



WMSC Commissioner Brief: W-0247 Evacuation for Life Safety Reasons – Greenbelt Rail Yard – April 18, 2023

Prepared for Washington Metrorail Safety Commission meeting on October 24, 2023

Safety event summary:

On Tuesday, April 18, 2023, the Greenbelt Rail Yard Railcar Service and Inspection Shop was evacuated for life safety reasons due to a natural gas leak outside the building. There were no injuries reported as a result of this event.

At 2:29 a.m., an Office of Car Maintenance Supervisor reported a gas leak outside the building to the Maintenance Operations Center Controller in the Rail Operations Control Center, who in turn requested assistance from the Prince George's County Fire Department (PGFD) and notified the Metro Transit Police Department. Plant Maintenance personnel were dispatched to use a gas leak detector to assist in identifying the leak.

PGFD identified the gas meter, owned by Washington Gas, as the source of the leak and shut off the gas. Personnel were allowed to reenter the building.

Washington Gas responded the following day and identified a defective regulator on the gas meter as the cause of the leak. Maintenance and the inspection of the meter are the responsibility of Washington Gas. Washington Gas replaced the manifold feeding the Service and Inspection Shop.

A work order in Maximo, Metrorail's asset management system, showed that a gas leak was previously reported in the same location on April 13, 2023, and that Washington Gas was scheduled to make repairs the day this event occurred.

Probable Cause:

The probable cause of this evacuation for life safety reasons was a gas leak caused by a defective regulator that had not yet been maintained and repaired.



Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23266

Date of Event:	April 18, 2023
Type of Event:	Evacuation for Life Safety Reasons (Gas Leak)
Incident Time:	02:29 hours
Location:	Greenbelt Yard – Building B, Service & Inspection (S&I) Shop
Time and How received by SAFE:	03:31 hours – MAC (Mission Assurance Coordinator)
WMSC Notification Time:	03:14 hours
Responding Safety Officers:	None
Rail Vehicle:	None
Injuries:	None
Damage:	None
Emergency Responders:	Prince George’s County Fire Department (PGFD), Metro Transit Police Department (MTPD)
SMS I/A Incident Number:	20230427#108038

Greenbelt Yard Building, Service & Inspection Shop – Evacuation for Life Safety Reason

April 18, 2023

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Abbreviations and Acronyms

ARS	Audio Recording System
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CMNT	Office of Car Maintenance
MAC	Mission Assurance Coordinator
MOC	Maintenance Operations Center
MSRPH	Metrorail Safety Rules and Procedures Handbook
MTPD	Metro Transit Police Department
NOAA	National Oceanic and Atmospheric Administration
PGFD	Prince George's County Fire Department
PLNT	Plant Maintenance
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
S&I	Service and Inspection
SAFE	Department of Safety
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On Tuesday, April 18, 2023, at 02:29 hours, an Evacuation for Life Safety Reasons event occurred at Greenbelt Rail Yard’s Service and Inspection (S&I) Shop due to a natural gas leak outside the building. The Office of Car Maintenance (CMNT) Supervisor reported a gas leak outside of the S&I shop to the Maintenance Operations Center (MOC) Plant Maintenance (PLNT) desk. The MOC Controller confirmed this event with the reporting person and contacted the Prince George’s County Fire Department (PGFD).

At 02:33 hours, Metro Transit Police Department (MTPD) and PLNT maintenance personnel were notified of the gas leak. PGFD arrived on the scene and detected the location of the gas leak as the gas meter, which is owned by Washington Gas. At 03:09 hours, PGFD shut the gas off, and personnel were allowed to return to the building. PLNT contacted Washington Gas, who responded on April 19, 2023, and identified the cause of the leak as a defective regulator. Maintenance and inspection of the equipment is the responsibility of Washington Gas, who are able to access the facility.

The probable cause of the Evacuation for Life Safety Reasons (Gas Leak) event was determined to be a gas leak from the gas meter located on the external portion of Building B. Washington Gas responded on April 19, 2023, and determined the source of the leak to be a defective regulator and replaced the manifold feeding the S&I shop.

Incident Site

Greenbelt Yard Service & Inspection (S&I) Shop – Building B,

Field Sketch/Schematics



Figure 1 - Building - B (S&I Shop) location of leaking gas meter.
The above depiction is not to scale.

