CITY OF CLEVELAND
Mayor Justin M. Bibb
PUBLIC SAFETY

MEMORANDUM

TO: Hon. Justin M. Bibb, Mayor

FROM: Dornat A. Drummond, Chief Director of Public Safety

DATE: September 28, 2026

SUBJECT: Executive Summary of Rainbow Terrace Investigative Efforts

Sir,

The investigation into the tragic incident that occurred on June 23, 2025, at Rainbow Terrace Apartments has been finalized.

Despite the efforts of FIU and other parties, the actual cause of the explosion cannot be determined. I understand that this conclusion provides no closure or explanation for the loss and suffering endured by the residents, their families, and the broader community. The relevant reports are included in full, attached to this memorandum, and summarized below. Although the reports involved may not provide the answers many had hoped for, I hope that their release will provide some finality to this stage of the investigation and allow the community to continue the difficult process of healing.

The Roles and Responsibilities of the Cleveland Division of Fire, the Public Utilities Commission of Ohio (PUCO), and Enbridge Gas Ohio

The Cleveland Division of Fire, Fire Investigation Unit (FIU), is generally responsible for investigating the origin, cause, and circumstances of a major fire occurring within the City. The FIU relies on partner entities to complete investigations into the elements of a major fire that they are responsible for investigating.

Pursuant to Ohio Revised Code Section 4905.91(A)(3), the Public Utilities Commission of Ohio ("PUCO") is responsible for administering and enforcing Ohio's gas pipeline safety code and for carrying out the regulatory and enforcement duties prescribed in Sections 4905.90 through 4905.96 of the Revised Code. PUCO is solely responsible for the investigation and determination if a gas pipeline failed, why it failed, and if the operator complied with pipeline safety laws and regulations.

Additionally, Enbridge, the pipeline operator, is required by the Federal Code of Regulations, specifically, 49 CFR 192.617, to investigate an incident involving its pipeline that resulted in a death, or personal injury necessitating inpatient hospitalization.

All parties fulfilled their roles in accordance with their statutory obligations, as below.

The Public Utilities Commission of Ohio is Responsible for Administering and Enforcing Ohio's Gas Pipeline Safety Code

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Pursuant to Ohio Revised Code Section 4905.91(A)(3), the Public Utilities Commission of Ohio ("PUCO") is responsible for administering and enforcing Ohio's gas pipeline safety code and for carrying out the regulatory and enforcement duties prescribed in Sections 4905.90 through 4905.96 of the Revised Code. Pursuant to Ohio Administrative Code Rule 4901:1-16-12, PUCO may initiate a formal gas-pipeline-safety proceeding where PUCO staff determines that probable noncompliance with applicable pipeline-safety requirements has occurred. In this matter, PUCO's investigation **did not** identify any compliance failure that may have caused or contributed to the Rainbow Terrace tragedy.

Cleveland Division of Fire, Fire Investigation Unit Classified the Cause of the Explosion as Undetermined

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FIU conducted its investigation in accordance with National Fire Protection Association (NFPA) 921, Guide for Fire and Explosion Investigations, which requires that determinations concerning the origin and cause of a fire or explosion be supported by the available evidence and established to an acceptable level of certainty.

NFPA 921 is the nationally recognized guide for conducting fire and explosion investigations and contains an accepted, scientific methodology for determining origin and cause. It provides investigators with a systematic framework for collecting and analyzing evidence, developing potential hypotheses, testing those hypotheses against the available evidence, and reaching conclusions that are supported by the facts.

The evidence does not establish the source of the gas release or the heat source that ignited it to the degree of certainty required under NFPA 921; accordingly, FIU classified the cause of the fire and explosion as **Undetermined**.

Based on witness statements and surveillance footage, FIU believes that the following sequence of events occurred:

- A rapid accumulation of natural gas in the lower levels of Buildings 7051 and 7055;
- The natural gas then contacted an unknown heat source;
- An explosion resulted causing widespread fire, heat, and smoke damage.

Enbridge Gas Ohio's Investigator Did Not Reach a Conclusion Regarding the Origin and Cause of the Explosion

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Enbridge, the pipeline operator, is required by the Federal Code of Regulations, specifically, 49 CFR 192.617, to investigate an incident involving its pipeline that resulted in a death, or personal injury necessitating inpatient hospitalization. Enbridge retained S-E-A, Ltd, who performed extensive site inspections, laboratory examinations, and testing based on the principles of NFPA 921.

S-E-A, Ltd. did not reach a conclusion regarding the origin and cause of the explosion. However, **Enbridge concluded that the "apparent cause" of the explosion was ignition of leaking gas from the building owned 2" house line gas piping.**

The Public Utilities Commission of Ohio found No Compliance Failures, but Found Deficiencies in Enbridge Gas Ohio's Post-Incident Response

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PUCO is responsible for administering and enforcing Ohio's gas pipeline safety code and for carrying out the regulatory and enforcement duties prescribed in Sections 4905.90 through 4905.96 of the Revised Code. PUCO's investigation process is to provide oversight to Enbridge's review. PUCO did not find any compliance failures that could have caused or contributed to the incident, nor did they opine on the cause of the explosion.

PUCO's report also notes that on June 2, 2025, twenty-one days prior to the explosion, Enbridge performed an inspection and leak survey of the inside piping and meter manifold. PUCO states that the inspection found no leaks at the time of inspection, no atmospheric corrosion, the natural gas consumption appeared to be consistent with previous reads, and no abnormalities were reported.

PUCO outlined the following deficiencies in Enbridge Gas Ohio's post-incident response in their Natural Gas Pipeline Failure Investigation Report:

- Enbridge's GIS mapping failed to identify the south service line serving the building, which resulted in an uncontrolled release of natural gas from that line for approximately 20 hours after the explosion.
- Other portions of the complex were also incorrectly mapped, leading an Enbridge first responder to shut off natural-gas service to a building that was not involved in the explosion and fire.
- Enbridge leak-detection personnel failed to detect escaping gas after the incident, raising concerns regarding the effectiveness of the training provided to those personnel.
- The evidence-removal process left portions of jurisdictional piping in a condition that prevented leak or pressure testing, including service-line segments that had been cut too short or at angles that made the use of pressure-testing equipment impossible.
- Although a leak was later identified downstream from the meter, the affected piping had been subjected to the explosion, remained exposed to the elements for several weeks, and was subsequently removed with an excavator, preventing investigators from reliably determining whether that leak existed before the explosion.

PUCO did not identify any pipeline-safety regulatory violations that caused or contributed to the explosion. PUCO nevertheless identified deficiencies in Enbridge Gas Ohio's post-incident response.

The Public Utilities Commission of Ohio's and Enbridge Gas Ohio's Reports were not Finalized until Spring 2026 and not Delivered to the Division of Fire until August 2026

- FIU completed its preliminary report on July 30, 2025,
- S-E-A, Ltd., retained on behalf of Enbridge, issued its report on March 6, 2026.
- PUCO finalized its report on May 1, 2026.
- PUCO delivered its report to FIU, which included Enbridge's report and S-E-A, Ltd.'s report, on August 28, 2026.
- FIU updated its ongoing investigation on September 22, 2026.

It bears repeating that this office is truly disappointed that no conclusive results are available for the victims and the community. We stand ready to continue to provide support with all available City resources in the follow-up to this tragedy.

Respectfully submitted,

Dornat A. Drummond

Chief Director of Public Safety

Encl.: City of Cleveland Fire Investigation Unit Report - 2025-37861

S-E-A Investigation Research and Testing Investigative Summary 09.154134

Enbridge Gas Ohio Narrative and Description of Incident

Public Utilities Commission Investigation Report

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SAFETY
DIVISION OF FIRE

Fire Investigation Unit

To: Vince Di Teodora, Acting Chief
Cleveland Division of Fire

From: Michael J. Fink, Detective, Cleveland Fire/Arson
Fire Investigation Unit

Date: Tuesday, 09/22/2026

Subject/Regarding: CDF 2025-37861 7051-7055 Garden Valley Ave., Rainbow Terrace Apartments

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The City of Cleveland Fire Investigation Unit's Investigation/Examination of The Rainbow Terrace Apartment's (BLDGS 7051/7055) Fire Incident has revealed the inability to eliminate multiple potential sources of ignition. Per NFPA 921, The Guide to Fire and Explosive Investigation, any determination of **Origin And Cause** must be evidence based. Without additional supportive evidence, including the identification of the unknown ignition source, this fire MUST be ruled as Undetermined.

It is most probable that on June 23, 2025, there was a rapid build-up of Natural Gas in the lower levels of BLDGS 7051/7055. Within minutes of the first report of "an odor of gas," the gas reached an explosive concentration level where it contacted an unknown Heat Source causing it to ignite, creating a catastrophic explosion. This ignition resulted in widespread fire, heat, and smoke damage. Natural Gas is the only competent ignition source present in the structure that could produce this level of damage.

At this time, independent Investigations/Examinations by multiple independent contractors/companies have come to similar conclusions regarding the Fire Incident. Due to the continued inability to eliminate multiple potential sources of ignition, the Cause Of The Fire/Ignition and along with its Heat Source is defined as **UNDETERMINED**.

The Fire Investigation/Examination of the Incident has been concluded and remains Undetermined. This determination is based on information available at the time of the examination and all information gathered to date. This case may be re-opened, supplemented, amended, or revised at a later date, consequent to the discovery of additional relevant information.

The following Cleveland Fire/Arson Unit Personnel have been involved in the Investigation/Examination of the Fire Incident Case:

Capt. R. Zimmerer #FF55 (Former OIC of FIU)
Lt. T. Candow #FF47
Lt. M Flynt #FF29
Det. M. Fink #FF53

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SAFETY
DIVISION OF FIRE

Fire Investigation Unit

To: D. Drummond, Public Safety Director
City of Cleveland

From: Michael J. Fink, Detective, Cleveland Fire/Arson
Investigation Unit

Subject/Regarding: CDF 2025-37861 7051-7055 Garden Valley Ave., Rainbow Terrace (Explosion/Fire) Apartments

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Per **NFPA** (National Fire Protection Association) **921** - Guide For Fire And Explosion Investigations, there are four general categories to which the cause of an explosion or fire can be **Classified**: **(1)** Accidental/Unintentional **(2)** Natural **(3)** Incendiary/Intentional and **(4)** Undetermined. **NFPA 921** states, fire classification occurs after determining the cause of the fire. It recognizes and provides guidance for fire classification, but classification is not the same as determining the fire cause. Fire-Cause Classification may be required for official statistical record keeping or official reporting purposes.

The Cleveland Fire/Arson Investigation Unit has **Classified** The Rainbow Terrace Apartments (7051/7055) Fire/Explosion, as **UNDETERMINED**. An **UNDETERMINED Heat Source** was also concluded as appropriate for the Fire Incident. Investigation/Examination included the fire scene, a review of available physical evidence, and other information relevant to determining the Incident's **Origin And Cause**.

An **UNDETERMINED** Fire-Cause Classification is used for fires/explosions that have been Investigated/Examined thoroughly and the cause cannot not be proven to a level of certainty, using the scientific method. The available physical data and physical evidence do not point definitively to a single specific origin or ignition source. There should be no negative stigma attached to the Undetermined Classification. An Undetermined Classification, reflected by information at the time of the initial Investigation/Examination may be revised/reclassified later, consequent to the discovery of additional relevant information without issue. An Undetermined classification does not mean that the investigation was incomplete or that no conclusions could be reached. It can reflect that the evidence observed does not support a single-cause hypothesis.

Under **NFPA 921**, an **UNDETERTIMNED Heat Source** applies when the specific ignition source cannot be proven to an acceptable level of certainty using the scientific

method. When Investigators/Detectives, cannot definitively identify the specific ignition point or energy source that started the Fire Incident, due to insufficient, missing, or destroyed physical evidence, an **UNDETERMINED** classification for the **Heat Source** is appropriate.

NFPA 921 and **NFPA 1033** (Standards for Professional Qualifications For Fire Investigator) are the National Standards used by Investigators/Detectives for the systematically Investigating/Examination of Fire/Explosion Incidents.

MJF - #FF53

CLASSIFICATION: U-UNDETERMINED **CDF INCIDENT #:** 2025-37861

REPORT OF INVESTIGATION
CLEVELAND FIRE DEPARTMENT

FIRE INVESTIGATION UNIT
1645 Superior Avenue
Cleveland, Ohio 44113
(216) 664-6380 FAX: (216) 664-6329
CFDFIU@clevelandohio.gov

CDF Incident: 2025-37861
Report Date: 6/23/2025
Cause: U-UNDETERMINED
Loss $: Unknown
CDP RMS #:
Ward: 5 **District:** 3 **CT:** 1148.00

Location: 7051/7055 Garden Valley Ave. Cleveland, Ohio 44104 **Time:** 1614 Hrs. **Date:** 06/23/2025 **Day:** Monday

Stories: 3 **Construction:** Class C Construction **Occupancy:** Occupied Residential Apartment Building

Vehicle: **Model:** **License #:** **Vin #:**

Owner: Rainbow Terrace 2021 L.L.C
Rainbow Terrace Apartments – 7310 Carson Ave.
Cleveland, OH. 44104 PH# TELEPHONE
Address: 6901-7881 Garden Valley Ave. Cleveland, OH. 44104 **Phone:** TELEPHONE

SS #: **DOB:** **Race:** **Sex:** **M/S:**

Occupant: Numerous Occupants **Address:** **Phone:**

SS #: **DOB:** **Race:** **Sex:** **M/S:**

Owner's Insurance: Yes **Company:** McClaren Insurance **Amount $:**

Occupant's Insurance: Unknown **Company:** Unknown **Amount $:**

Photographs: See Below **Evidence:** See Below **Entry:** Unforced/Unsecured

Car: 713 **Civilian Injury:** Yes
Firefighter Injury: No
Smoke Detectors: Yes
Alert: Yes
Battalion Chief: B - 2
BC B. Luther

SUBJECT OF INVESTIGATION: The Subject Of Investigation is the apartment building numbered 7051 and 7055 on the Rainbow Terrace Apartments property complex, located on Garden Valley Ave. in Cleveland. The

Assignment Rec'd From: CDF FDC / FAO

Investigator: Det. Michael Fink #FF53

Investigator: Lt. Thomas Candow #FF47

Signature: Det. Michael Fink #FF53

Signature: _____

CITY OF CLEVELAND
DEPT. OF PUBLIC SAFETY
DIVISION OF FIRE
FIRE INVESTIGATION UNIT

RE: Report Continued

LOCATION: 7051/7055 Garden Valley Ave. Cleveland, Ohio 44104

INCIDENT: CDF 2025-37861

DATE: Monday, 06/23/2025, 1614 Hrs.

three story apartment building is of Class C Construction with a slab foundation, brick exterior walls, and a gable roof containing solar panels attached to the roof which extend the full roof line. The structure was built in the late 1950's and is located on the north side of Garden Valley Ave. Two lower-level doors to the building can be accessed via the S/W side/parking lot of the structure and the N/E side has two lower-level doors that can be accessed by that side/parking lot of the building. Independent Management Services of Fenton, Michigan is the contracted Property Manager of Rainbow Terrace Apartments. The Property Manager's representative is Ms. Jessica Schindler (WC# TELEPHONE C# TELEPHONE. The owner of the Rainbow Terrace Apartments Property per the Cuyahoga County MyPlace website is Rainbow Terrace 2021 LLC of Michigan. The Apartment Building had all utilities servicing the structure at the time of the Incident.

OBSERVED DAMAGE/AREA OF ORIGIN: A massive amount of fire, heat, smoke, and water damage occurred to Rainbow Terrace Apartment BLDGS 7051 and 7055. This damage spread up and out from the first level maintenance/storage rooms to the apartments immediately above these rooms on the second and third floors. Eventually fire spread along the non-fire walled roof dormers/lines of the building. Structural building damage, not caused by the fire and heat, occurred from an initial explosion which created blast damage reaching upward and outward.

FIU Car 713 arrived on scene and included myself and my partner, Lt. T. Candow #FF47, as the assigned **Origin And Cause** Investigators. Upon arrival, we met and conferred with individuals from the State Fire Marshall's Office, Federal ATF Agents, and CDP Bomb Personnel/Police Officers who had responded to the Incident Scene. The CDF OICs managing the Multiple Alarm Fire were also spoken to regarding the Incident. CDF Suppression efforts were still in fire attack mode when we arrived. A 360-degree inspection of the exterior of the structure was completed, noting fire damage and burn pattern evidence which resulted from fire venting from the interior of the structure.

FIU EXAMINATION: FIU Car 713 responded to the 2-2-2 Alarm Fire at the above date and time after being dispatched by the CDF Fire Dispatch Center/Fire Alarm Office. This response was made at the request of B-2 BC B. Luther and AC1 AC W. Gorey. Car 713 was initiated to respond to a reported Apartment BLDG Explosion/Fire to determine the **Origin And Cause** of the Fire Incident. We proceeded to MetroHealth Medical Center's Main

CITY OF CLEVELAND
DEPT. OF PUBLIC SAFETY
DIVISION OF FIRE
FIRE INVESTIGATION UNIT

RE: Report Continued

LOCATION: 7051/7055 Garden Valley Ave. Cleveland, Ohio 44104

INCIDENT: CDF 2025-37861

DATE: Monday, 06/23/2025, 1614 Hrs.

campus from CDF Station 21, to Interview 4 individuals that were transported from the Fire Incident Scene by Cleveland EMS. Three individuals were transported from BLDG 7051 Apt. # 29, (VICTIM RIGHTS VICTIM RIGHTS Security Officer, VICTIM RIGHTS W/M, C# (TELEPHONE from First Line Defense Security was the fourth individual transported to the hospital, and the only one that could speak and be interviewed there. In an oral and recorded interview, Mr. Erskine stated he was around where the Incident occurred prior to the explosion/fire and could smell the odor of Natural Gas. The three occupants of Apt. # 29 were incapacitated while receiving medical care and could not be interviewed.

FIU CONCLUSION: Based on Scene Investigation/Examination, conferring with the on scene OICs B-2 and AC1, and speaking with security and maintenance personnel at the scene during the Incident, at this time, the Cleveland Fire Investigation Unit has determined that the Cause Of The Fire/Ignition will be **U-Undetermined** with a **UU-Undetermined** Heat Source. Investigation/Examination reveals the inability to eliminate multiple potential sources of ignition. The **Origin And Cause** of this Fire Incident cannot be proven to an acceptable level of certainty and without any more supportive evidence obtained by the Cleveland Fire Investigation Unit. There is also the inability to locate or identify a specific Heat Source.

It is most probable, based on the eyewitness statements (Security Officer-Brandon Erskine and Maintenance Supervisor-Milton Jay Payne) and video camera surveillance camera footage, that there was a rapid Natural Gas build up in the lower levels of BLDGs 7051/7055 and this gas reached an explosive concentration level where an unknown Heat Source ignited the gas creating a catastrophic explosion resulting in widespread fire, heat, and smoke damage. Both witnesses smelled what they believed was the odor of Natural Gas, in the immediate area right before the explosion and Incident occurred.

At the time of this CDF Report Of Investigation, the Investigation/Examination by independent contractors for Enbridge Gas OHIO (EOG) for exterior gas line and gas meter testing has commenced for the involved structures. Rainbow Terrace 2021 LCC has also hired an independent Fire Consultant, Churchwell Fire Consultants of Hudson, Ohio, to do testing of buildings 7051/7055 ground floor interior gas lines. It is unknown when these two independent findings will be completed.

Investigator: Det. Michael Fink #FF53

Signature: Det. Michael Fink #FF53

Investigator: Lt. Thomas Candow #FF47

Signature: _____

CITY OF CLEVELAND
DEPT. OF PUBLIC SAFETY
DIVISION OF FIRE
FIRE INVESTIGATION UNIT

RE: Report Continued

LOCATION: 7051/7055 Garden Valley Ave. Cleveland, Ohio 44104

INCIDENT: CDF 2025-37861

DATE: Monday, 06/23/2025, 1614 Hrs.

This Report Of Investigation reflects information available at the time of the Investigation/Examination and may be supplemented, amended, or revised at a later date consequent to the discovery of additional relevant Information.

