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Union Gas Limited Utility Cross Bore Safety Program

**Fort Frances
May 15 2013**

CALL BEFORE YOU CLEAR



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<http://vimeo.com/37822753>

Trenchless Technologies

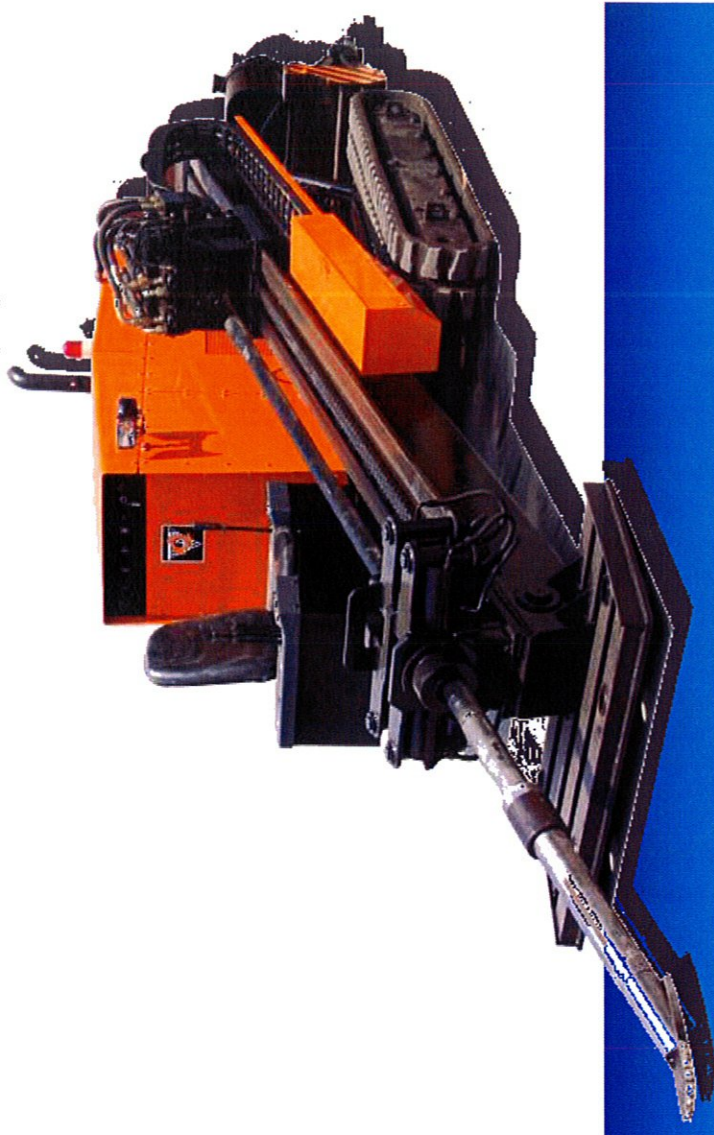


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- The use of trenchless technologies starting in early 1980's
 - Is used to save on installation costs in built up areas where open trench methods would be prohibitive.
 - Is more commonly used in urban areas vs. rural.
 - Is used to install plastic pipe more often than steel pipe due to ease of installation.



Utility Cross Bore



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- Sewers are traditionally difficult to locate due to non-metallic nature, lack of tracer wire, and poor records
- A utility cross bore is an unintended intersection of an existing underground utility by a second utility, that can occur during construction that uses trenchless technologies.
- A cross bore resulting in direct contact of both facilities compromises the integrity of both facilities.



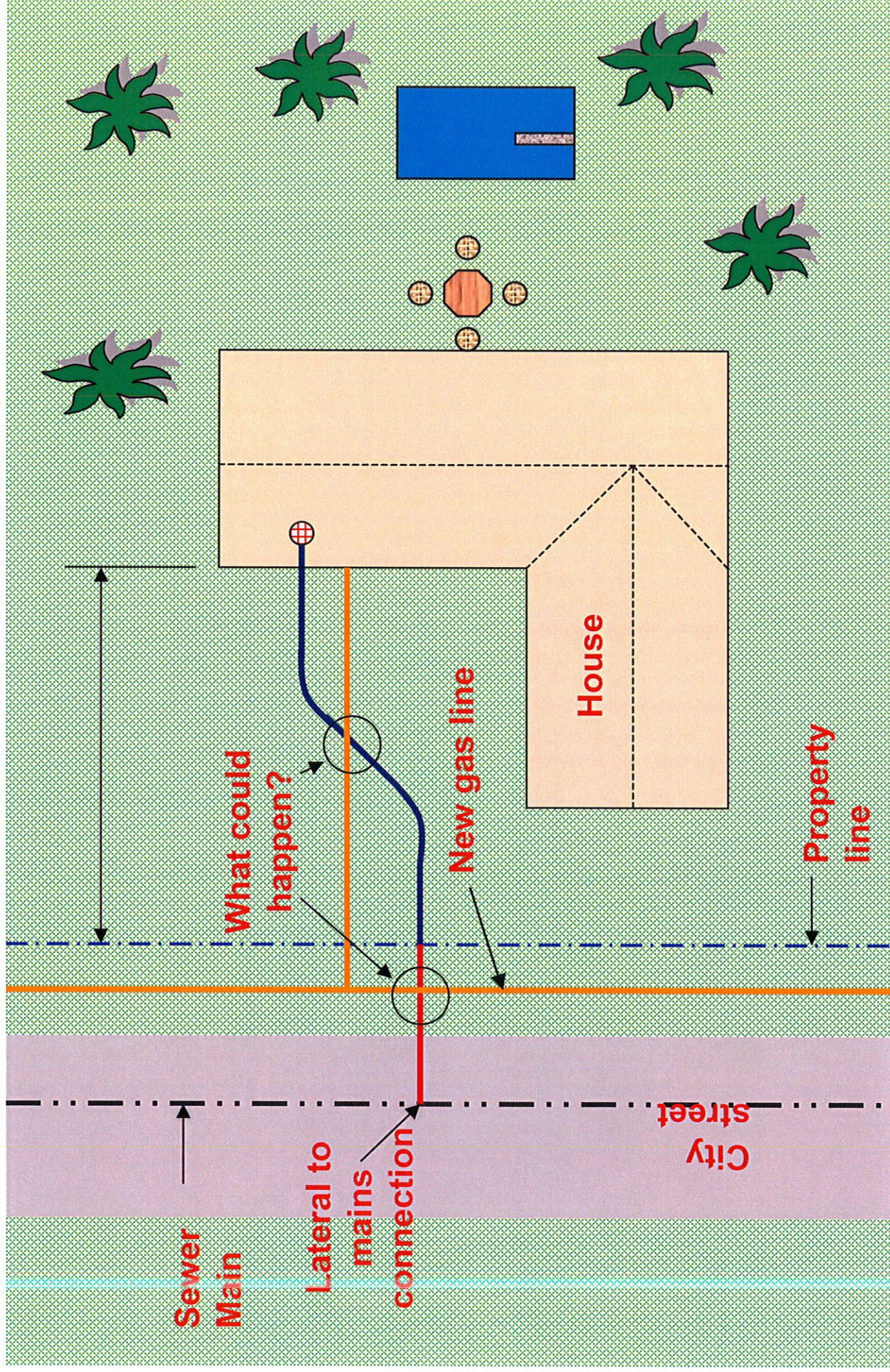
Cross Bore Scenario



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Sewer Blockage Removal Tools