Purpose and Scope

The purpose of this accident investigation and candid self-evaluation is to collect and analyze available facts, determine the probable cause(s) of the incident, identify contributing factors, and make recommendations to prevent a recurrence.

Investigative Methods

Upon receiving notification of the Evacuation for Life Safety Reasons event at the Greenbelt Rail Yard, Building B (S&I shop) on Tuesday, April 18, 2023, SAFE team members worked with relevant WMATA subject matter experts to review the incident's facts and data.

The investigative methodologies included the following:

- Physical Site Assessment
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
 - CMNT Electrician
- Documentation Review – Collection of relevant work information and process documentation in WMATA record systems. These records include the following:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Maximo
 - Rail Operation Control Center (ROCC) Incident Report

- CMNT Fire Drill Exercise Form
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback (Phone)
 - Closed-Circuit Television (CCTV)

Investigation

On Tuesday, April 18, 2023, at 02:29 hours, an Evacuation for Life Safety Reasons event occurred at Greenbelt Rail Yard’s S&I Shop due to a natural gas leak outside the building. CMNT Supervisor notified MOC’s PLNT desk of a gas leak outside the S&I shop. The MOC Maintenance Controller confirmed this event with the reporting person and contacted PGFD.



Image 1 - Front View of Leaking Gas Meter on Exterior of Building B (S&I Shop)

At 02:33 hours, MTPD and PLNT maintenance personnel were notified of the gas leak.

During an informal interview with the electrician on duty, they reported that PGFD arrived on the scene and detected the location of the gas leak. At 03:09 hours, PGFD shut the gas off, and personnel were allowed to return to the building.

Washington Gas responded on April 19, 2023, and determined the source of the leak to be a defective regulator and replaced the manifold feeding the S&I shop.

According to WO# 17805063, the smell of gas was previously reported on 4/13/2023, and the gas was shut off. Washington Gas was scheduled to make repairs on 4/18/2023.



Apr 30, 2023 at 1:11:49 AM
 5701 Sunnyside Ave
 Beltsville MD 20705
 United States

Image 2 - Side View of Leaking Gas Meter on Exterior of Building B (S&I Shop)

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

Time	Description
02:29:54 hours	<u>CMNT Supervisor</u> : Reported the smell of gas leaking in the front of Building B (S&I shop) at Greenbelt rail yard. <u>MOC Controller</u> : Acknowledged and requested that the building be evacuated. [Phone/ MOC]
02:31:11 hours	<u>MOC Controller</u> : Notified PGFD of the reported smell of gas leaking from Building B (S&I shop) [Phone/ MOC]
02:33:23 hours	<u>MOC Controller</u> : Notified PLNT department and requested plumbers to Building B (S&I shop) [Phone/ MOC]
02:33:43 hours	<u>MOC Controller</u> : Notified MTPD of the gas leak at E99 [Phone/ MOC]
02:34:34 hours	<u>MOC Controller</u> : Notified Rail 1 of the gas leak at E99 [Phone/ MOC]
02:35:21 hours	<u>Unidentified Caller</u> : Advised the meter outside was broken, and Baltimore Gas Company was aware of the broken meter. It was reported that PGFD previously shut off gas to the meter. <u>MOC Controller</u> : Acknowledged and advised that PGFD & plumbers are still headed to check the gas leak. [Phone/ MOC]
03:09:16 hours	<u>CMNT Supervisor</u> : Reported PGFD has cleared the scene, and personnel is returning to the building. The gas leak was deemed a maintenance issue and awaiting the arrival of Washington Gas. <u>MAC</u> : Acknowledged. [Phone/ MAC]
03:19:43 hours	<u>MOC Controller</u> : Confirmed a gas leak was detected, and PGFD shut the gas off. [Phone/ MOC]

Note: Times above may vary from other systems' timelines based on clock settings.

Interview Findings

As part of the investigation launched into the event, SAFE informally interviewed one person. The interview identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources in the report.

- The smell of gas was outside of the S&I building only.
- The CMNT Electrician reported the smell of gas to the CMNT Supervisor.