WEATHER: Weather Underground reported the following weather observation for Cleveland, Ohio at 1551 Hrs., on the day of the Incident as follows: 93 degrees F., 49% humidity, SW winds at 09 mph, 0.0 in. precipitation, conditions were Partly Cloudy.

CRIME TITLE: None At The Time Of This Investigation

EVIDENCE COLLECTED: The following is an inclusive list of different items collected as evidence of this Incident:

- On Scene Security Cell Phone Recordings, Taken Before, During, And After The Incident
- Over 800 Digital Images Taken of the Incident Scene
- 4 Digital Video Recorders (DVRs) From 4 Separate Rainbow Terrace Apartments Locations, Around The Time Of The Incident
- Parking Lot Snippets Of The West And East Parking Lots During The Incident
- Cleveland Division Of Fire - FDC/FAO Recordings
- Cleveland Division Of Police - Police Radio Recordings
- Rainbow Terrace Work Invoices/Rainbow Terrace Work Orders
- Inclusive Lists Of The Buildings Tenants And Their Contact Information
- Large Amounts Of Detective Notes/Follow-Ups Including Witness Interviews

PRIMARY FOCUS: BLDGS 7051/7055 Garden Valley Ave. (Rainbow Terrace Apartments).

- FIU Investigation/Examination is currently focusing on the possible and most probable buildup of Natural Gas in the lower levels of BLDGs 7051/7055 which resulted in a catastrophic explosion and rapid fire spread.

Investigator: Det. Michael Fink #FF53

Signature: Det. Michael Fink #FF53

Investigator: Lt. Thomas Candow #FF47

Signature: _____

CITY OF CLEVELAND
DEPT. OF PUBLIC SAFETY
DIVISION OF FIRE
FIRE INVESTIGATION UNIT

RE: Report Continued

LOCATION: 7051/7055 Garden Valley Ave. Cleveland, Ohio 44104

INCIDENT: CDF 2025-37861

DATE: Monday, 06/23/2025, 1614 Hrs.

- On site Examination/Investigation by Enbridge Gas (Natural Gas Provider for Rainbow Terrace Apartments). Checked for exterior leaks and meter integrity.
- Interviews were conducted with security personnel on scene at the time of the Incident (First Line Defense Security), 2 security officers were on the property at the time of the Incident. One of the security officers reported the order of Natural Gas, in the stairwell/lower level of BLDG 7051, just before the Explosion/Fire.
- Audio recordings were obtained from a security officer's phone, of calls made before, during, and after the Incident.
- BLDG DVRs (Digital Video Recorder) were obtained from the surrounding BLDGS of 7051/7055 with any pertinent videos/pictures being saved and reviewed. These Digital Recorders were part of the Surveillance Camera Security System of Rainbow Terrace Apartments. Many of the property's cameras were O.O.S. at the time of the Incident.
- Over 800 Digital Images, including video snippets, have been taken of the Incident Scene and surrounding area since 06/23/2025.
- CDF/CDP Dispatch and Radio recordings have been obtained and reviewed.
- Aerial Overviews and Floor Plan drawings have been obtained, researched, and completed regarding the property.

STATUS: OPEN

The following Cleveland Arson/Fire Unit Personnel have been involved with and continue to be involved with this Fire Investigation/Examination:

- Capt. R. Zimmerer #FF55
- Lt. T. Candow #FF47
- Lt. M. Flynt #FF29
- Det. M. Fink #FF53

Investigator: Det. Michael Fink #FF53

Signature: Det. Michael Fink #FF53

Investigator: Lt. Thomas Candow #FF47

Signature: _____

Redaction Date: 9/24/2026 2:45:06 PM

Redaction Log

Total Number of Redactions in Document: 8

Redaction Reasons by Page

Page	Reason	Description	Occurrences
1	TELEPHONE NUMBER	Individual phone numbers redacted under Doe v. Ohio State Univ., 2024-Ohio-5891, ¶ 31 (10th Dist.), appeal not allowed, 2025-Ohio-857, reconsideration denied, 2025-Ohio-2416.	2
2	TELEPHONE NUMBER	Individual phone numbers redacted under Doe v. Ohio State Univ., 2024-Ohio-5891, ¶ 31 (10th Dist.), appeal not allowed, 2025-Ohio-857, reconsideration denied, 2025-Ohio-2416.	2
3	VICTIM RIGHTS	R.C.149.43(A)(1)(rr) Records, documents, and information the release of which is prohibited under sections 2930.04 and 2930.07 of the Revised Code.	3
3	TELEPHONE NUMBER	Individual phone numbers redacted under Doe v. Ohio State Univ., 2024-Ohio-5891, ¶ 31 (10th Dist.), appeal not allowed, 2025-Ohio-857, reconsideration denied, 2025-Ohio-2416.	1

Redaction Log

Redaction Reasons by Exemption

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TELEPHONE NUMBER	Individual phone numbers redacted under Doe v. Ohio State Univ., 2024-Ohio-5891, ¶ 31 (10th Dist.), appeal not allowed, 2025-Ohio-857, reconsideration denied, 2025-Ohio-2416.	1(2) 2(2) 3(1)
VICTIM RIGHTS	R.C.149.43(A)(1)(rr) Records, documents, and information the release of which is prohibited under sections 2930.04 and 2930.07 of the Revised Code.	3(3)

INVESTIGATION, RESEARCH AND TESTING

Since 1970

Apartment Explosion - Investigative Summary

Party Represented: The East Ohio Gas Company dba Enbridge Gas Ohio

Address of Incident: Rainbow Terrace Apartments
7051 - 7055 Garden Valley Avenue
Cleveland, Ohio 44014

Date of Incident: June 23, 2025

Prepared for:

Sarah M. Mancuso, Esq.

Enbridge Gas Ohio

1201 East 55th Street
Cleveland, Ohio 44103

S-E-A Matter No. 09.154134

Issue Date: March 6, 2026

Signed by:

Table of Contents

List of Figures

I. Executive Summary

Matter Assignment

On June 23, 2025, Sarah Mancuso, Esq. of Enbridge Gas Ohio (Enbridge Gas) requested that SEA, Ltd. (S-E-A) conduct an investigation into an explosion that occurred on June 23, 2025, at 7051 - 7055 Garden Valley Avenue, Cleveland, Ohio. This investigation was assigned to S-E-A Senior Mechanical Engineer Eric D. Baluch, P.E., CFEI, and S-E-A Senior Materials Analyst David C. Riegner, Ph.D., CFEI, as S-E-A Matter No. 09.154134.

Scope

Per your request, as counsel for Enbridge Gas, this Investigative Summary has been prepared for you.

This Investigative Summary is based on the information and analysis conducted to date; however, it does not contain all the data, facts, analysis, or discussion of the methodology applied to the investigation. A more comprehensive analytical report can be prepared upon request, should future litigation or file processing require. Additional examination, investigation, analysis, and/or testing may be required prior to the issuance of a more comprehensive report. This Summary is not intended for use as a litigation report or for expert disclosure.

Methodology

The investigation and analysis of any fire-related incident is a complex and scientific endeavor. The methodology of such an endeavor, therefore, must include the comprehensive, objective, and accurate compilation and analysis of the available data. The methodology utilized by S-E-A in the investigation of this fire incident was *The Scientific Method*, in accordance with the requirements of NFPA 1033*, Standard for Professional Qualifications for Fire Investigator*, and the principles of NFPA 921*, Guide for Fire and Explosion Investigations*.

Summary of Testing Results to Date

- The south service line, from where it connected to the south main, up to the riser at the exterior of the building, passed a pressure drop test indicating no leaks in the piping.
- The north service line, from where it connected to the north main, up to the shutoff valve within the north utility room, passed a pressure drop test indicating no leaks in the piping.
- No additional service lines supplying the subject building were found through borescope examination of the south main, north main, or east main.
- The south service line, where it penetrated the exterior wall of the building, was found to be wrapped in black tape. During laboratory examination, testing revealed a small leak originating from underneath the black tape. Leak testing, using the smallest flow meter available (0.1 to 1.0 standard cubic feet per hour [SCFH]), did not detect a measurable leak; indicating that the leak was less than 0.1 SCFH. Removal of the black tape revealed that the pipe had corroded from the outside-in.
- The south service line downstream of the wall penetration, through the south gas meter, was tested and no leaks were found.
- Testing of the house line gas piping, downstream of the south gas meter and within the south utility room, revealed four leaks, including:
    - A 2"-diameter elbow, from Evidence #7, was tested at a flow rate of 1.7 SCFH at 12.3" water column (w.c.); however, the leak at the elbow could not be isolated from an additional leak where the test rig connected to the evidence (i.e., the elbow leak rate was less than 1.7 SCFH, but greater than 0 SCFH).
    - A 2"-diameter elbow and 2"-diameter union, from Evidence #5, were tested simultaneously with a 0.6 to 5.0 SCFH flow meter. The flow meter did not detect a measurable leak; however, leak detector solution showed active leaking at the elbow and at the union, indicating a combined leak rate less than 0.6 SCFH.
    - A 2"-diameter union, from Evidence #15, was tested at a flow rate of 74 SCFH at 11.06" w.c.
        - The union was computed tomography (CT) scanned and disassembled. The union's threads were found intact.
        - The union nut was looser than hand tight. Disassembly of the union nut took five rotations by hand (i.e., it did not require a wrench to loosen).

- Apparent pipe dope was observed on and around the mating surfaces of the union.
- Typically, pipe dope is not applied to the mating surfaces of a union. Unions form a leak-free joint by metal-to-metal contact at the mating surface of the male end and the mating surface of the female end.
- The mating surfaces of the union appeared dull-colored and unpolished after the first disassembly, consistent with no metal-to-metal contact.
- Reassembly of the union until the union nut was hand tight took 5-¼ rotations.
- Wrench tightening beyond hand tight took an additional approximate ⅛ rotation (i.e., 5⅜ rotations to achieve a wrench tightened union).
- Leak testing after wrench tightening measured 0 SCFH at the union.
- Disassembly of the union after wrench tightening revealed the mating surfaces to appear brighter/polished, indicative of metal-to-metal contact at the mating surfaces from the laboratory wrench tightening and/or wrench loosening, and likely not achieved during the initial installation.

Signatures

S-E-A and the undersigned hereby certify the opinions and conclusions expressed herein were formed to a reasonable degree of professional certainty. They are based upon the application of reliable principles and scientific methodologies to all of the facts known by S-E-A and the undersigned when this report was issued, as well as knowledge, skill, experience, training, and/or education. Should additional information be discovered, S-E-A and the undersigned reserve the right to appropriately amend or augment these findings.

Prepared By:

Signed by:
Eric Baluch
8016EC3FB4E040B...

Eric D. Baluch, P.E., CFEI
Senior Mechanical Engineer
State of Ohio
Registration No. PE80699

DocuSigned by:
David C Riegner
162A7BC3BCB9481...

David C. Riegner, Ph.D., CFEI
Senior Materials Analyst

Technically Reviewed By:

Stephen E. Erlenbach/jci

Stephen E. Erlenbach

Gregory S. Chojecki/jci

Gregory S. Chojecki

EDB:DCR:jci

II. Procedures

1. **S-E-A conducted an initial site inspection on June 23, 2025.**
   - Documentation in the form of photographs, notes, and measurements was performed.
   - Enbridge Gas personnel performed an odorant test at 7304 Carson Avenue, Cleveland, Ohio. S-E-A observed and documented the test procedure.
2. **S-E-A conducted additional site inspections on June 24, June 30, July 25, August 6, August 25, 2025; and August 26, 2025.**
   - Documentation in the form of photographs, videos, notes, and measurements was performed.
   - Enbridge Gas personnel performed pressure testing on natural gas service lines. S-E-A observed and documented the tests.
   - Enbridge Gas personnel performed bar hole testing around the perimeter of the building. S-E-A observed and documented the bar hole testing results.
   - Enbridge Gas personnel performed borescope inspections (i.e., sent a camera through the piping) of natural gas mains and the south service line. S-E-A observed and documented the results.
   - Enbridge Gas personnel conducted leak survey testing around the perimeter of the building. S-E-A observed and documented the leak survey testing results.
   - Other parties performed leak testing of house line gas piping inside the building. S-E-A observed and documented the results.
   - Evidence was retained by S-E-A and other parties, with chain of custody documentation.
3. **S-E-A conducted laboratory examinations of the collected evidence on September 24, 2025, at S-E-A's office in Cuyahoga Falls, Ohio. Additional examinations were conducted at S-E-A's office in Columbus, Ohio, on October 27, 2025, and January 28, 2026.**
   - Evidence items were transferred to S-E-A from Rimkus on October 27, 2025.
   - Documentation in the form of photographs, videos, notes, and measurements was performed.
   - Flow rate testing and pressure drop testing activities were performed on the various pieces of evidence collected.

- Parties present examined the collected pieces to determine if all relevant piping sections from the building were present.
- Areas of interest were identified and examined with the aid of a digital and/or a stereo microscope(s).
- A thinned section of the pipe wall was extracted and prepared metallographically.
- A union was extracted and analyzed by CT.

III. Discussion

Background Information

According to the information gathered over the course of this investigation, the apartment complex consists of multiple buildings (**Figure 1**), and is several decades old (1950s per Cuyahoga County Fiscal Office). The apartment complex was sold in or around June 2022, and the current owner renovated the apartment complex buildings in or around 2023 to 2024. The renovation included, but was not limited to, the following: sloped roofs were added (previously, the apartment buildings had a flat roof), solar panels were added to the roofs, and the apartment suites were renovated.

Figure 1: Satellite image of apartment complex, courtesy of Google Earth.

On June 23, 2025, before the explosion, maintenance personnel were reportedly notified of an odor at the subject apartment building and Enbridge Gas was called. At approximately 4:14 p.m., while maintenance personnel were responding to the odor, and were near the subject building, the explosion occurred near the southern portion of the building (**Figure 2**).

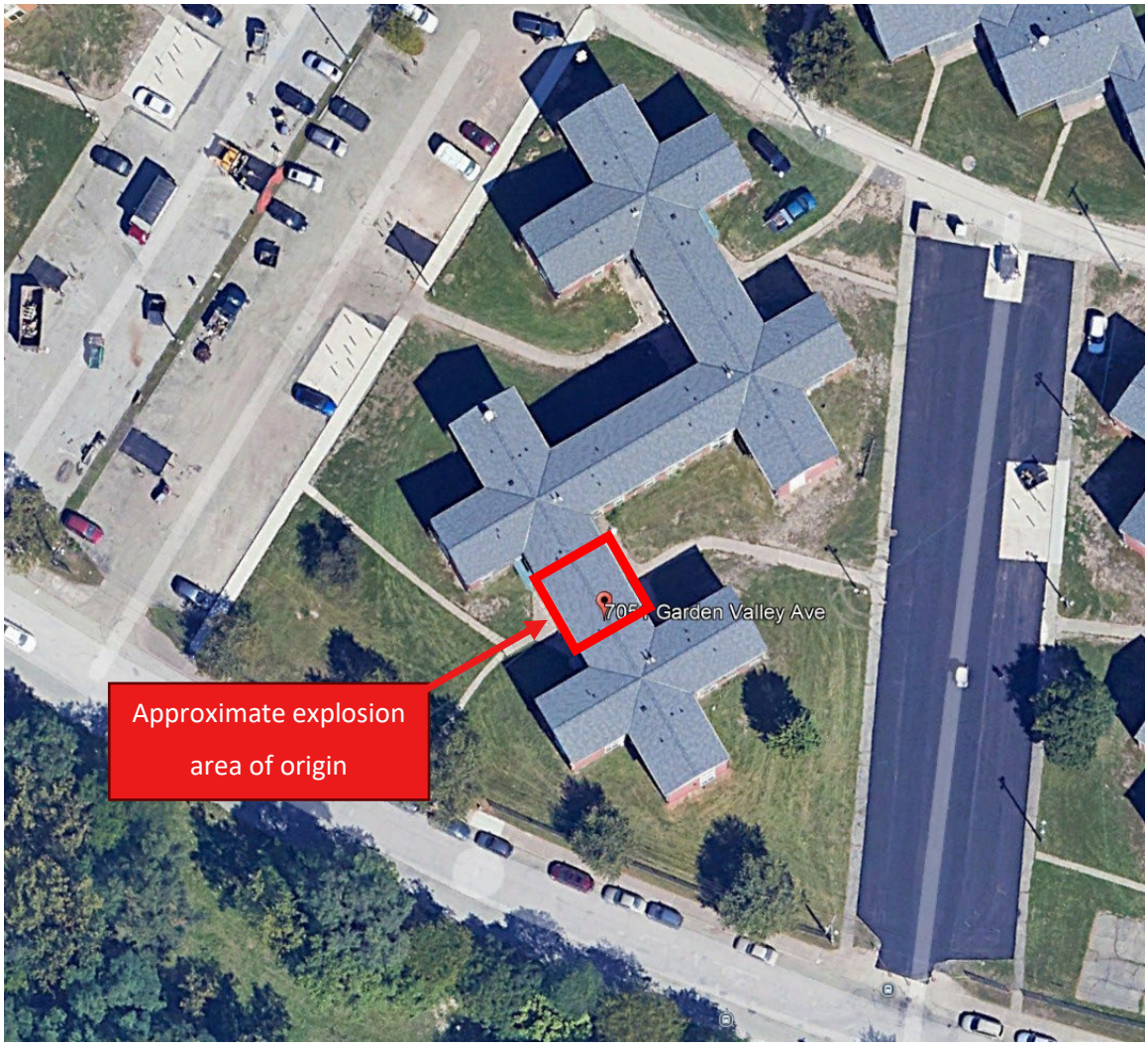

Figure 2: Satellite image of subject apartment building, courtesy of Google Earth.

Site Inspections

June 23, 2025, Site Inspection

S-E-A arrived at the site at approximately 7:45 p.m. (3½ hours after the incident). Firefighting activities were still ongoing at that time. The building was three stories (first floor, second floor, third floor) with the first floor partially below grade. The building had a brick exterior and an asphalt shingle roof. The explosion area of origin appeared to be the first-floor utility room and/or a second-floor apartment directly above the utility room. The explosion area of origin is

shown in **Figure 3**, with the photograph taken from the south, looking north. The explosion area of origin is shown in **Figure 4**, with the photograph taken from the north, looking south.

Figure 3: Explosion area viewed from the south, looking north.

Figure 4: Explosion area viewed from the north, looking south.

Enbridge Gas personnel reported to S-E-A that a gas main line, running east-west, was located below grade to the south of the building, and another east-west gas main line was located below grade to the north of the building. The east-west running mains reportedly operated at seven ounces per-square-inch of pressure ("ounces" hereafter) equivalent to 12.1 inches of water column (" w.c.). A service line was connected to the south main, and was routed underground (south service line) to a gas meter inside a first-floor south utility room. Similarly, a service line connected to the north main and was routed underground (north service line) to a gas meter inside a first-floor north utility room. A small, detached brick building, near the north-east corner of the building, housed a third gas meter; however, that third gas meter served separate apartment buildings to the north, but not the subject building. At a subsequent inspection (discussed later in this report), it was confirmed that the natural gas mains to the north and south of the building were connected by a north-south running main to the east of the building (east main), see **Figure 5**.