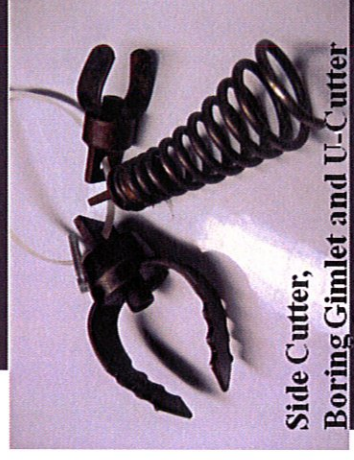


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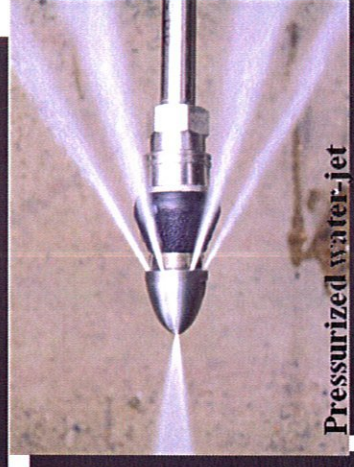
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- Rotating equipment, including sewer snakes, can easily cut into plastic natural gas lines
- Pressurized water-jetting equipment can pierce or erode plastic natural gas lines
- Non-rotating or sewer/drain clearing equipment (fish tapes or non-rotating rodders) pose little risk to plastic natural gas lines