Weather

On April 18, 2023, at the time of the incident, NOAA recorded the temperature as 61° F. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: [Greenbelt, MD].

Related Rules and Procedures

SOP #503.01 – Greenbelt Building B Safety and Emergency Procedures

Human Factors

Evidence of Fatigue

The biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied for this event.

Fatigue Risk

The biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied for this event.

Post-Incident Toxicology Testing

This incident did not meet the criteria for WMATA’s Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- PGFD located the leaking gas meter on the exterior of Building – B (S&I shop) and shut off the source of the leak.
- Washington Gas determined that the source of the leak was a defective regulator.
- A previous report of a gas leak was reported on 4/13/2023 (WO#1785063) and scheduled for repair on 4/18/2023.

Immediate Mitigation to Prevent Recurrence

- PGFD was dispatched and identified the gas leak source, shutting the gas off.
- PLNT Plumber was dispatched to identify the gas leak using a gas leak detector. Washington Gas responded the following day with PLNT personnel.

Probable Cause Statement

The probable cause of the Evacuation for Life Safety Reasons (Gas Leak) event was determined to be a gas leak from the gas regulator located on the external portion of Building B.

Recommended Corrective Actions

There were no Recommended Corrective Actions related to the emergency response and evacuation for this event.

Appendices

Appendix A – Photographs



Image 3 - Top View of Leaking Gas Meter on Exterior of Building B (S&I Shop)

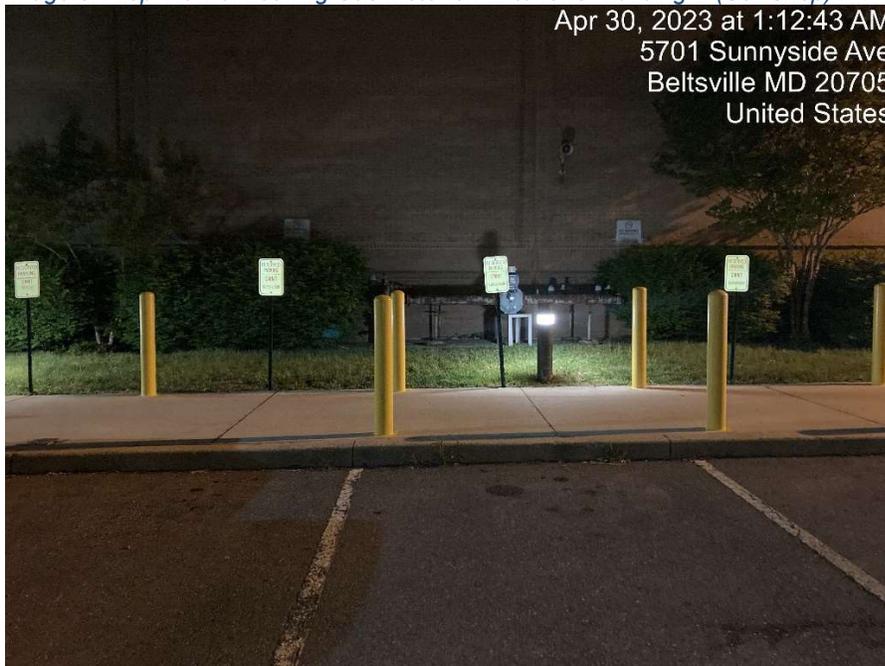


Image 4 - Front View of Leaking Gas Meter on Exterior of Building B (S&I Shop)

Appendix B – Work Orders (Redacted)



Washington Metropolitan Area Transit Authority Maintenance and Material Management System PLNT Work Order Details Report