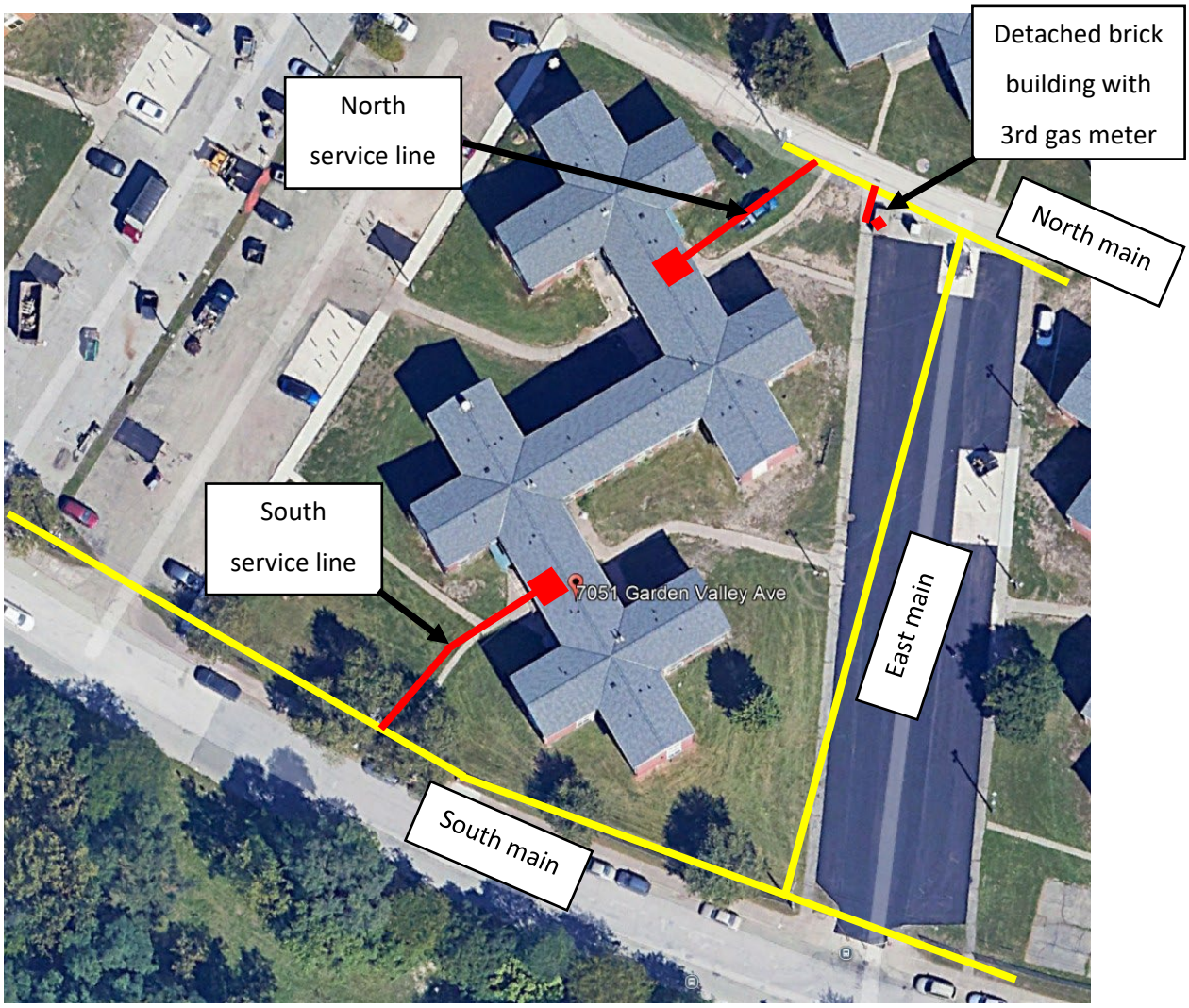

Figure 5: Satellite image with approximate locations of natural gas mains and service lines overlaid.

In Figure 5, the yellow lines represent the natural gas mains, the red lines represent the service lines, and the red squares represent the natural gas meters. The locations and routing shown are approximate and not intended to be exact.

Enbridge Gas personnel performed odorant testing at a gas meter bank located at 7304 Carson Avenue (see Figure 1). S-E-A documented that the odorant testing equipment was last calibrated on August 29, 2023, and was not due for its next calibration until September 27, 2025 (i.e., it was within calibration). The threshold detectable level (TDL) was recorded at 0.37%, and the readily detectable level (RDL) was recorded at 0.53%.

June 24, 2025, Site Inspection

Enbridge Gas personnel excavated the south service line where it connected to the south main, and where the south service line entered the south utility room (**Figure 6**). The below-grade horizontally-routed 3"-steel service line turned vertical approximately 6" from the outside wall, went to above-grade, turned horizontal, and penetrated the building's exterior brick and block wall approximately 6"-above grade. The south gas meter, which is not visible in Figure 6, was downstream of the service line piping shown.

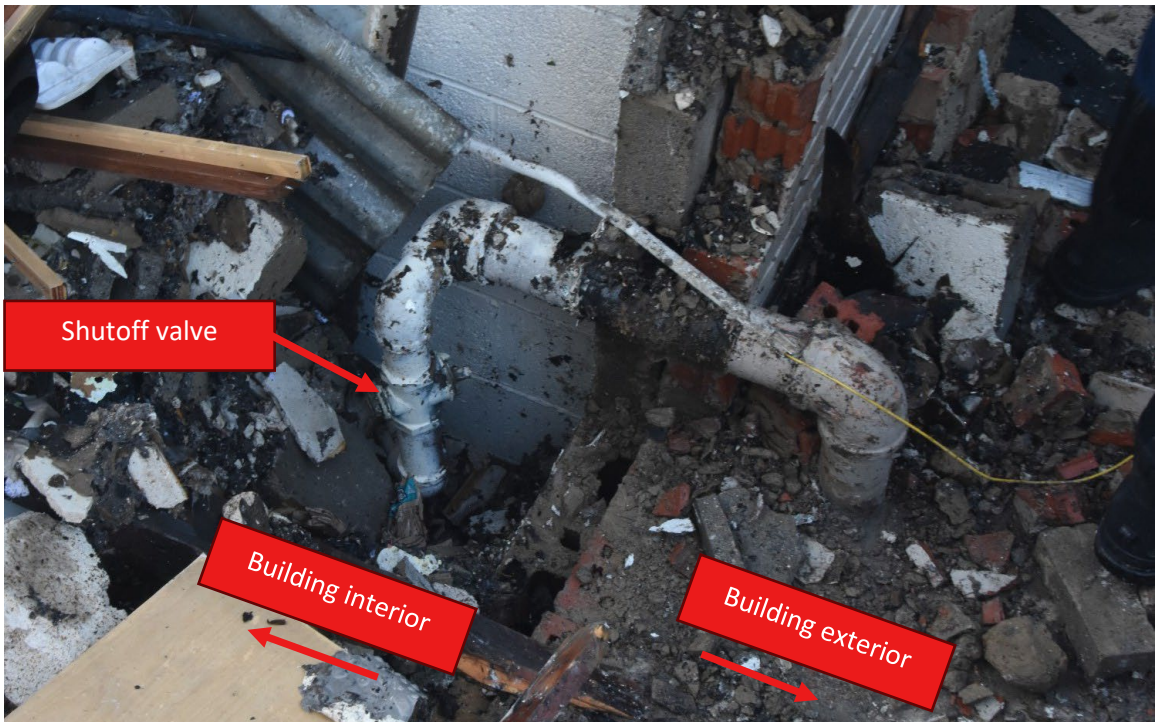

Figure 6: South service line where it enters the subject building.

The south service line was cut, near its connection to the south main (approximately 90 feet south of the explosion area of origin), so that a leak test could be performed. Initially, an attempt was made to close the shutoff valve shown in Figure 6, such that the south service line could be tested up to the closed shutoff valve; however, the handle of the shutoff valve fractured before the valve could be closed completely. Instead, the 2"-steel pipe nipple downstream of the shutoff valve was cut, the cut nipple was unthreaded from the shutoff valve, and a pipe plug was installed on the downstream side of the shutoff valve to facilitate a leak test, **Figure 7**.

Figure 7: Pressure drop test #1, on June 24, 2025, at south service line, against plug on downstream side of shutoff valve.

Enbridge Gas personnel connected pressurized air at the south-end of the south service line and pressurized the south service line to approximately 7.1 ounces (i.e., slightly above operating pressure). Over the course of the leak test (normally 10 minutes), the pressure dropped from a starting pressure of 7.1 ounce to 6.0 ounce at approximately four minutes into the test, 5.0 ounce at approximately seven minutes into the test, and 4.3 ounce at ten minutes into the test.

Leak detector solution was applied to the test rig (at the south-end of the south service line), the south service line where it penetrated the exterior wall, elbow fittings, and the shutoff valve to aid in determining where the pressurized air was leaking; however, active soap bubbles were not observed on the test rig or piping near the exterior wall.

Enbridge Gas personnel then cut the south service line, just outside the exterior wall, such that a temporary coupling and plug could be installed, and a second leak test was performed, see

Figure 8. All sections of the south service line that were cut and removed were retained as evidence by S-E-A.

Figure 8: Pressure drop test #2, on June 24, 2025, at south service line, against coupling and plug on vertical riser, outside of building.

Enbridge Gas personnel connected pressurized air at the south-end of the south service line and pressurized the south service line to approximately 7.2 ounces (i.e., slightly above operating pressure). The pressure remained at 7.2 ounces for the duration of the 10-minute leak test, indicating no leak.

Similarly, the north service line was excavated where it connected to the north main. As the northern side of the building was intact, Enbridge Gas personnel entered the northern utility room, removed the gas meter, and closed the shutoff valve upstream of the meter (**Figure 9)**.

Figure 9: North service line in northern utility room.

All leak tests were video recorded by S-E-A, observed by members of the Public Utilities Commission of Ohio (PUCO), and shared with other parties.

The City of Cleveland utilized an excavator to remove debris from the south utility room. The south gas meter and the attached upstream and downstream piping were discovered and collected (**Figure 10**). Several fractured segments of house line gas piping were observed in the area of the south utility room. Additional collection of the fractured piping segments was not performed on June 24, 2025, due to the unstable structure above.

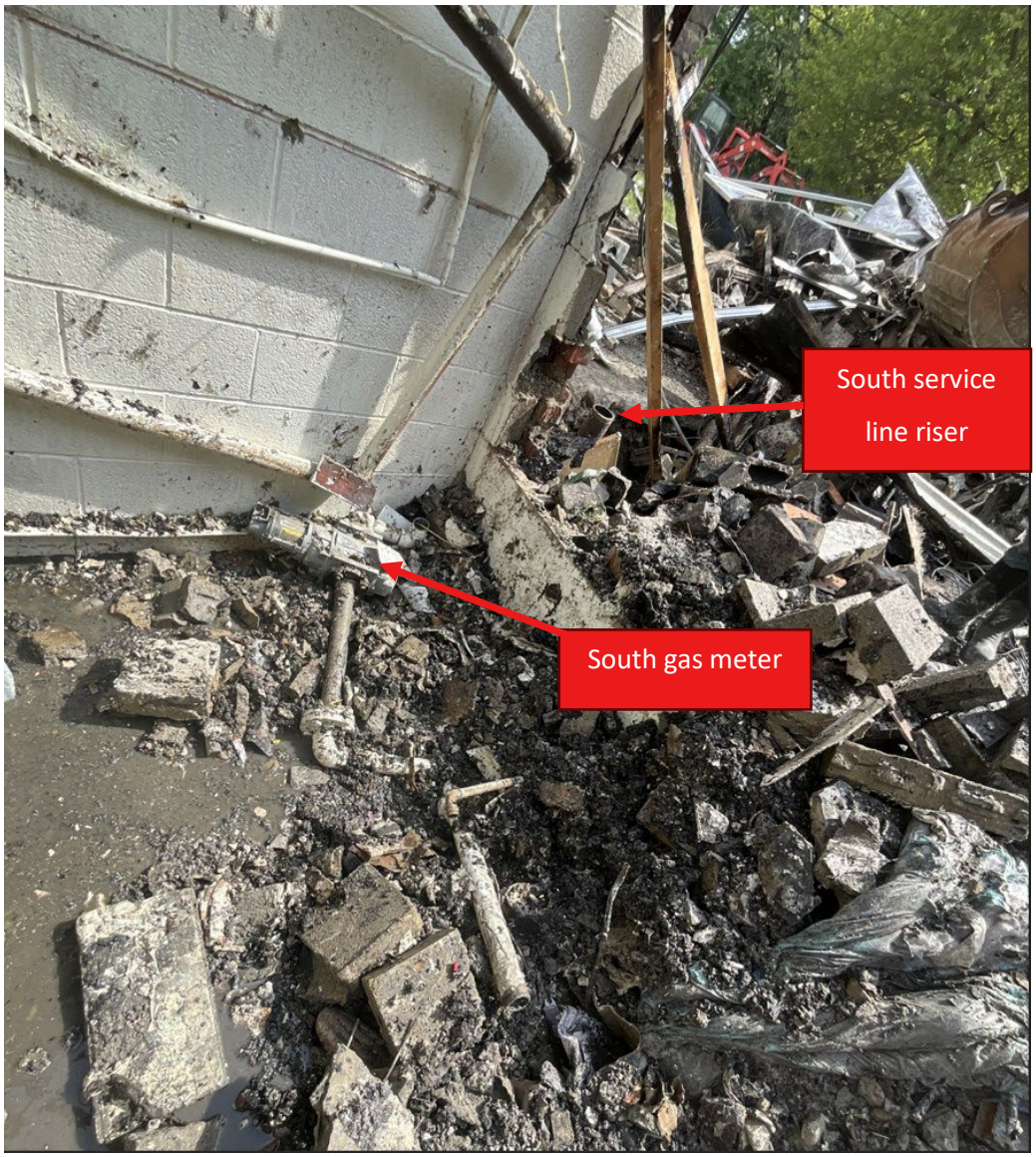

Figure 10: South utility room and south gas meter.

The following evidence was collected and retained by S-E-A on June 24, 2025.

- Evidence #1 - South service line, pipe nipple downstream of valve just inside wall;
- Evidence #2 - South service line coupling near connection to main and elbow segment;
- Evidence #3 - South service line segment and valve from inside exterior wall;
- Evidence #4 - North gas meter; and,
- Evidence #5 - Southern gas meter and attached piping.

June 30, 2025, Site Inspection

S-E-A participated in a joint scene examination on June 30, 2025. Portions of the interior of the subject apartment building were inspected. House line gas piping downstream of the south gas meter and north gas meter were inspected, revealing that the south gas meter served two mechanical rooms, and the north gas meter served two additional mechanical rooms.

The subject apartment building had four total mechanical rooms: within each of the four mechanical rooms was a natural gas fired, storage-type, domestic water heater, and a natural gas fired heating hot water boiler. The south gas meter supplied natural gas to the two southern mechanical rooms. The north gas meter supplied natural gas to the two northern mechanical rooms. Inspection of various apartment units revealed that natural gas did not appear to extend to the individual apartments, and no natural gas appliances were present within individual apartments.

July 25, 2025, Site Inspection

S-E-A participated in a joint scene examination on July 25, 2025. Enbridge Gas personnel utilized a remote methane leak detector (RMLD) to scan the entire perimeter of the building for natural gas leaks and no leaks were found. Enbridge Gas personnel performed bar hole testing around the perimeter of the building, at approximate 10' to 15' intervals. Bar hole testing revealed "class 2 leak" near the north end of the property, approximately 170 feet from the explosion area of origin, at the opposite end of the subject building. Additional bar hole testing in that area revealed that the leak "zero 'ed" out closer to the subject building.

A pressure drop test was repeated on the south service line. Enbridge Gas personnel connected pressurized air at the south-end of the south service line. The plug at the temporary coupling at the north-end of the south service line was loosened, and the pressure dropped, confirming that test air was pressurizing from the southern-end of the south service line to the coupling and plug shown in Figure 8 (i.e., it was ruled out that water, or some other anomaly was creating an unintentional seal or plug in the pipe).

The south service line was pressurized to approximately 7.3 ounces (i.e., slightly above operating pressure). The pressure remained at 7.3 ounces for the duration of the 10-minute

leak test, indicating no leak. The leak test was video recorded by S-E-A and observed by parties present.

Enbridge Gas personnel inserted a borescope camera into the southern end of the south service line and sent the camera north towards the building, until the camera reached an elbow at the vertical riser near the exterior of the building. No anomalies were observed.

Enbridge Gas personnel inserted a borescope camera into the south main, where the south service line previously connected, and sent the camera west approximately 65 feet, then east approximately 60 feet. No anomalies were observed.

The borescope inspections were viewed live, were video recorded by S-E-A, and were shared with other parties.

The following evidence was collected and retained by S-E-A on July 25, 2025.

- Evidence #6: South service line, upstream end segment cut for pressure test.

August 6, 2025, Site Inspection

S-E-A participated in a joint scene examination on August 6, 2025. Enbridge Gas personnel inserted a borescope camera into the south main, where the south service line previously connected (south excavation site in **Figure 11**), and sent the camera west approximately 143'. Three capped/plugged taps, possibly for use with "baghouse plugs" during service on main lines, were observed approximately 104', 108', and 112' west of the camera insertion location. No other anomalies were observed.

Enbridge Gas personnel inserted a borescope camera into the south main, where the south service line previously connected (south excavation site in Figure 11), and sent the camera east approximately 160 feet. No anomalies were observed.

Enbridge Gas personnel excavated near the southeast corner of the lot, where a north-south running gas main was reported based on Enbridge Gas records (east main). A 6" natural gas main was found, approximately 15 feet west of the utility pole at the southeast corner of the lot, routed in an approximate north-south direction to the east of the building. Enbridge Gas

personnel inserted a borescope camera into the east main (southeast excavation site in Figure 11) and sent the camera north approximately 166 feet. No anomalies were observed.

August 25, 2025, Site Inspection

S-E-A participated in a joint scene examination on August 25, 2025. Several segments of natural gas piping, that had fractured from the remainder of the house line gas piping, were laying loose and were collected as evidence by other parties for future testing.

Other parties performed leak testing on the house line gas piping that previously were fed from the south gas meter and that were still connected to the two water heaters and two boilers within the two mechanical rooms. Flow meters did not detect any leaks during the testing on the remaining house line gas piping connected to the water heaters and boilers in the two mechanical rooms. Static pressure drop testing was not performed. Testing was not performed on site on the loose laying fractured segments (see lab exam sections later in report).

Enbridge Gas personnel re-excavated the east-west-running north main, where the north service line had been previously connected. Enbridge Gas personnel inserted a borescope camera into the north main, where the north service line previously connected (north excavation site in Figure 11), and sent the camera west approximately 2' before it was discovered that the north main was capped at that location. No anomalies were observed.

Enbridge Gas personnel inserted a borescope camera into the north main, where the north service line previously connected (north excavation site in Figure 11), and sent the camera east. Two taps were observed near the detached brick building at the northeast corner of the lot. Additionally, the north-south-running east main was observed.

Enbridge Gas personnel excavated where the north main connected to the east main. Enbridge Gas personnel inserted a borescope camera into the east main, where it was connected to the north main (northeast excavation site 1 in Figure 11), and sent the camera south approximately 175'. No anomalies were observed.

The borescope inspections were viewed live, were video recorded by S-E-A, and were shared with other parties.

August 26, 2025, Site Inspection

S-E-A participated in a joint scene examination on August 26, 2025. The two taps in the north main near the detached brick building at the northeast corner of the lot were revealed (northeast excavation site 2 in Figure 11). One tap fed the gas meter within the detached brick building, and the other tap was capped/plugged.