Side Cutter,
Boring Gimlet and U-Cutter



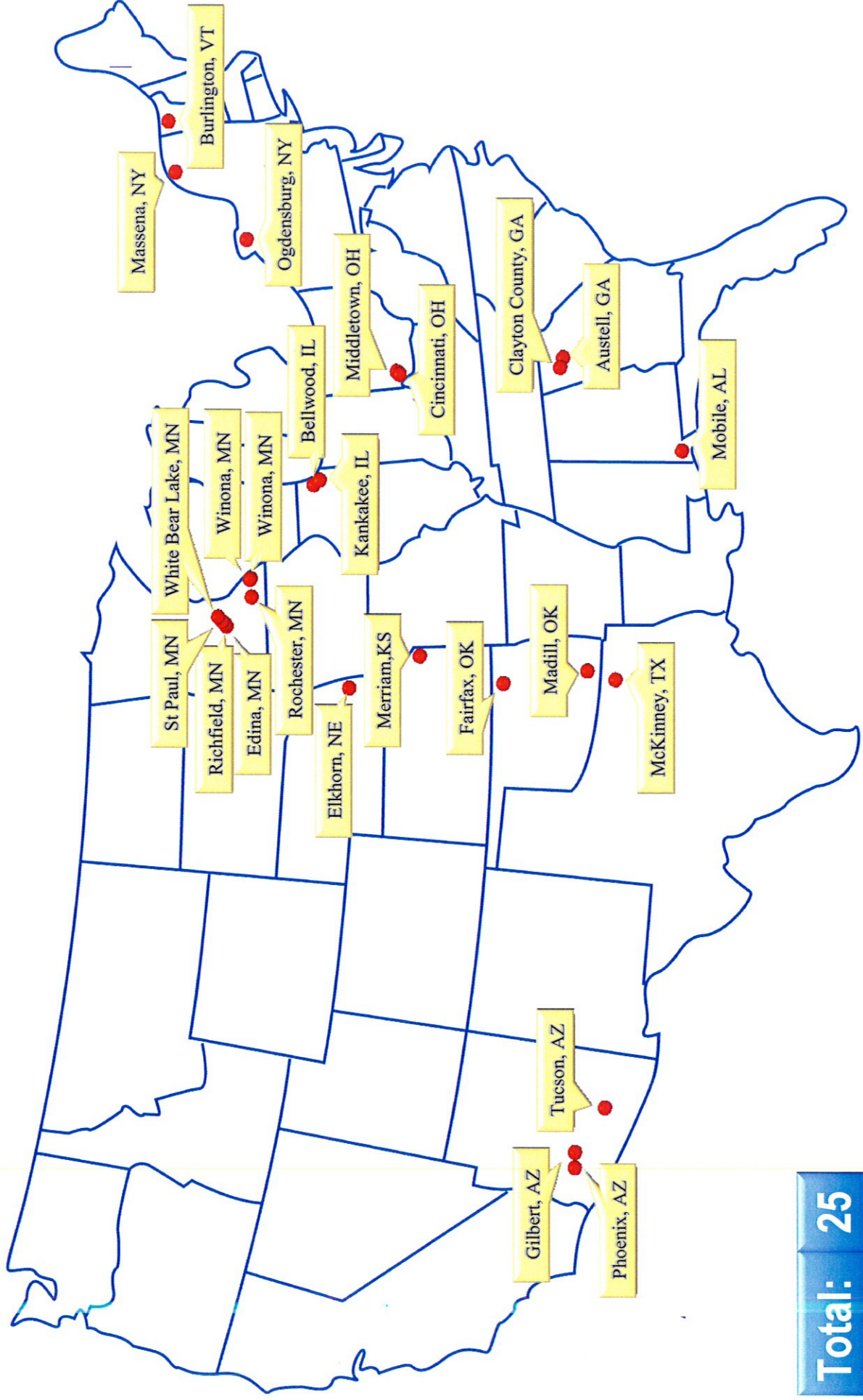
Pressurized water-jet

Sewer Cross Bore Incidents



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Total: 25

Ogdensburg, New York



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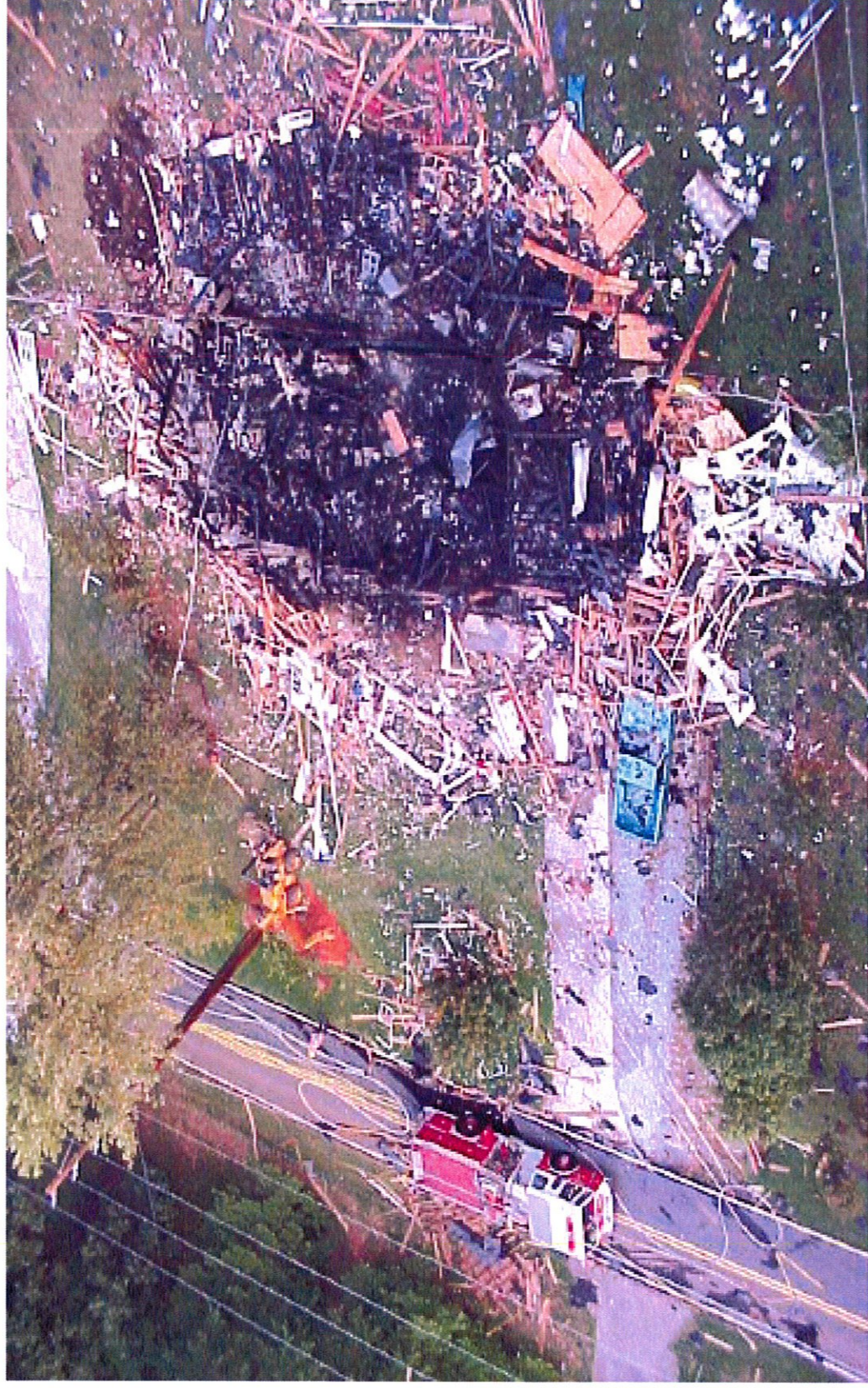
Austell, Georgia



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Recent Incident

- Chicago's South West side
- Home owner using a power-rodder in the sewer line
- Power-rodder struck gas line and got stuck. owner gave up and left.
- The house filled with gas from a slow leak.
- Next morning home owner turned power-rodder on, the spark caused an ignition
- Home owner operating the power-rodder in hospital in critical condition
- 3 families displaced from their home

Chicago Tribune

Breaking News, Since 1847

Travel Health Opinion Real Estate Cars Jobs **Deals**

World Obituaries Health Clout St. Politics Watchdog Schools Religion Lottery

Rebuilding homes and lives

November gas explosion scattered families to hotels, loaner apartments, hospital for the holidays

December 26, 2011 | By Becky Schlikerman, Chicago Tribune reporter



1



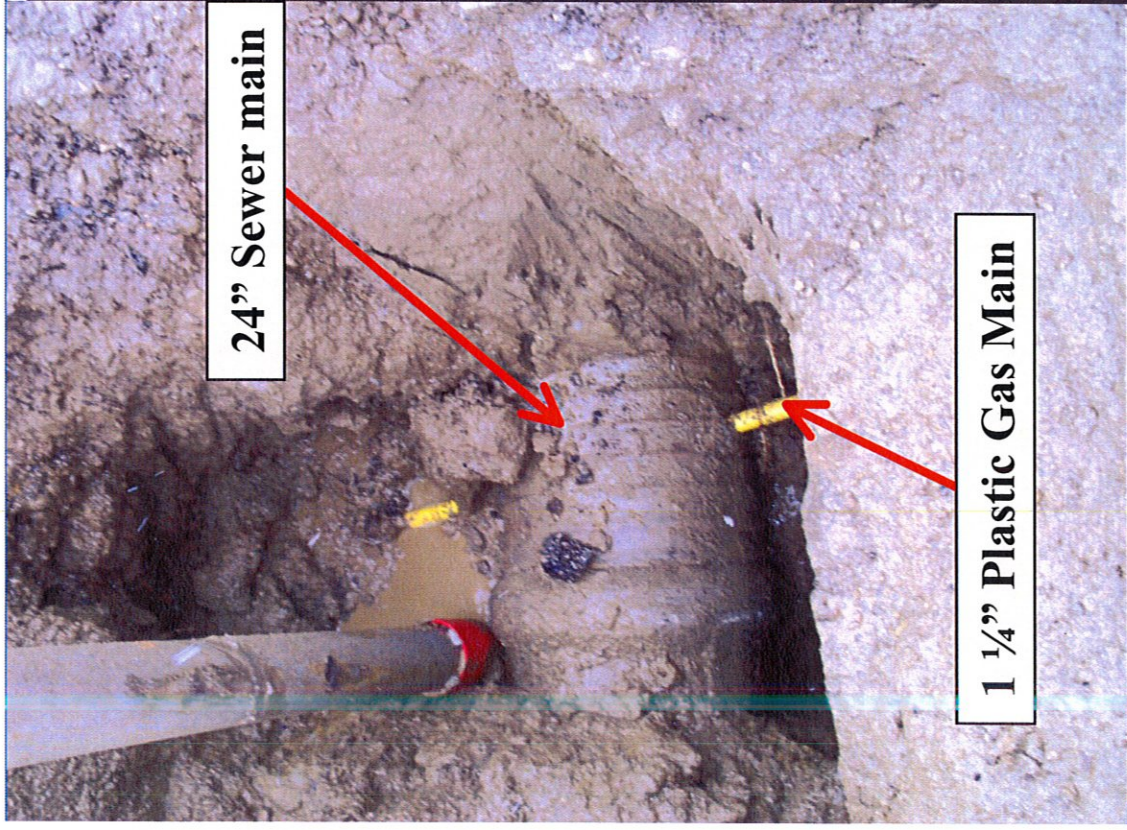
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Sewer Cross Bore – Scenario # 1



