



Underground Pipeline Specialists