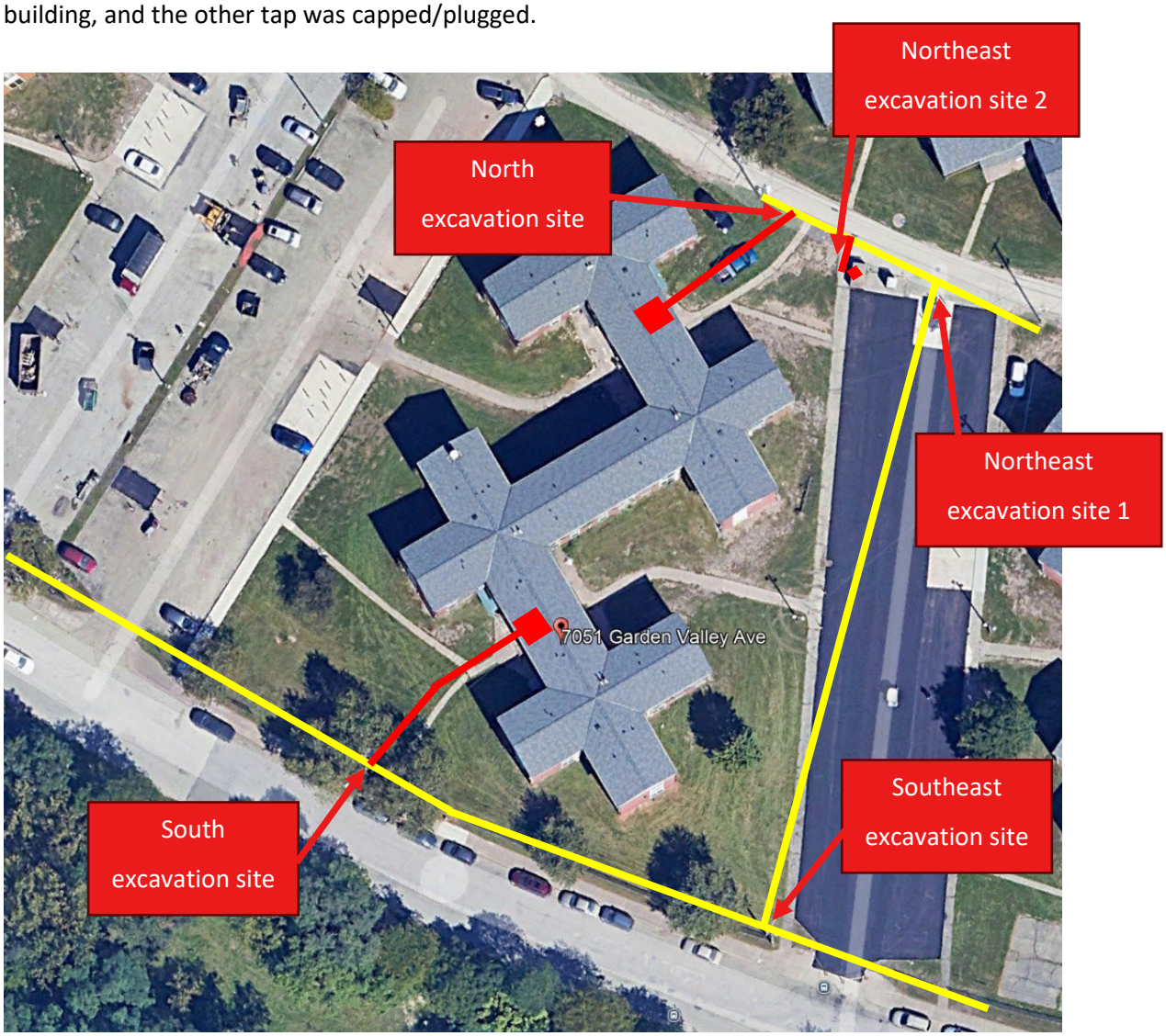

Figure 11: Excavation sites for borescope activities.

Laboratory Examinations

September 24, 2025, Lab Exam

S-E-A conducted a joint lab exam at the S-E-A office in Cuyahoga Falls, Ohio, on September 24, 2025, for the purpose of performing quantitative leak testing on evidence collected by S-E-A

(Evidence items #1 through #6). An air compressor, flow meters, regulators, pressure gauges, and test piping/fittings were used to perform and document the testing. The following is a summary of tests performed on September 24, 2025. Note, all leak testing using flow meters was performed using pressurized air. The flow rates listed throughout this report are listed in the flow rate of air that was observed during the testing. The flow rates have not been converted to the flow rates for natural gas.

- Evidence #1: South service line, pipe nipple downstream of valve just inside wall
  - **Figure 12:** Parties present agreed not to test with pressurized air. The approximately 4"-long, 3"-diameter steel nipple was visually inspected. The nipple was unremarkable with no apparent leak locations, no major corrosion, and no observable anomalies present.
- Evidence #2: South service line coupling near connection to main and elbow segment and Evidence #6: South Service Line, upstream end segment cut for pressure test
  - **Figure 13**: Parties present agreed not to test with pressurized air as the installed location of the evidence was approximately 90 feet from the explosion area of origin, and the evidence was unremarkable with no observable anomalies present.
- Evidence #4: North gas meter
  - **Figure 14**: Parties present agreed not to test with pressurized air as the installed location of the evidence was approximately 130' from the explosion area of origin, and the evidence was unremarkable with no observable anomalies present.
- Evidence #3: South service line segment and valve from inside exterior wall
  - **Figure 15**: The short 3"-diameter nipple and elbow (right side of Figure 15) were submerged in water and pressurized with air. No leaks were observed.
  - The other portion (left side of Figure 15) of Evidence #3 was comprised of the 3"-diameter piping that penetrated the building's exterior wall (above grade), a reducing elbow, 2"-street elbow, 2"-nipple, and 2"-shutoff valve (refer back to Figure 6 for installed location and orientation). The portion of the piping that penetrated the exterior wall was found wrapped in a material similar to black electrical tape. The evidence was pressurized to approximately 12.7" w.c. (7.3 ounces) and a Dwyer flow meter with a 0.6 to 5.0 SCFH scale was utilized to measure a leak rate. No observable leak rate was detected and the "bead" on the flow meter did not rise. The evidence was

pressurized with air, then shut off from air, and it did not hold pressure, indicating a very small leak, less than 0.6 SCFH based on previous test with the flow meter. The evidence was submerged in water, pressurized with air, and bubbles appeared to emanate from underneath the black tape. The bubble locations were marked with pink tape for future testing.

- Evidence #5: Southern gas meter and attached piping
  - **Figure 16:** The evidence was pressurized to approximately 13.1" w.c. (7.6 ounces) and a Dwyer flow meter with a 0.6 to 5.0 SCFH scale was utilized to measure a leak rate. No observable leak rate was detected and the "bead" on the flow meter did not rise. The evidence was pressurized with air, then shut off from air, and it did not hold pressure, indicating a very small leak(s), less than 0.6 SCFH based on previous test with the flow meter. Leak detector solution was sprayed on the evidence, and active bubbling (indicating a leak) was present on the elbow and union downstream of the meter.
  - The piping was cut, just downstream of the gas meter, and the meter-side of the evidence held pressure and measured zero flow on a flow meter (i.e., no leak).

Figure 12: Evidence #1 - south service line, pipe nipple downstream of valve just inside wall.

Figure 13: Evidence #2 - south service line coupling near connection to main and elbow segment, and Evidence #6 - south service line, upstream end segment cut for pressure test.

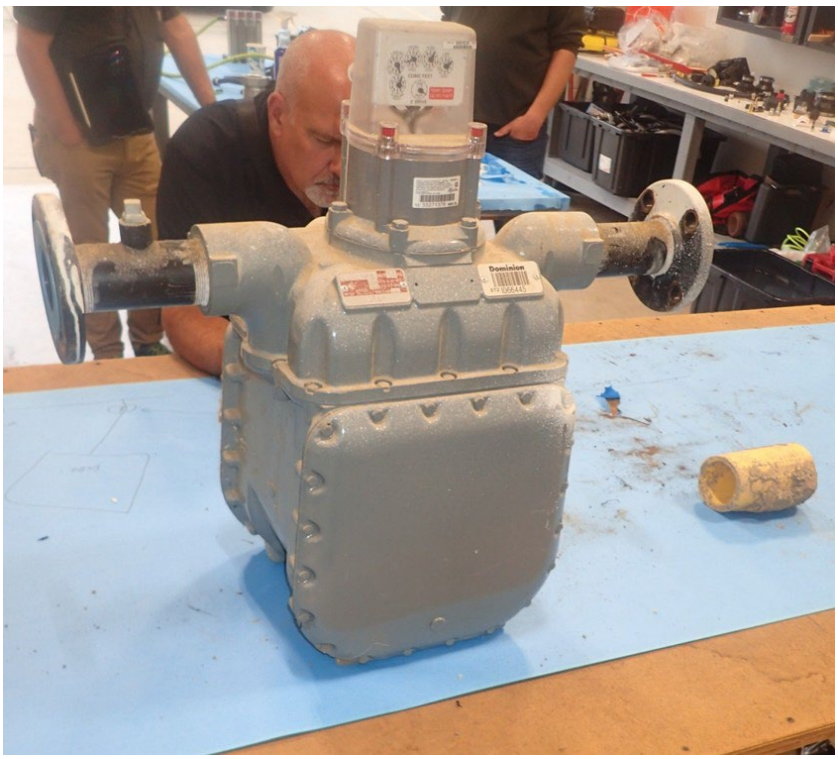

Figure 14: Evidence #4 - north gas meter.

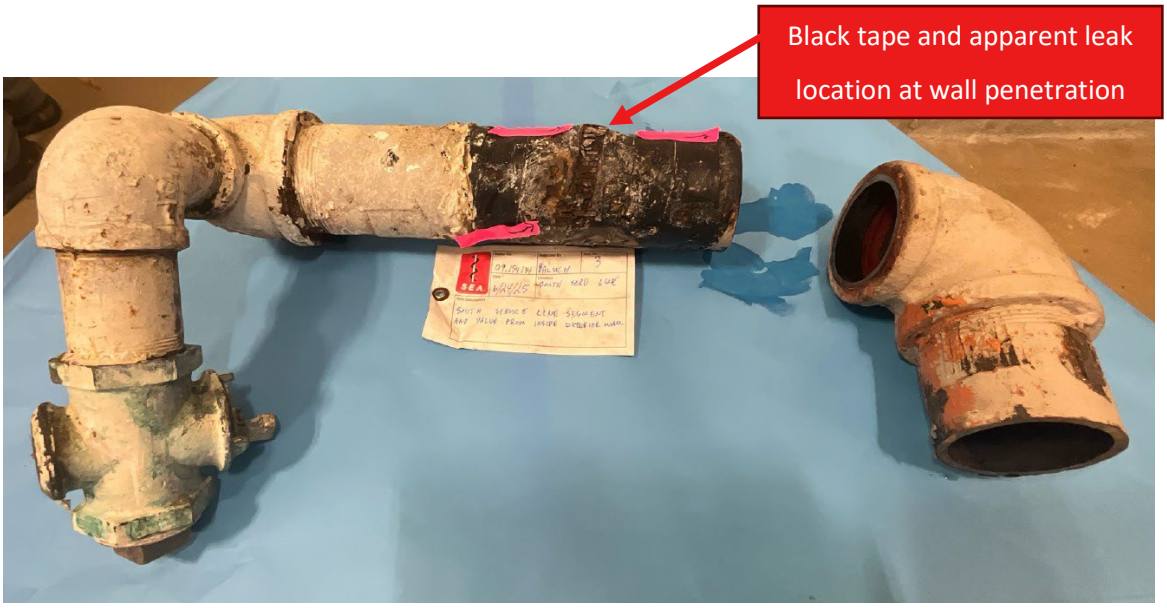

Figure 15: Evidence #3 - south service line segment and valve from inside exterior wall.

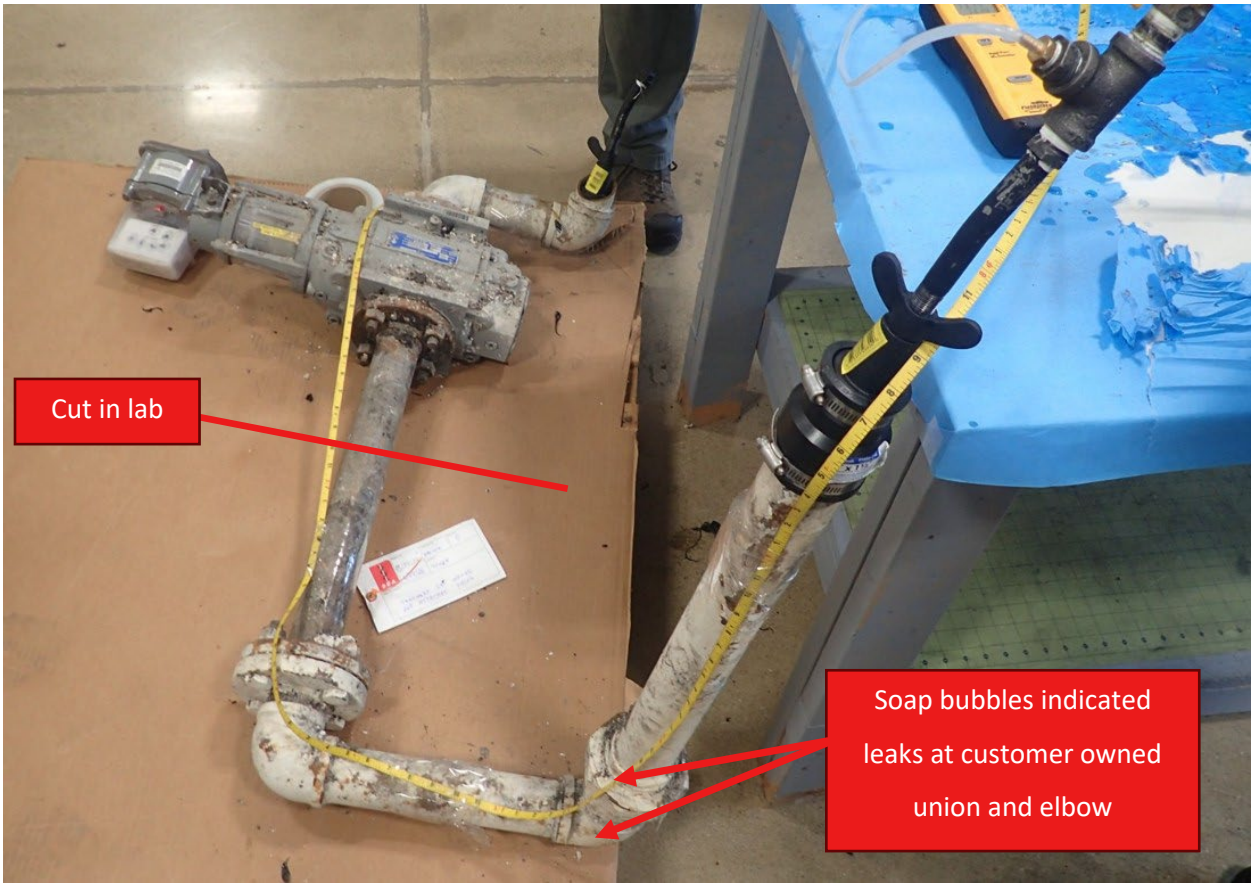

Figure 16: Evidence #5 - southern gas meter and attached piping.

October 27, 2025, Lab Exam - Evidence #3

S-E-A conducted a joint lab exam at the S-E-A office in Columbus, Ohio, on October 27, 2025, for the purpose of performing additional testing on Evidence #3 and on the house line gas piping that was collected by others. S-E-A purchased a new Dwyer flow meter for the additional testing, specifically, a Dwyer flow meter with a 0.1 to 1.0 SCFH scale.

A leak test was performed on Evidence #3, prior to removal of the black tape, with the 0.1 to 1.0 SCFH flow meter, at approximately 13.4" w.c. (7.7 ounces). No observable leak rate was detected with the 0.1 to 1.0 SCFH flow meter, and the "bead" on the flow meter did not rise. A static leak test was performed on Evidence #3, with a starting pressure of 13.38" w.c. After 5 minutes, pressure dropped to 13.03" w.c., indicating a very small leak, less than 0.1 SCFH, based on the previous test with the flow meter.

The black tape that was wrapped around the portion of the piping that penetrated the exterior wall was removed by hand (**Figure 17)**. An accumulation of corrosion product was observed beneath the tape. Removal of the corrosion product found that the pipe wall had thinned almost completely beneath this corrosion product. The corrosion product was voluminous and had caused the tape to bulge outwards, due to the change in volume of the pipe material as the corrosion occurred.

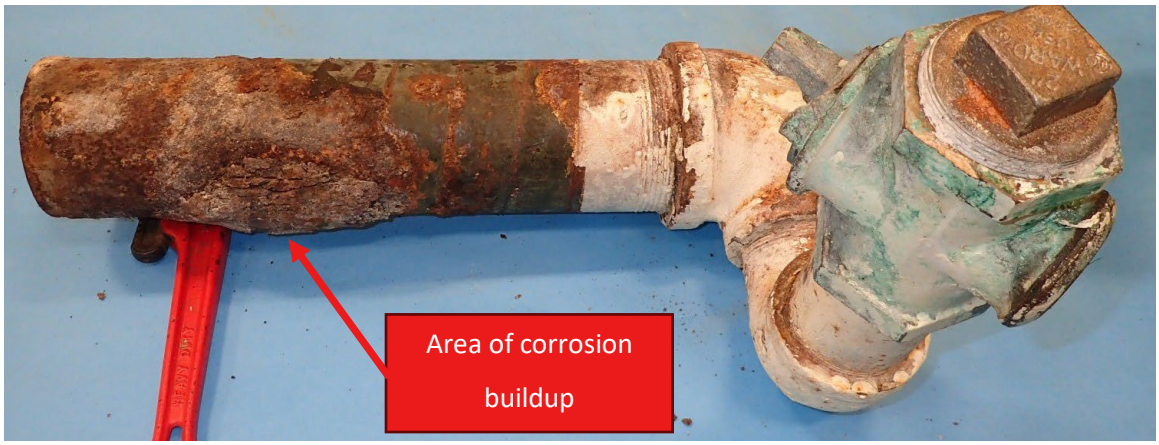

Figure 17: Evidence #3 with black tape removed.

After removal of the black tape, a leak test was performed on Evidence #3, with the 0.1 to 1.0 SCFH flow meter, at approximately 13.1" w.c. (7.6 ounces). No observable leak rate was detected with the 0.1 to 1.0 SCFH flow meter and the "bead" on the flow meter did not rise.

After removal of the black tape, a pressure drop test was performed on Evidence #3, with a starting pressure of 12.94" w.c. After 5 minutes, pressure dropped to 12.48" w.c., indicating a very small leak, less than 0.1 SCFH, based on the previous test with the flow meter.

The accumulated corrosion product was removed and preserved (**Figure 18)**.

Figure 18: Evidence #3 with corrosion buildup removed.

After removal of the corrosion buildup, a leak test was performed on Evidence #3, with the 0.1 to 1.0 SCFH flow meter, at approximately 13.6" w.c. (7.9 ounces). No observable leak rate was detected with the 0.1 to 1.0 SCFH flow meter and the "bead" on the flow meter did not rise. After removal of the corrosion buildup, a pressure drop test was performed on Evidence #3, with a starting pressure of 13.41" w.c. After 5 minutes, pressure dropped to 9.65" w.c.; after 10 minutes, pressure dropped to 3.08" w.c., indicating a very small leak, less than 0.1 SCFH based on the previous test with the flow meter. Evidence #3 was submerged in water and pressurized, and one bubble location was observed, beneath the previously removed corrosion buildup. Multiple cuts were made to Evidence #3 for additional metallurgical examination.

Digital microscope (Keyence) images of the pipe's exterior surface (**Figure 19**) and interior surface (**Figure 20)** in the areas of the leak are shown below. The larger of the two holes measured approximately 0.08" x 0.03", with an area of approximately 0.002 in^2. The smaller of the two holes measures approximately 0.03" x 0.03", with an area of approximately 0.001 in^2.