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- Discovered Feb 1, 2011 – routine camera maintenance by the City
- Installed July 1999

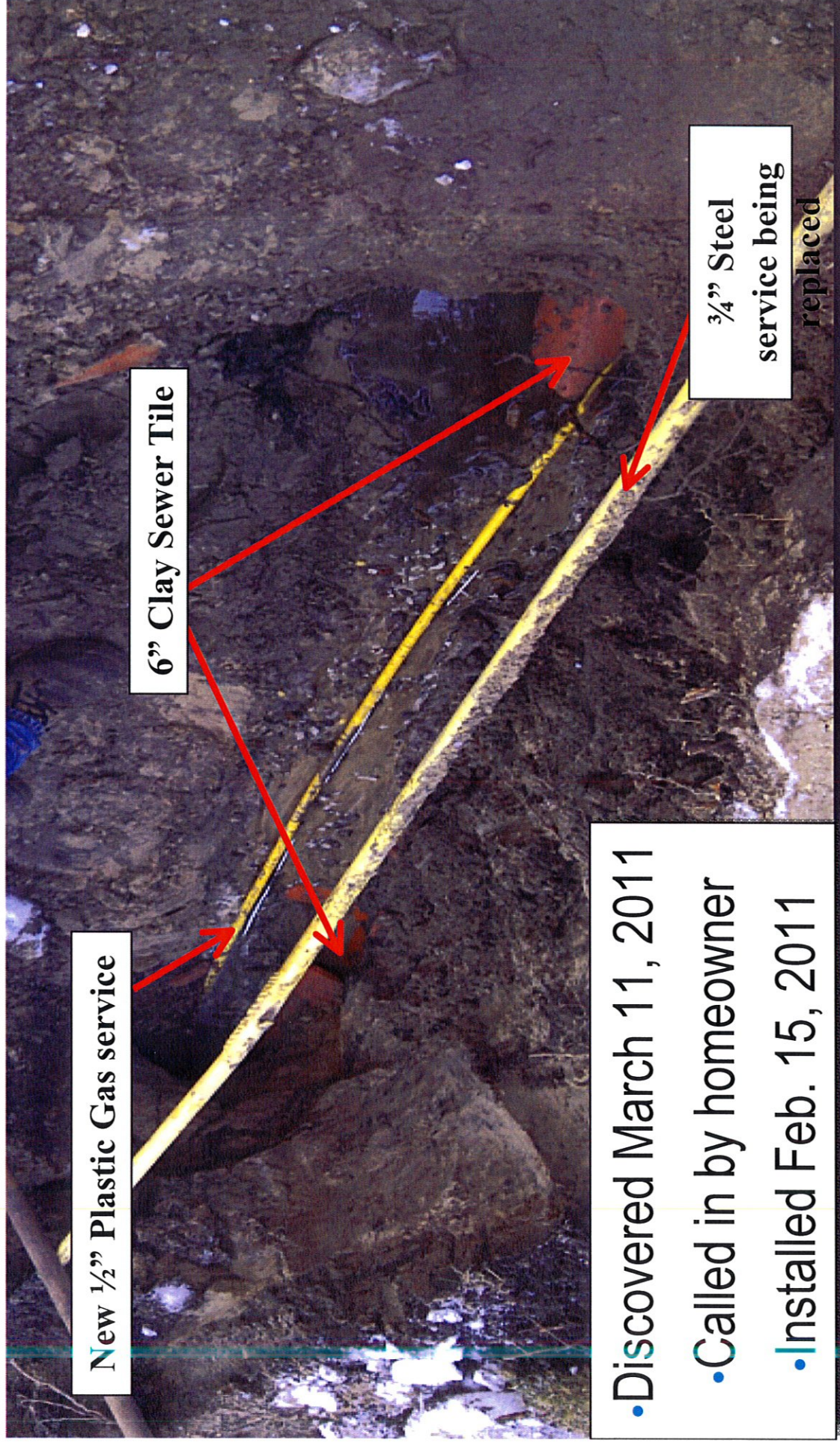
Sewer Cross Bore – Scenario # 2



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- Discovered March 11, 2011
- Called in by homeowner
- Installed Feb. 15, 2011