Work Order #: 17813373 Status: COMP				04/19/2023 08:47 Type: CM					
Work Description: 17813373: E93 SUPERVISOR REPORTS SMELL OF GAS Job Plan Description:									
Work Information									
PLPLMWS4	PLNT, PLUMBING, PIPING/ VALVES/ FILTERS, RAIL	Shop Code: PLBM-PLM2	Parent:						
Asset Tag:	Alias: PIPES VAL2	Maint. Office: PLNT-BMSS-PLM2	Create Date: 4/18/2023 02:41						
Facility Loc: E93	GREENBELT YARD BLDG G S&I ANNEX/ MRO/SR251	Labor Group: PLNT-BMSS-PLM2	Act Start: 4/19/2023 08:47						
Location: 14089	E93, GREENBELT YARD, BUILDING (G) S&I ANNEX/MRO/SR251	Crew:	Act Comp: 4/19/2023 08:47						
Failure Class: PLNT015	STATION PLUMBING	GL Account: WMATA-02-31520-50499160-042- *****-OPR*-***** *****	Target Start:						
Problem Code:		Supervisor:	Target Comp:						
Requested By: [REDACTED]		Request Phone:	Sched Start:						
Name: Employee#: Start Time: Finish Time:									
Actual Labor									
Task ID	Labor	Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
	[REDACTED]	4/18/23				Y	08:00	00:00	\$374.63
	[REDACTED]	4/17/23	4/18/23			Y	03:30	00:00	\$164.71
Total Actual Labor:								\$539.34	
Related Records									
WO	Description	Class	Status	Relationship					
17805063	E93 SUPERVISOR REPORTS SMELL OF GAS	WORKORDER	COMP	RELATED					
Ticket	Description	Class	Status	Relationship					
8665257	E93 SUPERVISOR REPORTS SMELL OF GAS	SR	NEW	RELATED					

Image 5 - Completed Work Order for Gas Leak page 1 of 3.

Incident Date: 04/18/2023 Time: 02:29 hours
Final Report – Evacuation for Life Safety Reasons
E23266

Drafted By: SAFE 710 - 06/13/2023
Reviewed By: SAFE 704 – 06/15/2023
Approved By: SAFE71 – 06/20/2023



**Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
PLNT Work Order Details Report**

Work Order #: 17813373 Status: COMP		04/19/2023 08:47 Type: CM			
Work Description: 17813373: E93 SUPERVISOR REPORTS SMELL OF GAS					
Job Plan Description:					
Log					
Date	Class	Created By	Subject	Description	Long Description
4/19/23	WORKORDER	E015815		04/7/23 See Details	<p><p class="MsoNormal" style="margin-bottom: 8.0pt;background:white">E93 – SUPERVISOR REPORTS SMELL OF GAS GREENBELT YARD TICKET # 17813373 CHECKED FOR LEAK FOUND LEAK COMING FROM GAS REGULATOR CALLED WASHINGTON GAS TECH CAME OUT TO FIX IT AND INFORMED ME THAT SOMEONE WOULD BE OUT IN THE AM BECAUSE HE DID NOT HAVE THE PARTS IN HIS TRUCK <u1.p class="ContentPasted0"> </u1.p><o.p></o.p></p></p>
4/19/23	WORKORDER	E973447		Escorted Washington Gas for diaphragm repair.	<p> Escorted Washington Gas for diaphragm repair. Washington Gas wants to replace the gas manifold feeding the S&amp;l. They need to know the gas load for the building (total BTUs of gas fixtures). </p>

Incident Date: 04/18/2023 Time: 02:29 hours
Final Report – Evacuation for Life Safety Reasons
E23266

Drafted By: SAFE 710 - 06/13/2023
Reviewed By: SAFE 704 – 06/15/2023
Approved By: SAFE71 – 06/20/2023



**Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
PLNT Work Order Details Report**

Work Order #: 17813373 Status: COMP		04/19/2023 08:47 Type: CM				
<p>Work Description: 17813373: E93 SUPERVISOR REPORTS SMELL OF GAS Job Plan Description:</p>						
Log	Date	Class	Created By	Subject	Description	Long Description
	4/19/23		MAXADMIN	Maximo WO# 17813373 has been resolved	<p><div>
Thank you for contacting MOC. Work Order #17813373 reported to MOC has been resolved.</div> <div>
Work Order Description: E93 SUPERVISOR REPORTS SMELL OF GAS

Asset Number: PLPLMWS4

Facility Location: E93

Reported Date: 4/18/23 2:41

Should you require further assistance or have a question about this work order please contact MOC.

Thank you.</div> <div>MOC</div>
<!-- RICH TEXT --></p>	
	4/18/23		MAXADMIN	Maximo WO# 17813373 has been opened by MOC	<p><p>Thank you for contacting MOC. Work Order #17813373 has been opened to resolve the following reported issue.</p> <div>Work Order Description: E93 SUPERVISOR REPORTS SMELL OF GAS

Asset Number: PLNTE93

Facility Location: E93

Should you require further assistance or have a question about this work order please contact MOC.