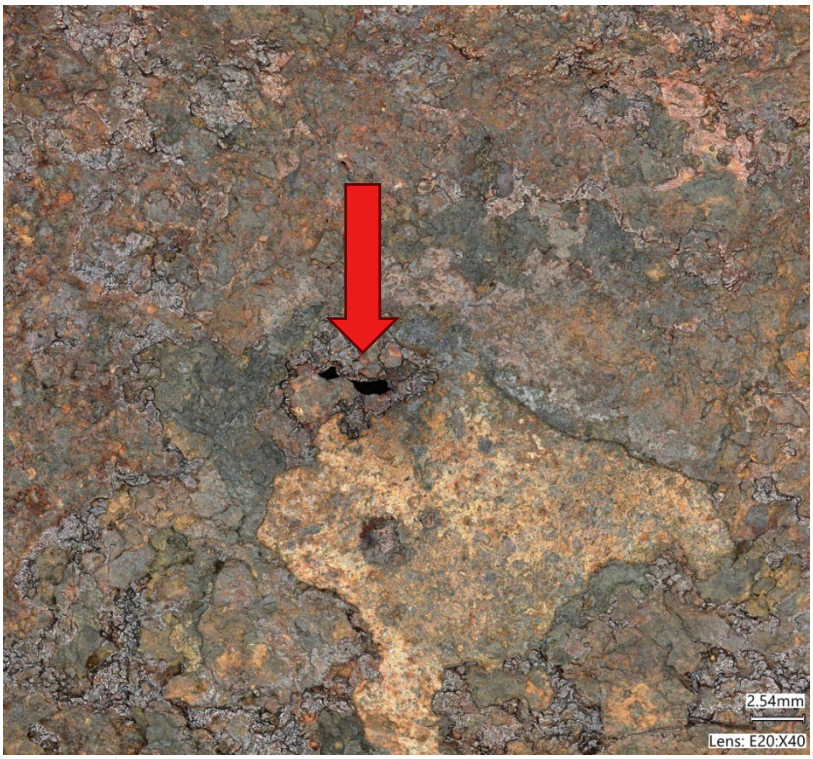

Figure 19: Evidence #3 - pipe exterior surface in area of the leak.

Figure 20: Evidence #3 - pipe interior surface in area of the leak.

Wall thickness of the 3"-diameter pipe at the upstream end (not in the area of the corrosion) was measured with digital calipers at approximately 0.2290" (5.8166 mm). A cut was made through the pipe wall, near the location of the two holes shown in Figure 19 and Figure 20. A section of the pipe wall was mounted in two-part epoxy and prepared metallographically. The mounted section is shown in **Figure 21**. The shape of the corrosion, and condition of the inner surface versus the outer surface, indicates that the corrosion occurred outside-in. The pipe wall thickness was found to be thinned, as shown by the annotated measurements in Figure 21.

Figure 21: The pipe wall was found to be thinned in the area of the two holes.

October 27, 2025, Lab Exam - House Line Evidence

The house line gas piping that had been collected by others was transferred to S-E-A's possession, see evidence listing below.

- Evidence #7 - (Rimkus #1) 2" black pipe w/ elbow;
- Evidence #8 - (Rimkus #2) 2" black pipe w/ 90° x 2;
- Evidence #9 - (Rimkus #3) 1" x 10' black pipe;
- Evidence #10 - (Rimkus #4) 1" x 8', bent in black pipe;
- Evidence #11 - (Rimkus #5) ¾" x 4' w/ gate shutoff;
- Evidence #12 - (Rimkus #6) ¾" x 3' w/ elbow;
- Evidence #13 - (Rimkus #7) 2" x 3" w/ cut end;

- Evidence #14 - (Rimkus #8) 2" wrapped black pipe;
- Evidence #15 - (Rimkus #9) 2" black pipe w/ union; and,
- Evidence #16 - (Rimkus #10) 2" cutoff in bag black pipe.

The evidence was leak tested using a similar test setup as previous leak tests (pressurized to approximately 12" to 13" w.c. using pressurized air, regulators, flow meters, pressure gauges, test piping/fittings). Leak detector solution was used in areas of interest. The following is a summary of tests performed on the house line piping on October 27, 2025. Note that some of the piping appeared to be water piping. Additionally, Evidence #13 and Evidence #16 were not loose-laying piping segments, but were instead connected to the intact piping on site. Evidence #13 and Evidence #16 were cut in the field for purposes of determining if all piping, between the south gas meter and Evidence #13/Evidence #16, were collected as evidence (i.e., no missing sections of pipe).

- Evidence #7: (Rimkus #1) 2" pipe w/ elbow
  - Leaked at approximately 1.7 SCFH at approximately 12.3" w.c. Leak detector solution was applied to the evidence and to the test rig. Active bubbling was observed at the evidence elbow and at S-E-A's test rig where it connected to the evidence (a good seal could not be made).
- Evidence #8: (Rimkus #2) 2" black pipe w/ 90° x 2
  - No leak observed on flow meters; however, leak detector solution showed active bubbling at the elbow.
- Evidence #9: (Rimkus #3) 1" x 10' black pipe
  - No leak observed on flow meters.
- Evidence #10: (Rimkus #4) 1" x 8', bent in black pipe
  - No leak observed on flow meters.
- Evidence #11: (Rimkus #5) ¾" x 4' with gate shutoff
  - No leak observed on flow meters.
- Evidence #12: (Rimkus #6) ¾" x 3' with elbow
  - No leak observed on flow meters.
- Evidence #13: (Rimkus #7) 2" x 3" with cut end
  - No leak observed on flow meters.

- Evidence #14: (Rimkus #8) 2"-wrapped black pipe
  - No leak observed on flow meters.
- Evidence #15: (Rimkus #9) 2"-black pipe with union
  - The union position had been previously marked in the field with a paint pen (by others). Leak testing revealed a leak of 74 SCFH at 11.06" w.c. with the paint marks aligned. The union was observed to be extremely loose and easily manipulated by hand unintentionally. Leak detector solution was applied to the union. Active bubbling indicated that the union was leaking from between the two mating halves, and out from around the union nut (not leaking from threaded connections to the two pipe nipples).
  - Parties agreed to cease further examination or manipulation on the union until a protocol could be developed.
- Evidence #16: (Rimkus #10) 2"-cutoff in bag black pipe
  - Item was not tested, as it was leak tested in the field on August 25, 2025.

January 28, 2026, Lab Exam - Matching piping

S-E-A conducted a joint lab exam at the S-E-A office in Columbus, Ohio, on January 28, 2026, for the purpose of performing additional examination on 2"-union from Evidence #15, and to determine if all house line gas piping was collected as evidence from between the south gas meter and the two 2"-pipes that supplied natural gas piping to the two mechanical rooms.

Parties present participated in matching up the various ends of the piping/fittings that had been collected as evidence. Preliminary matching appeared to show that all piping between the south gas meter and the two 2"-pipes supplying the two mechanical rooms was collected as evidence (i.e., no missing piping). **Figure 22** shows utility room piping from a nearly identical apartment building utility room, with S-E-A's evidence item numbers labeled.

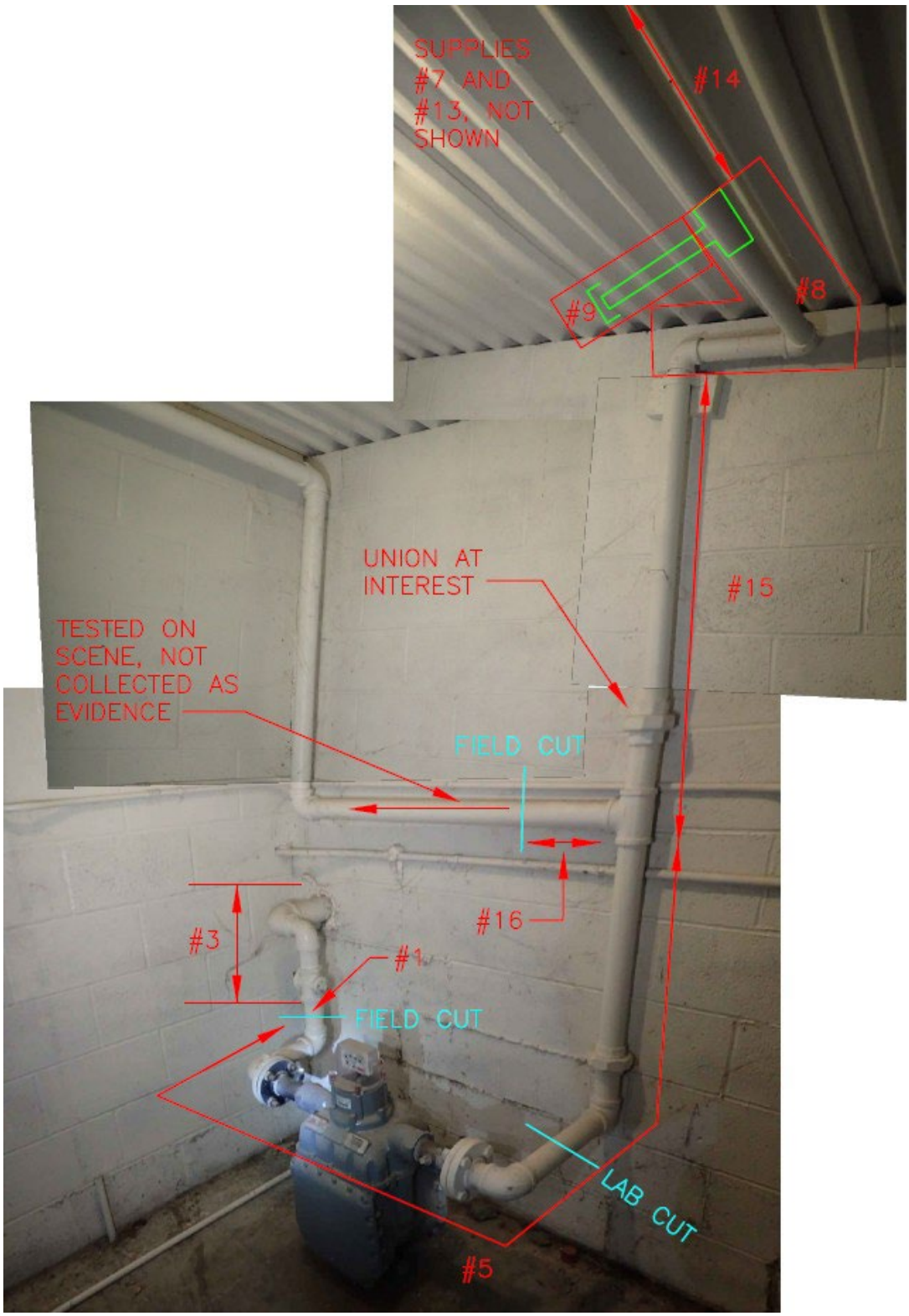

Figure 22: Evidence item locations on nearly identical utility room piping.

January 28, 2026, Lab Exam - Union from Evidence #15

During the October 27, 2025, lab examination, the union from Evidence #15 was found to leak and it was determined that this union warranted further investigation.

A pipe union is a three-piece fitting comprised of a male end, female end, and a union nut, see **Figure 23 through Figure 25**. The male end of a union is typically connected to a corresponding threaded pipe nipple, with pipe dope or polytetrafluoroethylene (PTFE) tape applied to the male threads of the pipe nipple. The union nut is slid over the pipe nipple that the female end of the union will be attached to. The female end of the union is connected to its own corresponding threaded pipe nipple, with pipe dope or PTFE tape applied to the male threads of the pipe nipple. Pipe dope, also known as pipe joint compound, is a thick, paste-like material that is brushed onto the male threads of a threaded fitting before assembly. The pipe dope acts as a lubricant to make threading easier and fills the small gaps between threads. In a threaded joint, the threads and the pipe dope create a leak-free seal.

Once the male end and female end are properly threaded onto their corresponding pipe nipples, the union nut is tightened, such that the inside female threads of the union nut connect to the outside male threads on the male end, bringing the female end and male end together. The union nut threads do not create a seal, and pipe dope or PTFE tape are not typically used at the union nut. S-E-A created Figure 23 to show an approximation of a typical union cross section. Note, Figure 23 is intended to be diagrammatical, and is not to scale.

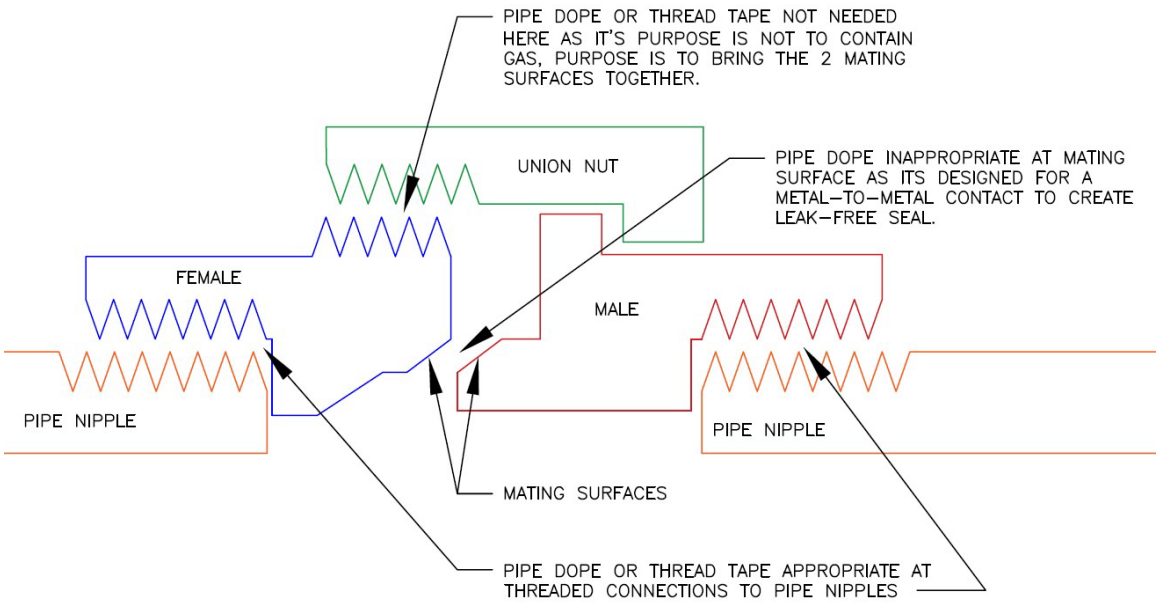

Figure 23: Diagram of typical union cross section.

Typically, the union nut is initially hand tightened, and then two wrenches are used to make the union nut "wrench tight." A male chamfered or angled mating surface meets a corresponding female chamfered or angled mating surface, creating metal-to-metal contact and a leak free connection. Note, PTFE tape or pipe dope is not typically applied to the mating surfaces of the male end and female end, a proper connection is made through the metal-to-metal contact.

The 2"-diameter pipe nipples on the upstream and downstream side of the subject union were cut to permit further examination. The entire union was CT scanned intact to determine if the union nut threads were broken, either from post-incident building collapse, or from the explosion itself; however, the CT scan and subsequent disassembly revealed that all observable threads were intact.

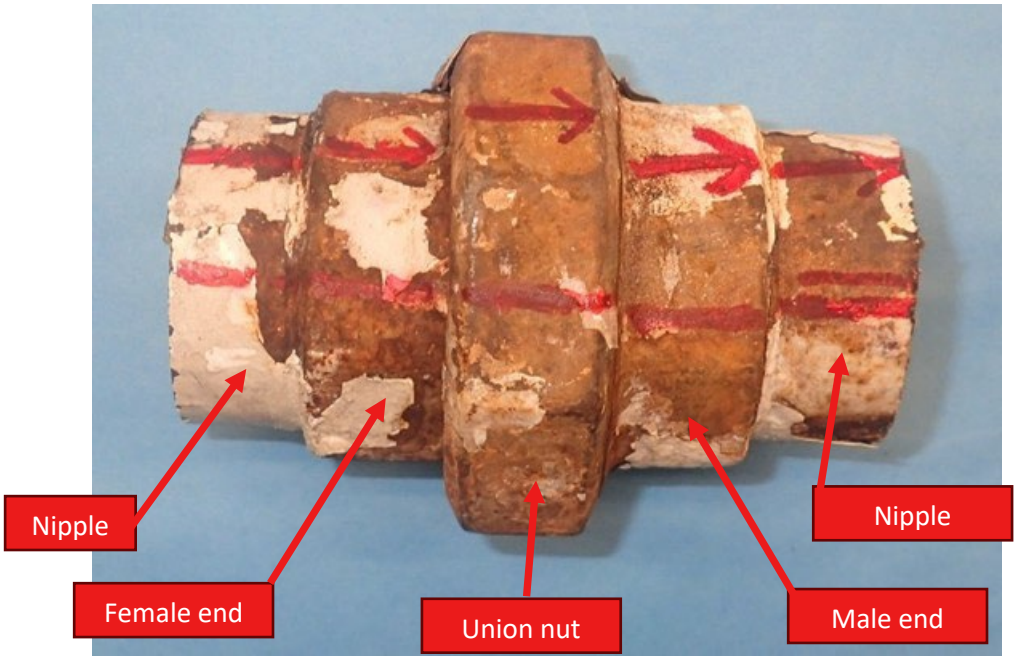

Figure 24: 2"-diameter union, still assembled, from Evidence #15.

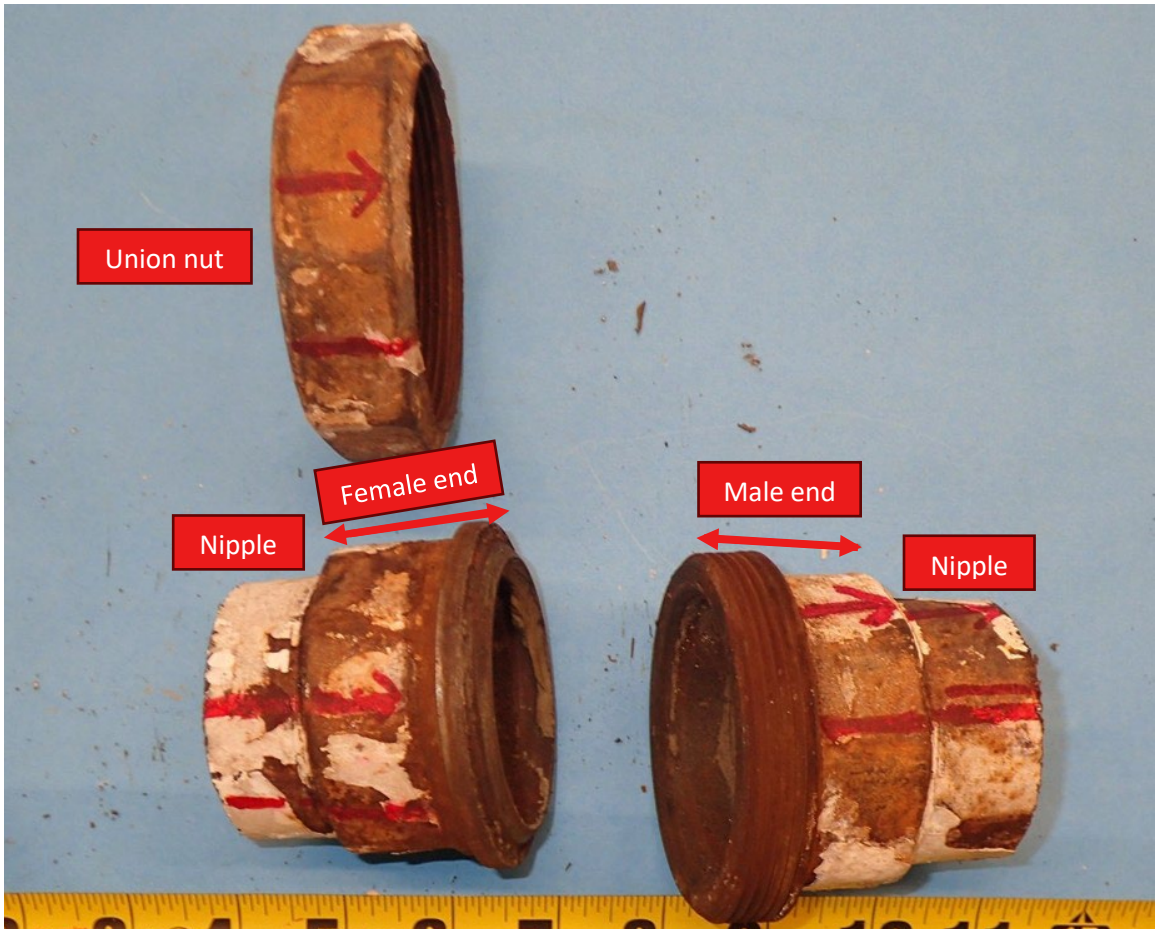

Figure 25: 2"-diameter union, disassembled, from Evidence #15.