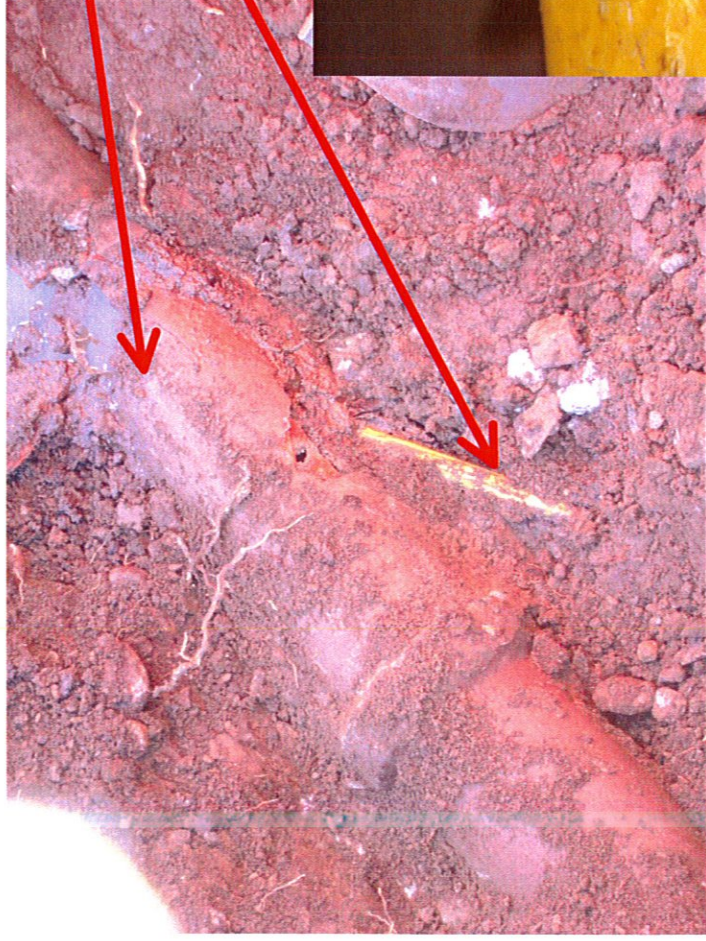
Sewer Cross Bore – Scenario # 3



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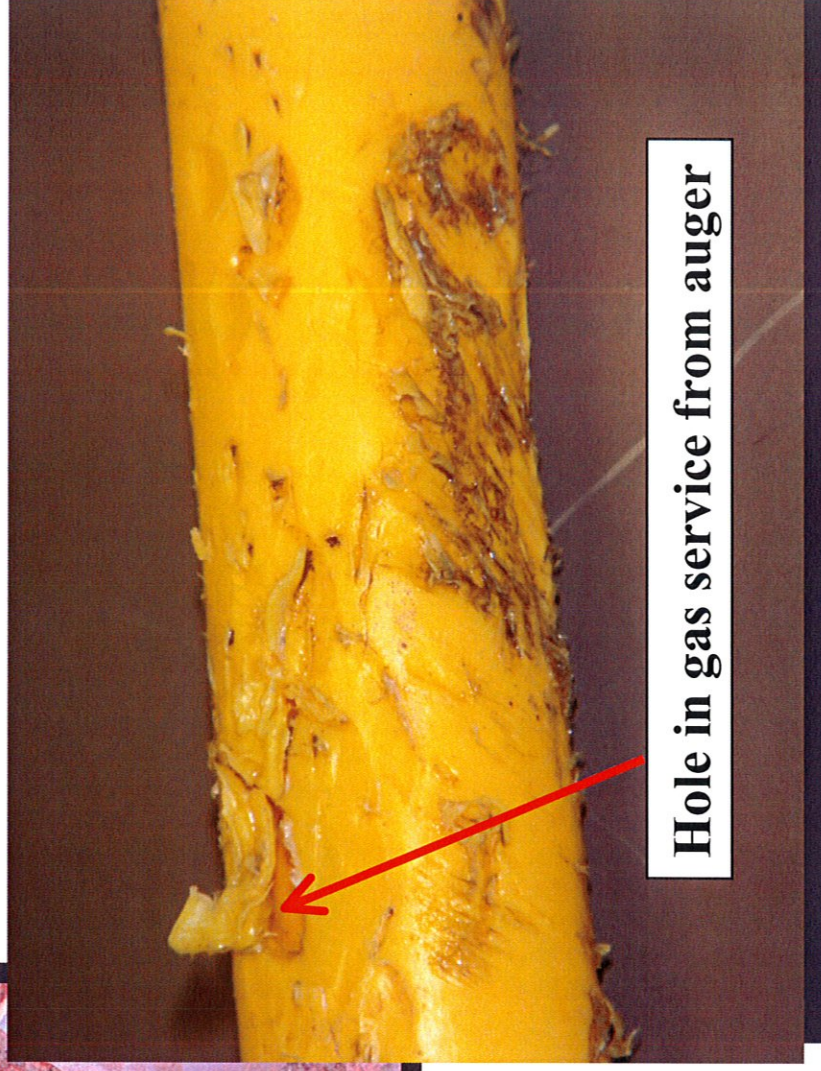
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6" Clay Tile

3/4" Plastic Gas Service



Hole in gas service from auger

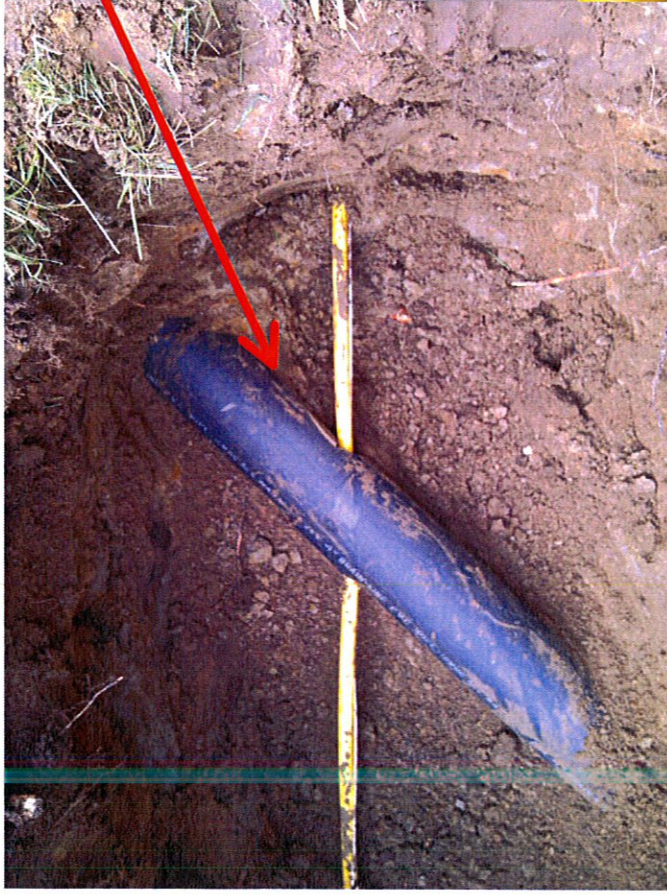
- Discovered Feb 9, 2011
- Installed Oct 2010

Sewer Cross Bore – Scenario # 4



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4" PVC



**1/2" Plastic Gas Service
with EFV**

TSSA Directors Order: August 31/11



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- Clause 12.10.13.1 of CSA Z662-07 is amended by adding the following clause:
12.10.13.1.3 natural gas distributors shall incorporate in their Distribution Pipeline Integrity Program Management an action plan that includes:
 - a. A description of the steps to mitigate the potential of penetration of sewer lines by a natural gas pipeline during trenchless installation,
 - b. A program that raises stakeholder awareness of the potential safety issue that could arise when attempting to clear a blocked sewer service line beyond the outside walls of a building, and
 - c. An assessment of potential risks and a plan to mitigate these risks.
- **This action plan shall be completed and available for TSSA inspection by October 30, 2011.**



Fuels Safety Program	Ref. No.: FS-188-11	Rev. No.:
OIL AND GAS PIPELINE SYSTEMS CODE ADOPTION DOCUMENT - AMENDMENT	Date: August 31, 2011	Date:

IN THE MATTER OF:

THE TECHNICAL STANDARDS AND SAFETY ACT, 2000,
S.O. 2000, c. 16 (the "Act")

- and -

ONTARIO REGULATION 223/01 (Codes and Standards Adopted by Reference)
made under the Act

- and -

ONTARIO REGULATION 210/01 (Oil and Gas Pipeline Systems)
made under the Act

Subject:

Cross Bore Issue - Clearing Blocked Sewer Service Lines, Amendment to the Oil and Gas Pipeline Systems Code Adoption Document

Sent to:

Gas Advisory Council, Risk Reduction Group-Pipelines, Posted on TSSA's Web-Site, other Stakeholders.

The Director of Ontario Regulation 210/01 (Oil and Gas Pipeline Systems), pursuant to section 8 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), hereby provides notice that the Oil and Gas Pipeline Systems Code Adoption Document published by the Technical Standards and Safety Authority and dated June 1, 2001, as amended, is further amended as follows:

Utility Cross Bore Safety Program



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Sewer Safety Inspection (SSI) Program

- Locate sewer and gas lines (LSP)
- Response due to sewer blockage (emergency)

Sewer Safety Investigation Program

- Camera sewer line (VIP)
- Emergency response from sewer locate
- Planned investigation of sewers from historical data

New Installation Program

- Process and procedures to be used to ensure that new cross bores are not created when using trenchless technology

Education and Awareness Program

- Municipalities
- Industry (plumbers, sewer companies, rental companies etc)
- Public (homeowners, businesses, institutions etc)

Canadian Gas Association and Enbridge

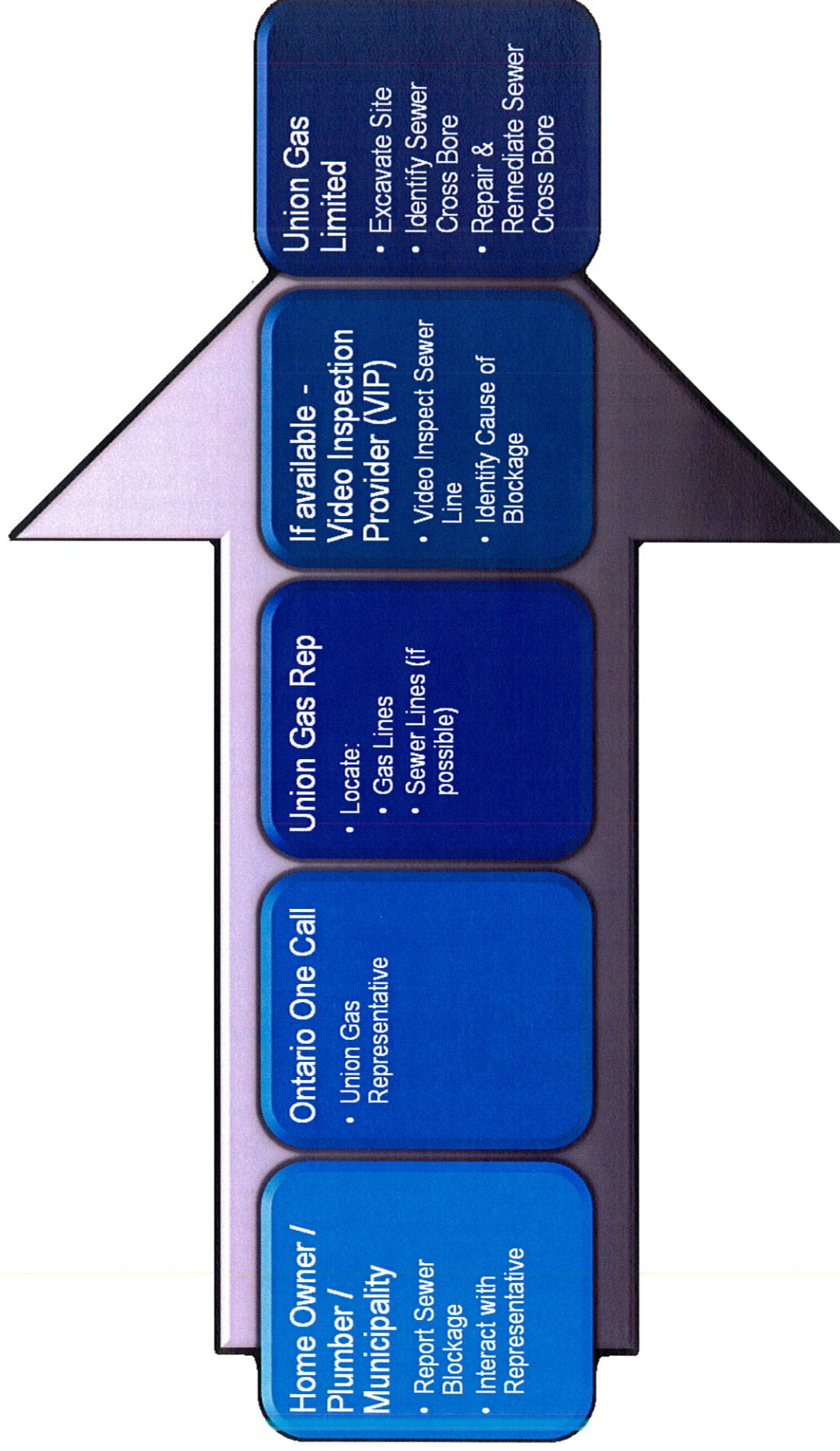
Sewer Safety Inspections: Groups Involved



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- **Industry Communications (plumbers/drain cleaners/rental):**
 - **1000+ direct mailers** (letter + pamphlet) across Ontario
 - **Training sessions** throughout the province to plumbers and drain cleaners
 - Communications through industry associations
 - **Sewer Safety Tags and training to Rental Companies** who rent sewer clearing equipment
- **Customer Communications:**
 - **25,000 direct mailers** to customers where a natural gas was installed or replaced within the last 5 years
 - **Info. on www.uniongas.com** about the **Cross Bore Safety Program**
 - Long term awareness for homeowner by hanging a highly visible **Sewer Safety Tags** near the cleanout/furnace of the home
 - **Newspaper ads and bill inserts**

Industry Communications



HARRY FURRY
61 MISTYWOOD DR
STONE CREEK, ON L8J2N7

July 15, 2011

Dear Recipient:

Important Safety Information from Union Gas Limited

We want to make you aware of a potential safety issue that could arise if you attempt to clear blocked sewer service lines beyond the outside walls of buildings.

It is possible that natural gas lines installed using underground or "trenchless" tunneling methods may have inadvertently penetrated sewer service lines, creating what is known as a sewer cross bore. Unless the natural gas line is damaged, it does not pose an immediate safety risk. However, damage to an intersecting natural gas line can result when rotating or water jetting (flushing) sewer/drain clearing equipment is used to clear a blocked sewer service line. Damaging a natural gas line that has penetrated a sewer service line could result in a leak, posing an immediate safety risk.

For your safety and that of your employees and the public, Union Gas asks contractors, building owners, municipal workers and others planning to clear a blocked sewer to call Ontario One Call at 1-800-400-2255 first.

Ontario One Call will dispatch someone within 1 hour or at a later mutually scheduled time to locate the sewer and rule out a potential cross bore.

Enclosed in this letter you will find copies of a brochure that is meant to be shared with your employees who may be clearing sewer service lines.

We understand that this initiative may change your current operating procedures, however this additional safety precaution will reduce the potential risk of a serious public emergency.

Thank you for your consideration in this matter.

Sincerely,

The Union Gas Cross Bore Safety Team

P.O. Box 2025, 4th Customer Contact Centre, 50 Keele Drive North, Chatham, ON N7M 5M1. uniongas.com or myaccount.com for details.



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Know the danger before clearing blocked sewer lines

An important safety message from Union Gas

There's a possibility that utility lines installed using underground trenchless tunnelling methods have inadvertently intersected sewer service lines. These intersections, or cross bores, may remain undetected for years.