Disassembly of the union revealed that the union nut was less than hand tight. It took five full rotations to disassemble the union nut, separating the two union halves. Threads on the union nut and male end were observed to be intact. Inspection of the mating surfaces of the male end and female end revealed that apparent pipe dope was used, likely during the original assembly, see **Figure 26 and Figure 27**. Note, apparent pipe dope was also observed at the connection of the two union halves to the threaded pipe nipples, this was expected as pipe dope (or PTFE tape) should be applied to the threaded connections, but not at the mating surfaces of the union halves.

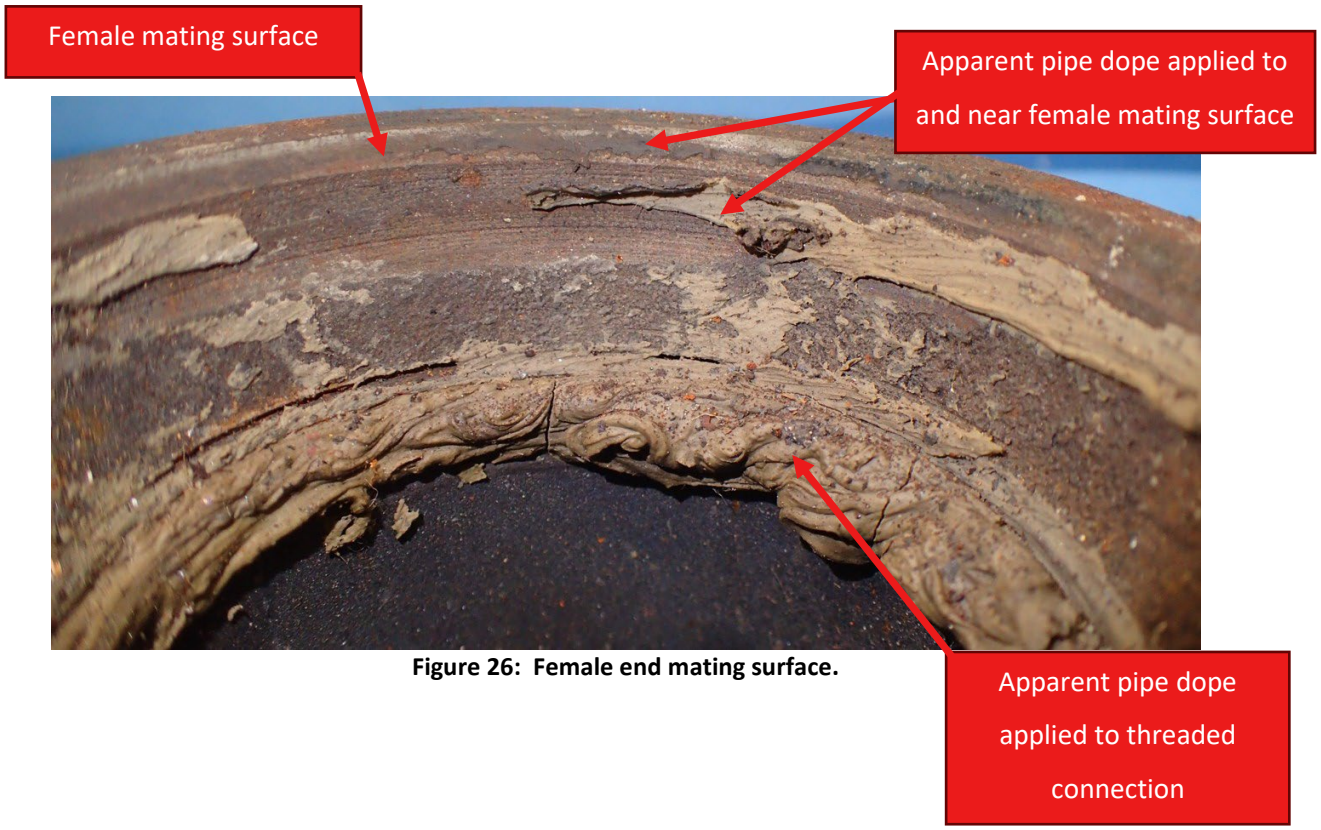

Figure 26: Female end mating surface.

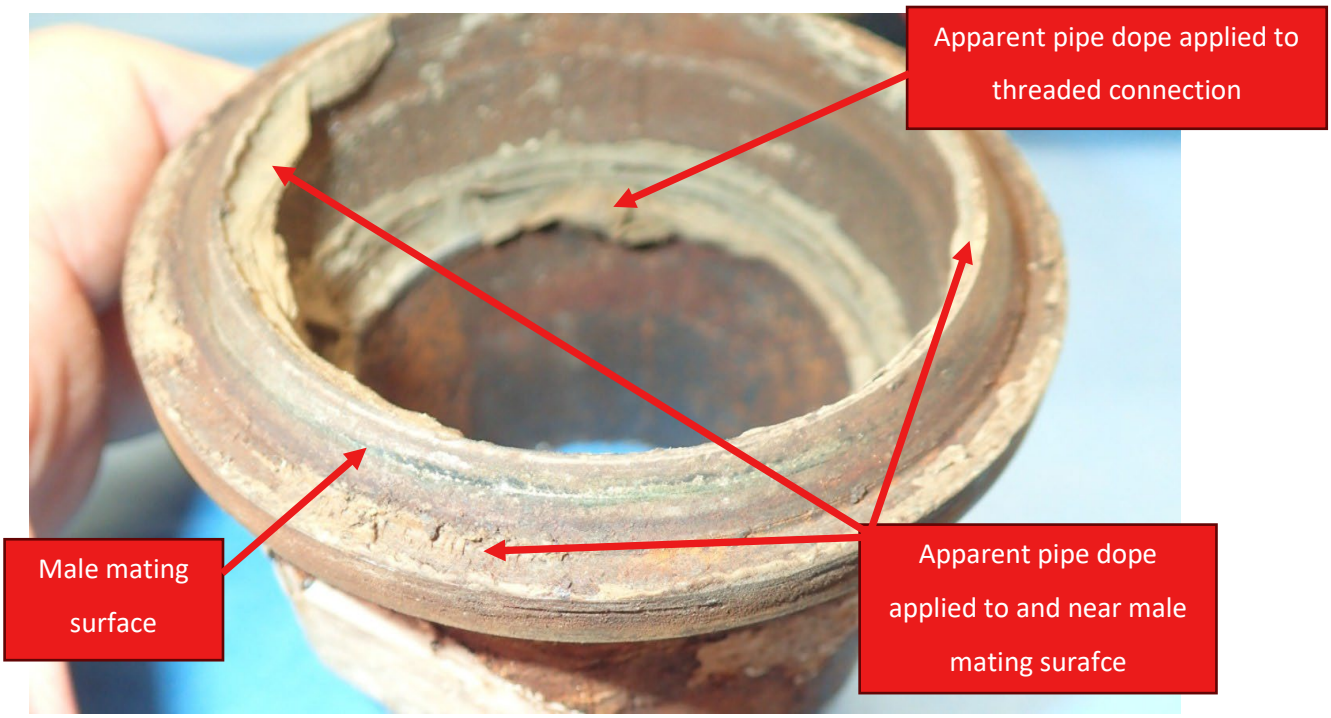

Figure 27: Male end mating surface.

S-E-A created **Figure 28** to show an approximation of a typical union cross section, with the locations of the observed apparent pipe dope from the subject union. Note, Figure 28 is intended to be diagrammatical, and is not to scale.

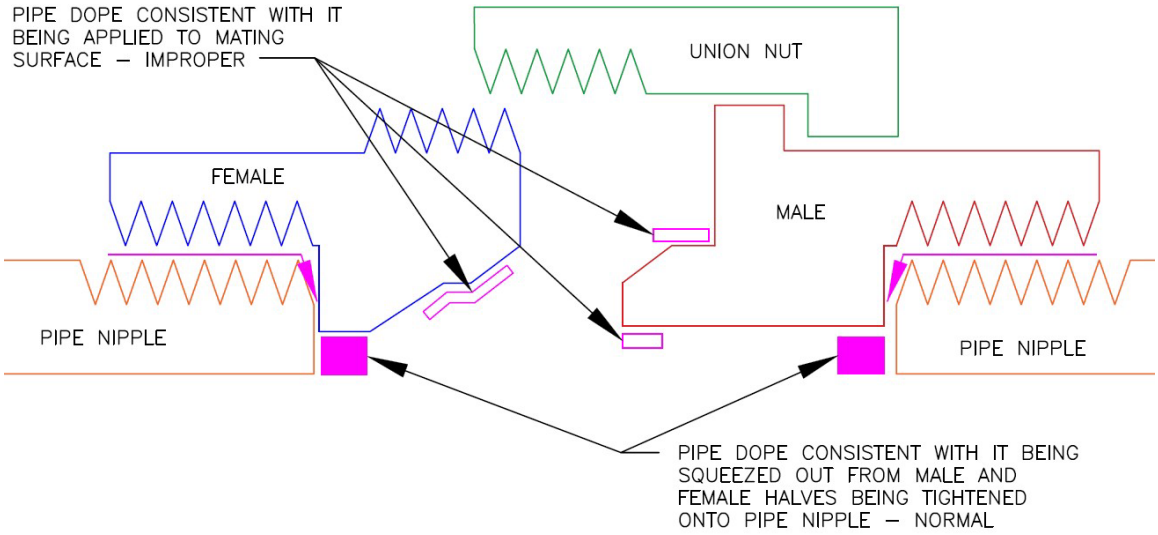

Figure 28: Diagram of typical union cross section with observed apparent pipe dope shown in pink.

Note, the mating surfaces on both the male end and female end appeared dull/unpolished. Scratching/polishing of the mating surfaces would be expected if the two mating surfaces had been wrench tightened to sufficient metal-to-metal contact and were loosened during the incident or at the lab exam.

The union was reassembled until it was hand tight, taking 5¼ full rotations (i.e., ¼ rotation beyond its as-found position). S-E-A performed a leak test with pressurized air, similar to previous tests. A leak test on the union at hand tight (5¼ rotations) revealed an approximate 28 SCFH leak at 12" w.c. Two pipe wrenches were used to wrench tighten the union nut onto the male end, until the flow meter read 0 SCFH, taking an additional approximate ⅛ of a rotation (i.e., hand tight + wrench tight = 5⅜ rotations).

The union was then disassembled again to examine the two mating surfaces on the male and female ends. Inspection revealed that the previously dull mating surfaces were now scratched/polished, and pipe dope had been scraped away across a portion of the mating surfaces, causing them to appear cleaned/brighter, indicating that metal-to-metal contact had been achieved during the laboratory examination wrench tightening and disassembly (**Figure 29)**.

Figure 29: Male mating surface after reassembly to wrench tight and disassembly.

Part H – Narrative and Description of Incident – Supplemental/Final 20250041-42149

On June 23, 2025, at approximately 16:32 EDT, Enbridge Gas Ohio received notification of a fire/explosion event at a structure at 7051 Garden Valley Avenue in Cleveland, Ohio. The structure is a 3-story 44-unit apartment complex with approximately 150 residents. Enbridge Gas personnel arrived on scene at approximately 17:05 EDT. The responding Enbridge Gas employee located an outside meter on the building property and shut it off before calling for further personnel on scene. It was determined that the meter shut off was supplying gas to a neighboring building. An inside meter on the north side of the subject building was in a maintenance room behind a locked door. With FD assistance Enbridge Gas gained access to the meter and was able to shut it off at approximately 20:35 EDT. Enbridge Gas performed leak detection activities around the building to the extent possible as it was still an active fire with numerous first responders on scene. Enbridge Gas performed odorant testing at a gas meter bank located at 7304 Carson Ave., and the odorant was readily detectable at 0.53%. The last meter inspection at 7051 Garden Valley Ave. was completed on June 2, 2025 with no leaks found. At approximately 23:35 EDT, the fire was under control, and all residents were accounted for, so the FD and Enbridge Gas cleared the scene to resume investigations in the morning. It was communicated to Enbridge Gas that 5 members of the public had been transported to the hospital due to injuries sustained in the event (and on July 11th, 2025, it was communicated to Enbridge Gas that one of these victims died in the hospital due to injuries sustained in the event).

After reconvening at the scene the following morning it was determined that there was a second inside meter at the south side of the subject building near the location where the event had occurred that could not be accessed due to the partial collapse of the structure above it. On June 24, 2025, Enbridge Gas crews located the curb box and shut off gas to this meter to make safe for debris removal activities. Enbridge Gas then cut both service lines to the inside meters and performed leak tests at operating pressure. The service line on the north side of the building showed no pressure drop over the course of the test. The service line at the south side of the building initially was tested at approximately 7.1 oz for 10 minutes and showed a pressure drop of approximately 2.8 oz, but no leaks were detected. After installing a temporary coupling and plug just outside the exterior wall, Enbridge Gas retested the south service line at approximately 7.2 oz with no pressure drop, indicating no leak. Enbridge Gas removed and took into evidence the inside portion of the south service line, including the meter valve, which showed signs of damage from the explosion, fire and building collapse. After the building debris was removed, Enbridge Gas was able to locate and recover its meter at this south maintenance room location. The north gas meter also was removed and preserved. Fractured segments of house line gas piping were observed in the south maintenance room but could not be collected due to building instability.

On June 30, 2025, a joint scene examination confirmed that the south gas meter served two mechanical rooms and the north gas meter served two additional mechanical rooms. Each mechanical room (4 total) contained a natural gas water heater and hot water boiler. Natural gas piping did not extend to the apartment units, and no natural gas appliances were present in those units.

On July 25, 2025, a joint scene examination was conducted. Enbridge Gas leak surveyed the perimeter of the subject building and found no leaks. Bar holing revealed a grade 2 leak approximately 170 ft north of the explosion area at the opposite end of the building, which zeroed out when bar holing was performed closer to the building. The south service line was re-tested at

approximately 7.3 oz for 10 minutes with no pressure drop. Borescope inspections of the south service line and south main revealed no anomalies.

On August 25, 2025, a joint scene examination was conducted. Fractured house line piping segments were collected as evidence by other parties. Leak testing on house line gas piping still connected to the 2 water heaters and 2 boilers in the south mechanical rooms revealed no leaks. Borescope inspections of the north and east mains identified no anomalies.

On September 24, 2025, a joint lab examination was conducted. A section of south service line piping that penetrated the building's exterior wall was found wrapped in material similar to black electrical tape. Leak testing with a flow meter (0.6 – 5.0 SCFH scale) of this south service line section detected no observable leak flow rate. When submerged in water, bubbles appeared from beneath the black tape and the bubble locations were marked for future testing. Similar testing also revealed a leak and active bubbling on an elbow and union located downstream of the south gas meter, which were marked for future testing.

On October 27, 2025, a joint lab examination was conducted. Leak testing with a flow meter (0.1 – 1.0 SCFH scale) on the south service line section detected no observable leak flow rate. The black tape was removed, which revealed corrosion and significant pipe wall thinning. After removal of the black tape and corrosion buildup, leak testing with the flow meter again detected no observable leak flow rate. Metallurgical examination revealed two small holes (approximately 0.08" x 0.03" and 0.03" x 0.03"), and the corrosion pattern indicated outside-in corrosion. Leak testing of house line piping from the south utility room collected by other parties revealed a leak on a 2" house line and union section, with a leak flow rate of approximately 74 SCFH at 11.06" w.c. The union nut was observed to be extremely loose and manipulable by hand, and active bubbling indicated leaking between the two mating halves and around the union nut.

On January 28, 2026, a joint lab examination was conducted. CT scanning and subsequent disassembly of the house line union revealed that all observable threads were intact, indicating the looseness was not due to damage from the event. The union was disassembled by hand with 5 full rotations of the union nut. Pipe dope was observed on the mating surfaces of the union halves, and the mating surfaces appeared dull and unpolished. The union was reassembled until it was hand tight, which took 5-1/4 full rotations. The union section then was leak tested, which revealed a leak flow rate of approximately 28 SCFH at 12" w.c. The union was wrench tightened until the leak flow rate was 0 SCFH, which took an additional 1/8 rotation. Subsequent disassembly of the union revealed that the previously dull mating surfaces were scratched and polished, pipe dope was scraped away, and metal-to-metal contact was achieved during the lab examination wrench tightening and disassembly.

Enbridge Gas has completed its investigation and classifies this event as non-jurisdictional with the apparent cause being ignition of leaking gas from customer-owned 2" house line gas piping, which measured approximately 74 SCFH at 11.06" w.c. at the hand-loose union. Inspection of the union revealed that pipe dope had been improperly applied at the mating surfaces of the union halves, most likely during installation. The corrosion leak discovered on the south service line section where it penetrated the subject building's exterior wall was identified as a potential fuel source. However, due to the lack of observable leak flow rate (less than 0.1 SCFH) even after

removal of the black tape wrapping and corrosion buildup, Enbridge Gas has determined that this leak was not causal to the event.

Public Utilities Commission

Gas Pipeline Safety
180 East Broad Street, 7th Floor
Columbus, OH 43215

Natural Gas Pipeline Failure Investigation Report

Operator Information	
Operator: Enbridge Gas Ohio	Operator ID: 04060
Operator Address: 1201 East 55th Street, Cleveland, Ohio 44103	
Company Official Point of Contact: Daniel Evans	
Phone No: 330.571.5796	E-Mail: NOT PUBLIC RECORD

Incident Criteria			
Deaths: 1.	Names and Ages Sheffield, Cordal, 31.		
Injuries requiring hospitalization: 4.	Names and Ages Doe, Jane, 41; Ersking, Brandon, 39; Tate, A'Zaria, 10; Tate, Tyrone, 11.		
Est. Property Damage: $2,510,000.00	Type Structure, contents, and operator response.		
Estimated Gas Lost (MMCF) Unknown.	Comments: N/A		

Failure Location and Response			
Address / Location: 7051 Garden Valley Avenue			
City: Cleveland		County: Cuyahoga	
	Coordinates of Failure Location:	Latitude: 41.47378	Longitude: -81.63945
Date of Failure: 06/23/2025	Time of Failure: 16:14	Time Detected: 16:14	Time Located: 17:07
How Located: First Responders			
NRC Report #: 1434926	Time Reported: 18:02	Reported By: Daniel Evans	

Type of Pipeline:

Gas Distribution	Gas Transmission	Gas Gathering / Other
☒ Private distribution	☐ Interstate	☐ Part 192 Gathering
☐ Municipalities	☐ Intrastate	☐ Ohio R.C. Gas Gathering
☐ Other Distribution (Co-op)		☐ Other (description):
☐ Master Meter		

System Description:

The gas distribution system involved with the incident was a 10" Grade B steel main, with a 3" bare steel service line that had a maximum allowable operating (MAOP) pressure of 1 pounds-per-square-inch-gauge (psig). At the time of the incident, the operating pressure was approximately 7.0 ounces. Natural gas was delivered to 7051 Garden Valley Ave., Cleveland, through a 3-inch diameter bare steel natural gas service line to the south meter, with an unknown installation date.

Public Utilities Commission

Gas Pipeline Safety
180 East Broad Street, 7th Floor
Columbus, OH 43215

Company Reported Apparent Cause	Company Reported Sub-Cause (from PHMSA Form 7100-1 / 7100-2)
☐ Corrosion	
☐ Natural Force Damage	
☐ Excavation Damage	
☐ Other Outside Force Damage	
☐ Material Failure (Pipe, Joint, Weld)	
☐ Equipment Failure	
☐ Incorrect Operation	
☒ Other	Unknown.

Narrative Summary (*include a summary of findings and suggestions to prevent future recurrences if any*):

Company Information:
Enbridge Gas Ohio (EGO) is an intrastate transmission and distribution operator that supplies natural gas to 1.2 million customers in 35 counties in the State of Ohio. The operator reports 19,892 miles of distribution mains with operating pressures of low, intermediate, medium, and high pressures supplying natural gas to 1,175,226 services.

Overview of Incident:
On June 23, 2025, at approximately 16:14 EDT, an explosion and subsequent fire occurred at 7051 Garden Valley Avenue, Cleveland, Cuyahoga County, Ohio 44103. The explosion occurred in a 3-story, 44-unit apartment complex that encompasses addresses 7043, 7047, 7051, and 7055 Garden Valley Avenue. The building, at the time of the explosion, housed approximately 100 residents. The explosion resulted in a total of 4 injuries, and 1 fatality.

The incident structure was constructed in the early 1960's and consisted of brick/block and mortar construction with poured cement floors that were originally constructed with a flat roof. A gable roof with asphalt shingles was added to the structure in the early 2000's that did not contain fire breaks or walls and allowed open access across the entire roof area. Solar panels were added to the roof area in 2024. Enbridge Gas Ohio provided natural gas service to the building via two separate service lines, one on the north side of the structure, and one on the south side. There was a total of four maintenance rooms, each containing a natural gas boiler and natural gas hot water tank. Natural gas service was not provided to any of the 44 apartment units. The complex was purchased by Rainbow Terrace 2021 L.L.C. on June 23, 2022.

The following narrative describes the actions and investigations conducted post explosion:
June 23, 2025
EGO received notification via telephone of a natural gas leak at 7051 Garden Valley Ave, Cleveland, from the office personnel at Rainbow Terrace. Rainbow Terrace employee Janilys Santiago was on the phone with EGO dispatcher Fancy to report a gas leak when the building exploded. From the recording provided by EGO and attached to this report as Appendix P, you can hear in the background screaming and people yelling that the building had just exploded and there was an active fire. At the same time, several other individuals contacted 911 to report the explosion and fire to Cleveland Fire Dispatch at 16:14 EDT, and those recordings included in this report as Appendix S.

Cleveland Fire Department (CFD) was dispatched at 16:14 EDT and arrived on scene at 16:18 EDT. First arriving units reported that an explosion occurred with active fire on the second and third floors, and there were people trapped requiring rescue. First arriving units performed a rescue of one individual, and no other rescues were performed by CFD. Due to the building damage and extent of the fire, CFD units were directed to conduct a defensive attack, unless a rescue situation arose. Due to the magnitude of the fire, several alarms were requested for this incident. EGO and Cleveland Public Power (CPP) were requested to the scene to cut service to the incident structure. Please see Attachment F for additional information on the actions taken by CFD.

The first EGO personnel arrived on scene at approximately 17:05 EDT. The EGO employee located an outside meter on the building property and shut it off assuming the meter supplied natural gas to the incident structure. The meter was located in a small red brick structure to the northeast side of the incident structure. Roots meter # 181756 was secured at the meter set at 18:28 EDT by EGO employee Kaunda Mwenso. It was later determined that the natural gas meter the employee secured (shut off) supplied natural gas service to a neighboring building and not the incident structure. EGO employees eventually located a natural gas service line on the north side of the incident building. The meter that was actually supplying natural gas to the incident structure was located in a locked maintenance room that EGO did not have access to and required CFD to force entry to gain access to the room. Natural gas service was shut in by turning a valve upstream of the inside meter set at 20:35 EDT, 4 hours and 20 minutes after the explosion occurred. The meter secured was an Elster AL-1000, Meter # 1066445.

EGO employee Kaunda Mwenso performed leak detection activities around the incident building to the best of their ability due to the active fire. Bar holing was performed in the immediate area and no natural gas leaks were detected. EGO employee Matt Hansel performed an odorant level test at a gas meter bank located at 7304 Carson Ave., Cleveland, at 20:18 EDT. This location is

Narrative Summary (*include a summary of findings and suggestions to prevent future recurrences if any*):

supplied natural gas from the same main as the incident structure. The odor level testing was performed using a calibrated odorometer. The threshold detectable level (TDL) was recorded at 0.37% gas in air, and the readily detectable level (RDL) was recorded at 0.53% gas in air. The odorant level obtained was within normal limits and no concerns were noted. All of the above-mentioned actions conducted by EGO personnel were performed prior to the arrival of PUCO staff members and were not directly observed by any of our personnel. The operating pressure of the low-pressure system at the time of the incident was 7 ounces, or 12.1 inches water column, was within normal limits, and the pressure did not exceed the Maximum Allowable Operating Pressure (MAOP). Due to the active fire, no other actions were taken by EGO personnel. PUCO staff Price and Storch left the scene at approximately 21:20 EDT and will resume the investigation on June 24, 2025.

June 24, 2025:

PUCO staff Jeff Storch arrived on site at 08:15 EDT, and Dave Price at 08:30 EDT, and began gathering information and processing the scene. Upon their arrival, PUCO staff were advised by EGO personnel that there was an active gas leak on the south side of the incident structure in the area that suffered the explosion. The natural gas fueled fire was found in the debris pile in the basement of the incident structure, in the utility room.

At 09:30 EDT, EGO personnel attempted to locate the service line using line location equipment with no success. EGO personnel removed the debris and concrete at the south riser at 9:36 EDT. Once the concrete around the riser was exposed, severe corrosion with flaking was noted at the riser. A cathodic protection read was taken at the 3" bare steel riser, and a read of -0.412 volts was obtained. At 10:45 EDT, EGO personnel used a metal detector to sweep open space on south side of building just north of a sidewalk and fence to locate a valve box. EGO eventually located a valve box lid and attempted to gain access to the valve but was unable to access the valve due to rocks and debris in the valve box. It appears that the valve box had been buried for some time, and the valve has not had any recent inspections. EGO employees initially thought this could be a water valve, even though the valve cap stated "GAS." EGO personnel excavated around the valve to get it exposed. EGO personnel located the curb valve at 11:53 EDT and shut off gas to the south meter. Natural gas to the incident structure was now secured, and no additional natural gas fueled fires existed.

EGO personnel had multiple crews on-site to prepare both service lines for pressure testing. Both the north and south service lines were excavated simultaneously to cut and pressure test both service lines. The service line on the north side of the building was a 2" MDPE service line that was connected to a steel gate valve at the main. The approximate length of the service line from main to riser was approximately 55 feet in length. An anodeless riser came above grade and entered the north utility room through a brick and block wall. There was approximately 3 feet of exposed service line in the maintenance room attached to an Elster AL-1000 meter. Visual inspection indicated that the meter and associated piping was in good condition and did not appear to have any heat damage due to the fire. The valve upstream of the meter was found in the closed position, most likely closed on June 23, 2025, by EGO personnel. The service line was cut downstream of the curb valve, and a test head was installed. The pressure test started at 15:29 EDT, and ended at 15:39 EDT, at a pressure of 7.5 ounces using a calibrated gauge. The pressure test showed no indications of a leak and held consistent pressure over the duration of the test.

The service line at the south side of the building was excavated and prepared for pressure testing. The service line was cut downstream of the service line valve, and a test head was installed. The 3" steel service line was approximately 90 feet in length and came above grade with a 3" steel riser prior to entering the south utility room through the brick and cinder block wall. Corrosion was present on the riser and the horizontal piping where it penetrated the brick/block wall. There was service line piping located inside the building, and the only portion that was visible was the upstream valve and a small portion of piping downstream of that valve. The valve appeared to be in an open position and the tab to close the valve appeared to be broken. The valve was apparently broken while attempting to close the valve prior to pressure testing. The piping and valve did not appear to be heat damaged from the explosion and subsequent fire. Service line downstream of the valve was cut and removed, and a 2" plug was installed to pressure test the service line. The initial pressure test began at 01:57 EDT at a pressure of 7.1 ounces for 10 minutes. A constant pressure drop was observed during the duration of the test. After 10 minutes, the pressure dropped to 4.3 ounces, indicating a pressure loss of 2.8 ounces. The test head and all above ground piping was soaped, and no indications of a leak were noted. It was decided to remove the valve and horizontal piping and install a compression fitting on the

Narrative Summary (*include a summary of findings and suggestions to prevent future recurrences if any*):

vertical portion of the riser. EGO retested the south service line at approximately 7.2 ounces for 10 minutes with no pressure drop noted.

PUCO manager Chris Domonkos arrived on site at approximately 16:03 EDT to observe the site and get an update on the investigation process. The City of Cleveland, using a large excavator, removed debris from the south utility room. A segment of the service line and meter were observed under a partially collapsed wall, and an excavator was used to remove debris to gain access to the meter and interior service line. By using the excavator and hand digging, we were able to locate and recover the Roots meter, Itron Encoder Receiver Transmitter (ERT), and portions of the service line for the south meter. The piping appeared to be damaged on both the inlet and outlet side of the meter. There did not appear to be any heat damage to the meter or piping, and the ERT was separated from the meter. Additional house line piping was also recovered and left on site. A portion of house line gas piping was also observed attached to the meter and was removed in one section without separating the piping. The investigation continued using an excavator to remove debris to locate any additional house line piping in the debris pile. Several segments of what appeared to be houseline piping were removed once exposed by the excavator and were relocated outside of the building. Since there was no representation from the building owner, the house line piping that was recovered was not removed from the site, nor was it retained as evidence by S-E-A or EGO. All jurisdictional piping, meters, and other pertinent evidence were inventoried and retained by S-E-A for further examination. Please see Appendix T for additional information. House line piping that was discovered during the excavation process was piled near the building and was not removed. The house line piping was not covered or protected from the elements. PUCO Staff left the scene at approximately 18:00 EDT.

June 30, 2025.

Joint scene examination was conducted at 7051 Garden Valley Avenue, Cleveland, and access was gained to the inside of the incident building. After viewing the building and tracing the existing house lines, it was confirmed that the south gas meter served two separate mechanical rooms, and the north gas meter served an additional two mechanical rooms. The incident building contained a total of four mechanical rooms, each containing a natural gas fired, storage-type, domestic water heater, and a natural gas fired boiler. Inspections were conducted of several apartments. Natural gas piping did not extend to units, and no natural gas appliances were present in any of the units observed. No evidence was removed, and only visual examinations and photographic documentation were performed during this site examination. House line piping that was found during the excavation process on June 24, 2025, was moved from the original location and placed in the basement area of the utility room by someone on site. It is unknown who relocated the piping.

July 25, 2025.

Joint scene examination was conducted at 7051 Garden Valley Avenue, Cleveland, with several affected parties present. Please see Appendix LL for the protocols for the inspection. PUCO Staff requested that EGO employees perform another leak survey of the incident area to include all active mainlines, service lines, and a foundation survey around the incident structure to ensure stray gas was not a potential cause of the explosion. Staff also had concerns with the leak testing that was performed on the day of the incident, and following day due to the amount of water used to fight the fire. The parking area immediately east of the incident building had approximately 3 feet of water located in the parking area. Staff was concerned that the pressure of the water used during firefighting activities may have masked a potential leak. The natural gas mains and service lines in the incident area were and continue to operate at ounces of pressure, and water saturation of the immediate area may prevent leaking gas to migrate to the surface. Enbridge personnel performed leak testing along the perimeter of the incident building and found no leaks. Bar holing revealed a grade 2 leak approximately 170 ft north of the explosion area at the opposite end of the building, which zeroed out when bar holing was performed closer to the building. The south service line was re-tested at approximately 7.3 oz for 10 minutes with no pressure drop. Borescope inspections of the south service line and south main revealed no anomalies. Staff observed taps located on the mainline west of the incident structure in the west driveway apron, apparently installed for bagging and stoppling the mainline during mainline extensions performed in the 1960's - 1970's era.

August 6, 2025.

Narrative Summary (*include a summary of findings and suggestions to prevent future recurrences if any*):

Please see Appendix KK for the site examination protocols. Borescope inspections were completed on the mainline east of the building, and the main at the north end of the incident structure. No anomalies or additional taps were found, and no issues were observed during the inspection.

August 25, 2025.

Joint scene examination was conducted at 7051 Garden Valley Ave, Cleveland, with several affected parties present. Please see Appendices GG and JJ for the site examination protocols. Fractured house line piping segments were collected as evidence by other parties using an excavator to dig through debris piles created by the demolition crew prior to our arrival. None of the piping was protected and was exposed to the elements from the time of the explosion. Leak testing was performed on the existing house line gas piping that was connected to the 2 water heaters and 2 boilers in the south mechanical rooms. The testing revealed no leaks were present in the house line piping. Borescope inspections were performed on the natural gas mains on the north and east side of the structure. No anomalies or additional taps were observed in these segments of mains.

September 24, 2025.

Joint lab examination was conducted at S-E-A, LTD, 3500 State Road, Cuyahoga Falls. Please see Appendix EE for the laboratory examination protocols. Several segments of the service line were visually inspected prior to leak testing. Due to the removal process of the service line by EGO, several segments of service line could not be pressure tested due to the removal process. Several items were cut on angles or were too short of a segment to effectively test. A visual examination was performed, but a visual inspection cannot confirm that any of these segments contained a potential leak source causing the release of natural gas and explosion. A section of south service line piping that penetrated the building's exterior wall was found wrapped in material similar to black electrical tape. Leak testing with a flow meter (0.6 – 5.0 SCFH scale) of this south service line section detected no observable leak flow rate. When submerged in water, bubbles appeared from beneath the black tape and the bubble locations were marked for future testing. Similar testing also revealed a leak and active bubbling on an elbow and union located downstream of the south gas meter, which were marked for future testing.

October 27, 2025

Joint lab examination was conducted at S-E-A, LTD., 7001 Buffalo Parkway, Columbus, Ohio. Please see Appendix Z for the laboratory examination protocols. Leak testing was performed on Item # 1 (the horizontal piping that was removed) with a flow meter (0.1 – 1.0 SCFH scale) on the south service line section detected no observable leak flow rate. The black tape was removed, which revealed corrosion and significant pipe wall thinning. After removal of the black tape and corrosion buildup, leak testing with the flow meter again detected no observable leak flow rate. Metallurgical examination revealed two small holes (approximately 0.08" x 0.03" and 0.03" x 0.03"), and the corrosion pattern indicated atmospheric corrosion caused the holes and reduction in wall thickness of the jurisdictional piping. Leak testing of house line piping from the south utility room collected by other parties revealed a leak on a 2" house line and union section, with a leak flow rate of approximately 74 SCFH at 11.06" w.c. The union nut was observed to be loose and manipulable by hand, and leak detection solution indicated a leak between the two mating halves and around the union nut. Due to the use of an excavator to remove the house lines, it cannot be determined if the leak existed prior to the explosion, was caused post explosion, or was a result of the removal process.

January 28, 2026.

Joint lab examination was conducted at S-E-A, LTD., 7001 Buffalo Parkway, Columbus, Ohio. Please see Appendix CC for the laboratory examination protocols. CT scanning and subsequent disassembly of the house line union revealed that all observable threads were intact and did not appear to be damaged. The union was disassembled by hand with 5 full rotations of the union nut. Pipe dope was observed on the mating surfaces of the union halves. The union was reassembled until it was hand tight, which took 5-1/4 full rotations. The union section then was leak tested, which revealed a leak flow rate of approximately 28 SCFH at 12" w.c. The union was wrench tightened until the leak flow rate was 0 SCFH, which took an additional 1/8 rotation.

Conclusion.

PUCO Staff conducted thorough records review, review of the evidence, and on-site and laboratory testing information in response to the explosion and subsequent fire that occurred at 7051 Garden Valley Ave., Cleveland. Several areas in EGO's response to the incident were found to be deficient but were not contributing factors to the explosion. The first concern is the

Narrative Summary (*include a summary of findings and suggestions to prevent future recurrences if any*):
GIS mapping that EGO used during their emergency response did not indicate that the south service line existed, resulting in an uncontrolled release of natural gas for approximately 20 hours post explosion from the south service line. PUCO Staff is recommending that EGO conduct a thorough review of their GIS mapping system to ensure that their facilities are adequately recorded, including service lines, for the entire complex. Several areas were incorrectly mapped, resulting in an EGO first responder shutting natural gas service off to a building that was not involved with the explosion and fire. Staff also has concerns with the leak detection methods employed by Enbridge during this incident. Escaping gas was not detected by leak detection personnel post incident, raising concerns about the effectiveness of training provided to leak detection personnel. Third, EGO needs to educate employees on evidence removal, and how to properly extract items for further testing and evidence preservation. The removal process of evidence during this event resulted in jurisdictional piping that could not be leak tested or pressure tested to accurately determine the leak source. Segments of service line were cut on angles and short lengths that did not allow the use of pressure testing equipment, resulting in a visual inspection to be performed only. Meter data was reviewed post incident, and the data did not appear to indicate a large usage prior to the event and appeared to be normal in comparison to the previous usage. Hourly meter data was not available for this meter. EGO personnel performed an inspection and leak survey of the inside piping and meter manifold on June 2, 2025, and no leaks were found, and no atmospheric corrosion was documented. Natural gas consumption appeared to be consistent with previous reads during this inspection. The inspection was performed 21 days prior to the explosion, and no abnormalities were documented at the time of inspection. Based on all the evidence and information collected during the investigation, Staff is unable to determine an exact cause of the release of natural gas that led to the explosion. There were minor leaks noted on jurisdictional piping upstream of the gas meter, but all lab testing showed the leaks were too small to register a measurable flow rate. There was a leak identified downstream of the meter that did have a measurable flow rate; however, that pipe had been subject to the explosion, several weeks of exposure to the elements in the debris pile from the explosion, and it was removed from the structure with an excavator. The natural gas meter on the service line involved with the event did not log usage in a way that would indicate there was an increase in usage downstream of the meter which would confirm the leak on the houseline union occurred pre-explosion. Staff will address the post-incident response and mapping related concerns with EGO, but Staff has not identified a compliance failure that may have caused or contributed to this incident at this time.

Drug/Alcohol Testing	☒ *N/A*
Operator Drug Program Contact & Phone #:	
Operator Alcohol Program Contact & Phone #:	
Were all employees that could have contributed to the incident, post-accident tested within the 2 hour time frame for alcohol or the 32 hour time frame for all other drugs? ☐ Yes ☐ No	

Job Function	Test Date & Time	Location	Results		Type of Drug
			Pos	Neg	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	

Operating Pressure	☐ *N/A*
Max. Allowable Operating Pressure: 1 psig.	Determination of MAOP: 49 CFR 192.619(a)(3).
Actual Operating Pressure: 7 ounces.	
Method of Over Pressure Protection: Worker / Monitor regulator configuration.	
Relief Valve Set Point: 8.5 ounces.	Capacity Adequate? ☒ Yes ☐ No

Pressure @ Time of Failure @ Failure Site			☐ *N/A*	
Pressure @ Failure Site: 7 ounces.		Elevation @ Failure Site: 754.5 ft. msl.		
Pressure Readings @ Various Locations:			Direction from Failure Site	
Location/M.P./Station #	Pressure	Elevation (ft msl)	Upstream	Downstream
LS-149 - E.79th & Garden Valley Ave, Cleveland.	7.00 ounces	842.4 ft. msl.	X	
LS-2031 - Bessimer & E. 75th St., Cleveland.	7.07 ounces	729 ft. msl.	X	

Pipe Data	☐ *N/A*
Material: Steel	Wall Thickness/SDR: Unknown.
Diameter (O.D.): 3"	Installation Date: Unknown.
SMYS: Unknown.	Manufacturer: Unknown.
Longitudinal Seam: Unknown.	Type of Coating: Bare Steel.
Pipe Specifications (API 5L, ASTM A53, etc.): API 5L	

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Component Failure Description	☒ *N/A*
Component Failed:	
Manufacturer:	Model:
Pressure Rating:	Size:
Comments:	

Excavation Damage	☒ *N/A*
Responsible Party:	Telephone No.:
Address:	
Work Being Performed:	
Equipment Involved:	Called One Call System? ___ Yes ___ No
One Call Name:	One Call Report #:
Notice Date:	Time:
Response Date:	Time:
Details of Response:	
Was Location Marked According to Procedures? ☐ Yes ☐ No	
Pipeline Marking Type:	Location:
State Law Damage Prevention Program Followed? ☐ Yes ☐ No ☐ No State Law	
Notice Required: ☐ Yes ☐ No	Response Required: ☐ Yes ☐ No
Was Operator Member of State One Call? ☐ Yes ☐ No	Was Operator on Site? ☐ Yes ☐ No
Did a deficiency in the Public Awareness Program contribute to the accident? ☐ Yes ☐ No	

Failure Isolation	☐ *N/A*
Squeeze Off/Stopple Location and Method: N/A.	
Valve Closed - Upstream: Service line curb valves (North & South) Time: North service line: 06/23/24 @ 20:35 EDT. South service line: 06/24/25 @ 11:53 EDT.	I.D: N/A. Milepost: N/A.
Valve Closed - Downstream: N/A. Time: N/A.	I.D.: N/A. Milepost: N/A.
Pipeline Shutdown Method: ☒ Manual ☐ Automatic ☐ SCADA ☐ Controller ☐ ESD	
Failed Section Bypassed or Isolated: N/A.	
Performed By: Enbridge Gas Ohio personnel.	Valve Spacing: N/A.