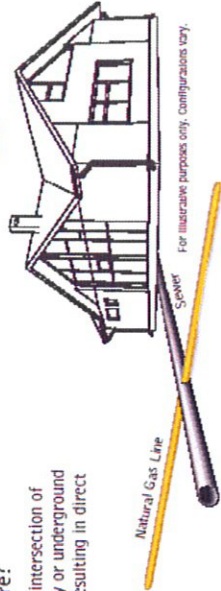
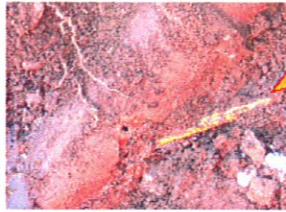
This does not pose a safety risk unless the natural gas line is damaged. Such damage can occur when motorized rotating equipment or water jetting equipment is used to clear a blocked sewer where a cross bore has occurred.

What is a utility cross bore?

Cross bores are defined as an intersection of an existing underground utility or underground structure by a second utility resulting in direct contact that compromises the integrity of either utility.

Avoid a potentially serious safety issue

Before attempting to clear a blocked sewer or if you have any questions about cross bores, call Union Gas first.



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Form 001 (Rev 001)



FOR YOUR SAFETY

Natural gas lines have recently been installed or replaced in your neighbourhood. If you experience sewer problems, call:

Ontario One Call at
1-800-400-2255 or
www.on1call.com

If you have called a plumber / drain cleaner, please inform them of the information on this tag

IMPORTANT SAFETY MESSAGE



WARNING PLUMBERS/ DRAIN CLEANERS

Ensure this is not a
SEWER CROSS BORE
DO NOT use line clearing tools such as a motorized auger or water pressure tool to clear blockages outside the building wall prior to obtaining a
SEWER SAFETY LOCATE

Ontario One Call
1-800-400-2255 or
www.on1call.com

IMPORTANT SAFETY MESSAGE

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Back

Form 002 (Rev 001)



FOR YOUR SAFETY

Please ensure your sewer
blockage is not caused by a
SEWER CROSS BORE
(see reverse of tag for explanation
of a sewer cross bore)

Prior to using this equipment to
clear a sewer blockage, call:
Ontario One Call at
1-800-400-2255 or
www.on1call.com

IMPORTANT SAFETY MESSAGE



WARNING

A SEWER CROSS BORE IS:
an unintended intersection of a
sewer line and a natural gas line
that may have damaged the
sewer line causing the sewer
blockage. Cleaning equipment
may damage the natural gas line
causing a gas leak

To ensure there is not a
sewer cross bore, call:
Ontario One Call
1-800-400-2255 or
www.on1call.com

IMPORTANT SAFETY MESSAGE

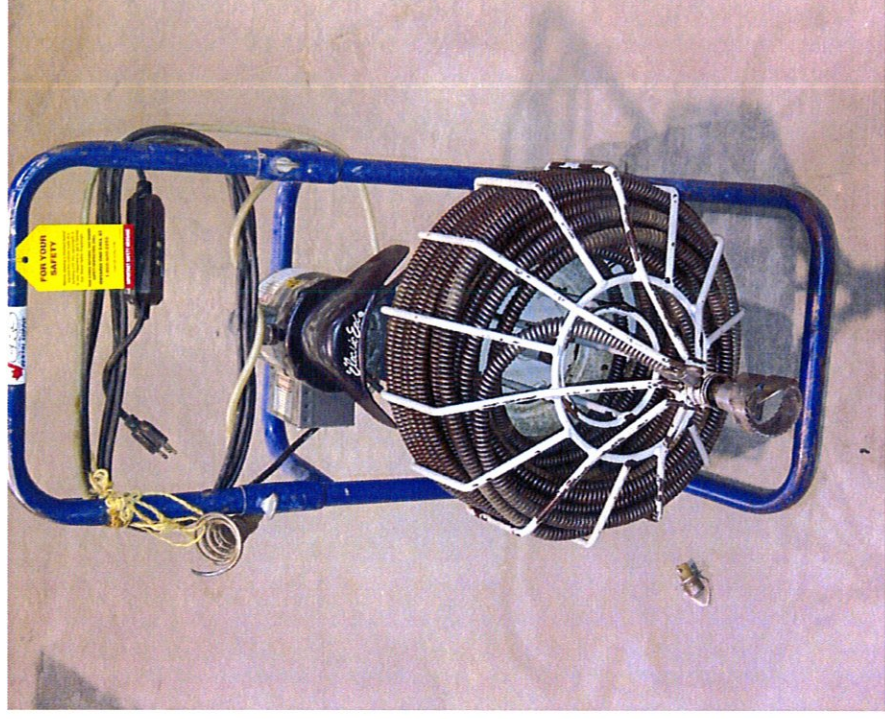
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Rental Companies



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Advertising Program

- Started in late 2011
- Continuing in 2013

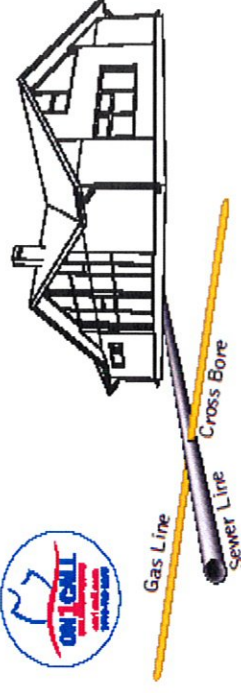
A free inspection before clearing blocked sewer lines avoids danger!

Natural gas lines can sometimes intersect with sewer lines beyond the outside wall of your home or building. In these cases, clearing a blocked sewer line with motorized or water jetting equipment could damage the natural gas line and lead to a gas leak creating a serious safety risk for you and others.

Call Ontario One Call for a free natural gas sewer safety inspection before trying to clear blocked sewer service lines.

1 800 400-2255

Make the call and stay safe.



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New and Replacement Pipeline Installations