Class Location/High Consequence Area	
Class Location: 1 ☐ 2 ☐ 3 ☒ 4 ☐ Determination: Sliding mile.	HCA Area? ☐ Yes ☐ No ☒ N/A Determination: N/A.
Odorization Required? ☒ Yes ☐ No ☐ N/A	

Odorization	☐ *N/A*
Gas Odorized: ☒ Yes ☐ No	Concentration of Odorant – Sniff Test (Post Incident at Failure Site): N/A. See comments below.
Type of Odorizer(Wick, By-pass, Pulse): Injection.	Heath/Bacharach Unit Used: DTEX odorometer, Model # DX-1000G, Serial # D01748.
	Additional Address: 7304 Carson Ave., Cleveland. Reading: TDL: .37% Gas in air; RDL: .53% Gas in air.
Odorizer Manufacturer: YZ Systems NJEX.	Additional Address: N/A. Reading: N/A.
	Additional Address: N/A. Reading: N/A.
Odorant Manufacturer: Chevron/Phillips Chemical Company.	OQ Individual Performing Sniff Test: Matt Hansel.
Type of Odorant: Tetrahydrothiophene & T-Butyl Mercaptan.	Sniff Test(s) Monitoring Interval (Monthly): Monthly.

Odorization History (Low Odorant Levels, Monitoring Locations, Distances from Failure Site):

Odorization level reads were unable to be obtained at the incident site due to an active fire at that location involving addresses 7043, 7047, 7051, and 7055 Garden Valley Ave, Cleveland. The odor level read was obtained at 7304 Carson Ave., Cleveland, on June 23, 2025, @ 20:18. The site where the read was obtained was in the same operating system as the incident structure. No issues were observed, and the read taken was within normal limits. The previous 12-month odor level history appears to be normal and no reads above 1% were noted for the immediate area.
Odorator Information:
Manufacturer: YZ Systems DTEX. Model Number: DX-1000G. Serial Number: D01746.
Calibration Date: 08/29/2023. Calibration Due: 09/27/2025.

Weather Conditions	☐ N/A
Temperature: 87 °F	Wind (Direction & Speed): NNW @ 5mph
Climate (Snow, Rain): Clear	Humidity: 65%
Was Incident preceded by a rapid weather change? ☐ Yes ☒ No	
Weather Conditions Prior to Incident (Cloud Cover, Ceiling Heights, Snow, Rain, Fog): Clear with no significant changes prior to the incident.	

Gas Migration Survey	☐ N/A
Bar Hole Test of Area: ☒ Yes ☐ No	Equipment Used: Sensit Gold, Heath RMLD.
Method of Survey (Foundations, Curbs, Manholes, Driveways, Mains, Services) Bar hole survey of immediate area. RMLD was also used for the entire area. One Grade 2 leak was found post incident, but was not a contributing factor in this incident.	

Pressure Test History ☐ N/A
(Expand List as Necessary)

	Test Date	Test Medium	Pressure (psig)	Duration (hrs)	% SMYS
Installation					
Next					
Next					
Most Recent					

Describe any problems experienced during the pressure tests:
Service line pressure test data does not exist for the south service line. Only mainline pressure test data exists.

Maps & Records	☐ N/A
Are Maps and Records Current? ☐ Yes ☒ No	
Comments: The GIS mapping for the area provided by Enbridge did not indicate a service line entering the structure on the south side of the building. There were several areas noted in this complex that had inaccurate mapping of the service lines.	

Leak Survey History	☐ N/A
Leak Survey History (Trend Analysis, Leak Plots): Mainline and exterior service line leak surveys were performed on 04/24/2024. The interior service line was leak surveyed on 06/02/2025. No open leaks existed near the incident structure.	

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Additional Actions Taken by the Operator	☐ *N/A*

Make notes regarding the emergency and Failure Investigation Procedures (Pressure reduction, Reinforced Squeeze Off, Clean Up, Use of Evacuators, Line Purging, closing Additional Valves, Double Block and Bleed, Continue Operating downstream Pumps):

Please see narrative summary above for additional information.

Checklist for Additional Information:

☒ Witness names	☒ Name of Injuries	☒ Leak Survey
☒ Fire Dept. Responding	☒ Time operator notified	☐ Drug & Alcohol Testing
☒ Fire Dept Investigator	☒ Time operator arrived	☒ Corrosion Reads
☒ Cause of Leak	☒ What failed	☒ Possible Flow Rate Study
☒ Odorization test at site	☒ Odorization History	☒ Pressure Charts
☐ Source of Ignition	☒ CGI Bar Hole Survey	☒ Map of Area
☒ Sniff Testing To Verify Odorant	☐ FI Study	☒ Map of Facilities
☒ How operator made safe	☒ Time operator made site safe	☒ Prior Service History
☒ Site Pressure test records	☐ Possible smoke test	☒ Past Pressure Test Records
☐ Control Room Log	☒ Meter Readings	☒ Prior Leak surveys
☒ Was One Call Notified	☒ Photo Documentation (yours, operator, news, neighbors, etc.)	☒ Recent odor complaints
☒ Construction activity in the incident area		

Notes:

Contact Information Log		
Contact information for people relevant to the investigation		
Name	Title / Company	Phone Number / Email
Dan Evans	Manager, Compliance, Enbridge Gas Ohio	[redacted] daniel.evans@enbridge.com
Sarah Mancuso	Senior Legal Counsel, Enbridge Gas Ohio	[redacted] arah.mancuso@enbridge.com
Robert Zimmerer	Captain, Cleveland Fire Department	[redacted] zimmerer@clevelandohio.gov
Eric Baluch	Investigator, S-E-A, Limited	[redacted] / ebaluch@sealimited.com
Derek Goins	Supervisor, Compliance	[redacted] / derek.goins@enbridge.com
Corey Penny	Senior Analyst Compliance, Enbridge Gas Ohio	[redacted] corey.penny@enbridge.com

TELEPHONE NUMBER

Event Log	
Sequence of events prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies.)	
Time / Date	Event
16:10 / 06-23-25	Residents at 7051-7055 Garden Valley Ave. advise Rainbow Terrace employees of a strong gas odor in the area.
16:11 / 06-23-25	Rainbow Terrace security and maintenance personnel are sent to investigate the gas odor.
16:13 / 06-23-25	EGO dispatch receives a call from Rainbow Terrace employee Janilys Santiago reporting a gas leak
16:14 / 06-23-25	While Janilys Santiago is on the phone with EGO, the building explodes.
16:14 / 06-23-25	Brandon Ersking, Security at Rainbow Terrace was investigating the odor at the building when the explosion occurred.
16:14 / 06-23-25	Cleveland Fire Dispatch receives a call for a buliding explosion and fire at 7055 Garden Valley Ave., Cleveland.
16:14 / 06-23-25	CFD fire units are dispatched to 7055 Garden Valley Ave. for a reported explosion.
16:18 / 06-23-25	CFD Engine 41 arrives on scene and reports a possible explosion and fire with entrapment. Additional CFD and Cleveland EMS units are requested due to the magnitude of the incident.
17:05 / 06-23-25	EGO first responder Kaunda Mwenso arrives on site.
18:28 / 06-23-25	Natural gas service was shut in by EGO. Meter # 181756 was shut in. It was later determined that this meter did not supply natural gas service to the incident structure.
18:40 / 06-23-25	EGO first responders begin leak detection activities near incident structure.
19:48 / 06-23-25	PUCO Investigator Jeff Storch arrives on site.
20:05 / 06-23-25	PUCO Investigator Dave Price arrives on site.
20:18 / 06-23-25	Odorant level testing was perfomed at 7304 Carson Ave., Cleveland. Odor levels were within normal limits.
20:35 / 06-23-25	Natural gas service to the incident structure was shut in at the north service line at meter # 1066445. Meter was located in a locked utility room and EGO did not have access to the meter. CFD forced entry to the room.
20:45 / 06-23-25	Fire appears to be under control. CFD units remain on scene mopping up hot spots.
21:20 / 06-24-25	PUCO Investigators Price and Storch leave the scene. Investigation of the scene will resume on 06/24/2025.
08:15 / 06-24-25	PUCO Investigator Storch arrives on scene to resume investigation. He was adivsed by EGO upon their arrival there was an active natural gas fueled fire in the south area of the structure, in the debris pile of the explosion.
08:30 / 06-24-25	PUCO Investigator Price arrives on scene.
09:30 / 06-24-25	EGO attempts to locate the service line using locating equipment with no success.
09:36 / 06-24-25	EGO personnel use an excavator to remove debris and concrete around 3" steel natural gas riser.
10:45 / 06-24-25	EGO personnel use metal detector in an attempt to locate a valve box for the service line valve.
11:00 / 06-24-25	Valve box is located, but valve is inaccessable due to rocks and debris in valve box. Excavation of the valve begins.
11:53 / 06-24-25	The 3" valve is located for the south service line, and gas service is discontinuted to the structure.
11:58 / 06-24-25	The natural gas fueled fire is out, and no further fire exists in the debris pile.
12:00 / 06-24-25	EGO personnel continue to excavate the south service line to prepare for pressure testing.
13:57 / 06-24-25	EGO begins the pressure test for the south service line at 7.1 ounces for 10 minutes.
14:07 / 06-24-25	Pressure tests ends for the south service line. Ending pressure was 4.3 ounces, indicating a loss of 2.8 ounces.

Event Log	
Sequence of events prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies.)	
14:20 / 06-24-25	EGO removes piping at the meter riser and installs a coupler with an end cap to attempt a second test of the south service line.
14:43 / 06-24-25	EGO conducts the second pressure test of the south service line. Pressure test started at 7.2 ounces.
14:53 / 06-24-25	Testing of the south service line ends at 7.2 ounces, indicating no pressure loss.
15:17 / 06-24-25	EGO conducts the pressure test of the north service line. Pressure test started at 7.0 ounces. Pressure test is from the disconnection point to the lock stop on the meter manifold.
15:27 / 06-24-25	Testing of the north service line ends at 7.0 ounces, indicating no pressure loss.
16:03 / 06-24-25	PUCO Manager Chris Domonkos arrives on site.
16:30 / 06-24-25	City of Cleveland uses excavating contractor to remove debris in an attempt to locate the south meter.
16:45 / 06-24-25	South meter is located under a collapsed wall. The excavator removes the wall to recover the Roots meter and ERT and attached house line and service line.
17:20 / 06-24-25	Evidence is removed, tagged, inventoried, and wrapped. All jurisdictional evidence is received by S-E-A, LTD.
18:00 / 06-24-25	PUCO personnel leave the site. Investigation is complete for the day. Additional site and laboratory exams will be conducted at a later date.
09:00 / 06-30-25	Joint site examination conducted at 7051 Garden Valley Avenue, Cleveland. Please see narrative summary for additional information.
09:00 / 07-25-25	Joint site examination conducted at 7051 Garden Valley Avenue, Cleveland. Please see narrative summary for additional information.
08:00 / 08-25-25	Joint site examination conducted at 7051 Garden Valley Avenue, Cleveland. Please see narrative summary for additional information.
08:00 / 09-24-25	Joint lab examination was conducted at S-E-A, LTD, 3500 State Road, Cuyahoga Falls. Please see narrative summary for additional information.
08:00 / 10-27-25	Joint lab examination was conducted at S-E-A, LTD., 7001 Buffalo Parkway, Columbus, Ohio. Please see narrative summary for additional information.
08:00 / 01-28-26	Joint lab examination was conducted at S-E-A, LTD., 7001 Buffalo Parkway, Columbus, Ohio. Please see narrative summary for additional information.

Event Log	
Sequence of events prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies.)	

Photo/Video Documentation Log			
#	Description	#	Description
1	Photos taken by Jeff Storch, PUCO.	16	
2	Photos taken by Dave Price, PUCO.	17	
3	Photos taken by Chris Domonkos, PUCO.	18	
4	Photos obtained from social media posts, various sources.	19	
5	Photos taken by Eric Baluch, S-E-A, LTD.	20	
6	Videos taken by Eric Baluch, S-E-A, LTD.	21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	
Camera Type: Olympus TG-5, iPhone 16, Samsung S24.			

Failure Investigation Documentation Log			
Operator: Enbridge Gas Ohio	Unit #: Northeast Shop	CPF #: N/A	Date: 06/23/25

Appendix Number	Documentation Description	Date Received	FOIA Yes	FOIA No
A	National Response Center - Report # 1434926.	06/23/25		
B	National Response Center - Report # 1435113.	06/27/25		
C	PHMSA 7100.1 Final Incident Report for 7051 Garden Valley Dr., Cleveland.	04/10/26		
D	PHMSA 7100.1 Narrative Summary for 7051 Garden Valley Dr., Cleveland.	04/10/26		
E	Enbridge Gas Ohio Fire Report, dated 06/23/2025.	07/26/25		
F	Cleveland Fire Department Incident Report #2025-5037861 -000.	06/25/25		
G	Cleveland Fire Department Incident Report # 2025-5038059-000.	06/25/25		
H	Cleveland Fire Department Incident Report #2025-5038300-000.	06/25/25		
I	Cleveland Fire Department Incident Report #2025-5038718-000.	06/25/25		
J	Google Earth Image of 7051 Garden Valley Ave, Cleveland.	07/26/25		
K	Enbridge Gas Ohio GIS Map for Garden Valley Ave, Cleveland.	07/26/25		
L	Enbridge Gas Ohio Dispatch Log, dated 06/23/25 - 06/24/25.	07/26/25		
M	Enbridge Gas Ohio odorant level reads from 06/23/25.	07/26/25		
N	Enbridge Gas Ohio odorometer calibration information for serial # D01746.	07/26/25		
O	Operator Qualifications for Matt Hanzel, Enbridge Gas Ohio	07/26/25		
P	Enbridge Gas Ohio Dispatch incoming call from Rainbow Terrace Apartments	07/26/25		
Q	Daily weather report for Cleveland, Ohio.	07/02/25		
R	Cuyahoga County Auditor Property Information.	05/01/26		
S	Cleveland Fire Department Dispatch 911 audio recordings.	07/02/25		
T	S-E-A, LTD. Chain of Custody Form	07/26/25		
U	East Ohio Gas - Map of facilities, dated 11/18/62.	07/26/25		
V	Rimkus Structural Assessment for 7043, 7047, 7051 and 7055 Garden Valley Ave.	08/25/25		
W	Gordon, Rees, Scully, Mansukhani, LLP Release of Property Letter.	08/27/25		
X	Floor plans for 7043-7047 Garden Valley Ave., Cleveland.	08/26/25		
Y	Floor plans for 7051-7055 Garden Valley Ave., Cleveland.	08/26/25		
Z	S-E-A joint lab examinaton protocols, 10/27/25.	10/14/25		
AA	Rimkus joint lab examinaton protocols, 10/27/25.	10/14/25		
BB	Sign in sheet from lab examination 10/27/25.	10/27/25		
CC	S-E-A joint lab examinaton protocols 01/28/26.	01/07/26		
DD	Sign in sheet from lab examination 01/28/26.	01/28/26		
EE	S-E-A lab examination protocol 09/24/25.	09/22/25		
FF	Sign in sheet from lab examination 09/24/25.	09/24/25		
GG	S-E-A site examinaton protocols 08/25/25.	08/20/25		

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Failure Investigation Documentation Log			
Operator: Enbridge Gas Ohio	Unit #: Northeast Shop	CPF #: N/A	Date: 06/23/25

Appendix Number	Documentation Description	Date Received	FOIA Yes	FOIA No
HH	Sign in sheet from lab examination 08/25/25.	08/26/25		
II	GRSM Joint examination letter 08/25/25.	08/14/25		
JJ	Rimkus protocol for site examination 08/25/25.	08/14/25		
KK	S-E-A site examination protocols 08/06/25.	07/29/25		
LL	S-E-A site examimation protocol 07/25/25.	07/21/25		
MM	Earl, Warburton & Adams Inc. Letter	07/24/25		
NN	McDonald Hopkins letter	07/21/25		
OO	Enbridge Gas Ohio service call history for 7051 Garden Valley Ave., Cleveland.	07/26/25		
PP	Enbridge Gas Ohio DOT inspection information 06/02/25.	07/26/25		
QQ	Meter read history for 7043 & 7051 Garden Valley Ave., Cleveland.	07/26/25		
RR	Operator Qualifications for K. Mwenso, Enbridge Gas Ohio	07/26/25		
SS	Enbridge Gas Ohio Mainline installaton records.	07/26/25		
TT	EGO service line abandonment records.	07/26/25		
UU	EGO regulator station audit logs.	07/26/25		
VV	S-E-A Formal Investigative Summary	03/27/26		
WW	S-E-A Laboratory Examination Information from October 27, 2025.	10/30/25		

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Failure Investigation Documentation Log			
Operator: Enbridge Gas Ohio	Unit #: Northeast Shop	CPF #: N/A	Date: 06/23/25

Appendix Number	Documentation Description	Date Received	FOIA Yes	FOIA No

Based on the results of the investigation, did violations of the Pipeline Safety Regulations or Ohio Administrative Code cause or contribute to the incident? ☐ Yes ☒ No

Code Section	Violation

Investigator: David Price, Lead Investigator Date: 05/01/2026

Investigator: Jeff Storch, GPSCI Date: 05/01/2026

Manager: Chris Domonkos, Operations Manager Date: 05/01/2026

Redaction Date: 9/24/2026 2:55:07 PM

Redaction Log

Total Number of Redactions in Document: 3

Redaction Reasons by Page

Page	Reason	Description	Occurrences
1	VICTIM RIGHTS	R.C.149.43(A)(1)(rr) Records, documents, and information the release of which is prohibited under sections 2930.04 and 2930.07 of the Revised Code.	1
1	NOT PUBLIC RECORD	Not a “Record” as defined in R.C. 149.011(G) as “any document, device, or item, regardless of physical form or characteristic, * * * created or received by or coming under the jurisdiction of any public office of the state * * * which serves to document the organization, functions, policies, decisions, procedures, operations, or other activities of the office.” Kish v. Akron, 109 Ohio St.3d 162, 2006-Ohio-1244, 846 N.E.2d 811, ¶ 18. Or, as defined by law as exempt from the definition of a record.	1
13	TELEPHONE NUMBER	Individual phone numbers redacted under Doe v. Ohio State Univ., 2024-Ohio-5891, ¶ 31 (10th Dist.), appeal not allowed, 2025-Ohio-857, reconsideration denied, 2025-Ohio-2416.	1

Redaction Log

Redaction Reasons by Exemption

Reason	Description	Pages (Count)
NOT PUBLIC RECORD	Not a "Record" as defined in R.C. 149.011(G) as "any document, device, or item, regardless of physical form or characteristic, * * * created or received by or coming under the jurisdiction of any public office of the state * * * which serves to document the organization, functions, policies, decisions, procedures, operations, or other activities of the office." Kish v. Akron, 109 Ohio St.3d 162, 2006-Ohio-1244, 846 N.E.2d 811, ¶ 18. Or, as defined by law as exempt from the definition of a record.	1(1)
TELEPHONE NUMBER	Individual phone numbers redacted under Doe v. Ohio State Univ., 2024-Ohio-5891, ¶ 31 (10th Dist.), appeal not allowed, 2025-Ohio-857, reconsideration denied, 2025-Ohio-2416.	13(1)
VICTIM RIGHTS	R.C.149.43(A)(1)(rr) Records, documents, and information the release of which is prohibited under sections 2930.04 and 2930.07 of the Revised Code.	1(1)