How Are We Preventing Future Cross Bores



Form 8269 – Pre-Work Form



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PRE-WORK FORM

Address		City / Town		Date	
# of L2/L3s	Job Duration HRS	Work Description	Name		
Job Estimate Form Attached <input type="checkbox"/>	Men Work <input type="checkbox"/>	Service Work <input type="checkbox"/>	Pipe Size	Plastic / Steel	Pressure
Section #1 - General Information					
Section #2 - Procedure Of Work & High Pressure Approval					
High Pressure Approval Is Required When Welding On:					
Procedure Of Work Is Required					
Steel 6" or Larger	Operating at MCP > 700 kPa	Isolating 140Pa or Less	<input type="checkbox"/>	Man Operating > 550 MPa	<input type="checkbox"/>
Work Duration > 1 day	SMAW Work With Technician	<input type="checkbox"/>	<input type="checkbox"/>	Service > NPS 2 and Operating > 550 MPa and Connected to main 8" or Larger	<input type="checkbox"/>
Air Mover Controls Required	Non-Standard Flange / Pipe Material	<input type="checkbox"/>	<input type="checkbox"/>	Service Operating > 3450 MPa	<input type="checkbox"/>
Suspect Soil in Work Area	Main or Service Replacement Project	<input type="checkbox"/>	<input type="checkbox"/>	Service of Main NPS 8" or Greater	<input type="checkbox"/>
Water Course in Work Area	Plastic 6" or Larger	<input type="checkbox"/>	<input type="checkbox"/>	Trenchless Technologies	<input type="checkbox"/>
Stopping or Turns where gas movement is controlled				Use of Trenchless Tools requires Form 10134, Underground Utility Identification Form to be completed	<input type="checkbox"/>
Section #3 - Locates					
Locates Required <input type="checkbox"/>	Work Area Is Marked With: Flags <input type="checkbox"/> Paint <input type="checkbox"/> Stakes <input type="checkbox"/> Not Marked <input type="checkbox"/>				
Details of Required Locate Area					
Section #4 - Permits					
Trench Permit (MOL) <input type="checkbox"/>	Railroad <input type="checkbox"/>	Environmental <input type="checkbox"/>	M.T.O. - Highway <input type="checkbox"/>	Municipal <input type="checkbox"/>	P.R.O.W. / Easement <input type="checkbox"/>
Utility Permit/Cut and Location	USDA Right of Way Permit <input type="checkbox"/>				
Section #5 - Traffic Control					
Book 7 Figure # TL-_____	Lane Closures <input type="checkbox"/>	Company Traffic Control Form Attached <input type="checkbox"/>	Traffic <input type="checkbox"/>	Emergency Services <input type="checkbox"/>	
Note: Additional Requirements (TCP's, Barriers, Signage, Duration)					
Section #6 - Notification of Work Required To:					
Customer Notification Details: Interruptions - Re-Lights					

Trenchless Technologies

Use of Trenchless Tools requires Form 10134 
Underground Utility Identification Form
to be completed

Form 8269 – Pre-work Form has been
edited to include a check box for
Trenchless Technologies.

3.53.6 Installing Natural Gas Lines within .75m of a Sewer Line



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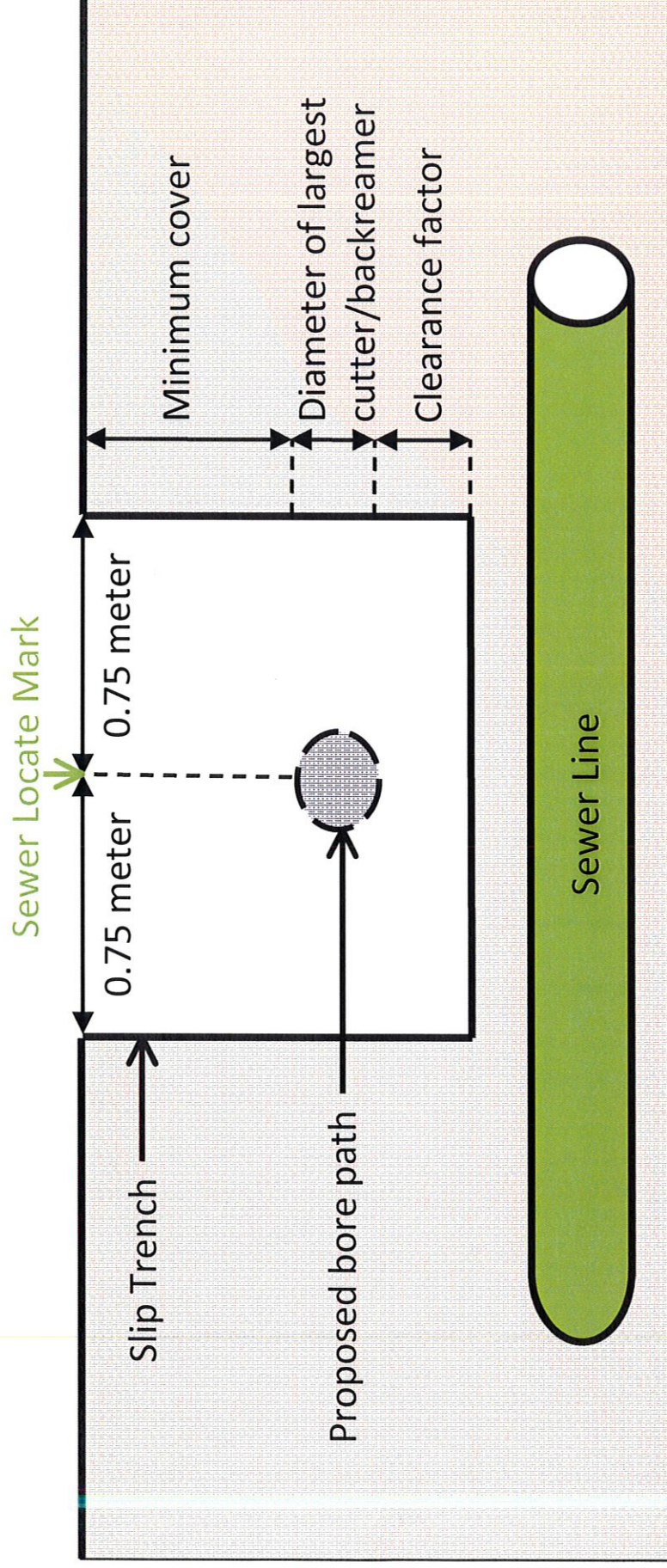
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1. Determine the minimum and maximum bore depths
2. If the Bore Path fits between the minimum and maximum bore depths
 - a. Complete the boring operation for the gas pipe according to C&M procedures
 - b. Complete the installation of the gas line in accordance to C&M
 - c. If there is a possibility that the sewer line has been compromised, complete a camera inspection of the lateral(s) once the project is complete
3. If the Bore Path DOES NOT fit between the minimum and maximum bore depths either
 - a. Find an alternate path that will prevent potentially damage to the sewer line or
 - b. Install the gas line using the open trench method. If open trench is not possible, consult with the Construction Superintendent for alternative installation methods.

New Installation Daylighting Calculations

Minimum Cover
= 800 mm (32.0 in)
Diameter of cutter/backreamer
= 150 mm (6.0 in)
Clearance factor
= 300 mm (12.0 in)
Total (minimum depth of daylight hole)
= **1250 mm (50.0 in)**



What are we looking for from you?



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- Direct homeowners, plumbers, or your sewer department to call **Ontario One Call** for a free "Sewer **Safety Inspection**" prior to using motorized or water jetting tools to clear a sewer blockage.
- **Communicate Union Gas' Sewer Cross Bore** program to:
 - Municipal staff:
 - Provide general awareness
 - Public works/sewer department staff:
 - Normal working process remains
 - Call Ontario One Call prior to clearing sewer blockages
 - Continue to contact Union Gas if inspection of sewer lines indicate a sewer cross bore



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