Thank you.</div> <div>MOC</div>
<!-- RICH TEXT --></p>	
Failure Reporting	Cause	Description	Remedy	Description	Supervisor	Remark Date
Remarks:						



**Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
Work Order Details**

Work Order #: 17805063
Type: CM



Status: CLOSE
05/09/2023 13:17

Work Description: E93 SUPERVISOR REPORTS SMELL OF GAS
Job Plan Description:

Work Information			
Asset: PLNTE93	E93, PLNT YARD EQUIPMENT, GREENBELT YARD TRST FIELD BASE	Owning Office:	Parent:
Asset Tag:		Maintenance Office: PLNT	Create Date: 04/13/2023 22:38
Asset S/N:		Labor Group: PLNT-BMSS-PLM1	Actual Start: 04/14/2023 04:50
Location: 14089	E93, GREENBELT YARD, BUILDING (G) S&I ANNEX/MRO/SR251	Crew:	Actual Comp: 04/18/2023 05:58
Work Location:		Lead: PLBM-PLM1	Item:
Failure Class:		GL Account: WMATA-02-31520-50499950-042-*****-OPR**	Target Start:
Problem Code:		Supervisor:	Target Comp:
Requested By: [REDACTED]		Requestor Phone [REDACTED]	Scheduled Start:
Chain Mark Start:		Chain Mark End:	
Create-Mileage: 0.0		Complete-Mileage: 0.0	

Actual Labor									
Task ID	Labor	Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
	[REDACTED]	04/13/2023				Y	02:00	00:00	\$91.82
	[REDACTED]	04/13/2023				Y	02:00	00:00	\$91.82
Total Actual Hour/Labor:							04:00	00:00	\$183.64

Related Incidents				
Ticket	Description	Class	Status	Relationship
8664483	E93 SUPERVISOR REPORTS SMELL OF GAS	SR	NEW	RELATED

Related Work Orders				
WO	Description	Class	Status	Relationship
17813373	E93 SUPERVISOR REPORTS SMELL OF GAS	WORKORDER	CLOSE	RELATED

Failure Reporting			
Cause	Remedy	Supervisor	Remark Date
Remarks:			

Appendix C – CMNT Fire Drill Exercise Form

CMNT FIRE DRILL EXERCISE FORM

FACILITY: WMATA RAIL FACILITY E99 BUILDING B SHOP: GREENBELT S&I SHOP

Date Fire Drill Conducted: <u>04 / 18 / 2023</u>		Time Fire Drill Commenced: <u>02:29</u> Hr <u> </u> m. <u> </u> AM/PM		Time Required to Evacuate Building: <u>FIVE</u> minutes		Date of this Report: <u>4 / 18 / 2023</u>				
Department Notified? Yes (<input checked="" type="checkbox"/>) No (<input type="checkbox"/>)		Did Alarms work? Yes (<input checked="" type="checkbox"/>) No (<input type="checkbox"/>)		Were Sprinklers Tested? Yes (<input type="checkbox"/>) No (<input type="checkbox"/>)		Number of participants in exercise: <u>14</u>				
Fire Warden: <u>Camille Dell/Bissessar Gjock</u> <i>(Usually Division Superintendent)</i>		Assistant Fire Warden: <u>L. SANDERS/M. SHAW</u> <i>(OPER Supt)</i>		Fire Drill Coordinator: <u>L.SANDERS/M.SHAW</u>		Time Fire Drill Ended: <u>3:00</u> Hr <u> </u> m. <u> </u> AM/PM				
Fire Evacuation Coordinators:										
Station 1	Station 2	Station 3	Station 4	Station 5	Station 6	Station 7	Station 8	Station 9	Station 10	Station 11
1st FLOOR	2nd floor	ANNEX H BUILDING								
SANDERS	SHAW	N/A								

DEBRIEFING:

Positives: *List items that went correctly:*

All personnel evacuated in FIVE minutes

Negatives: *List items that did not go correctly and/or areas of improvement:*

NONE

CMNT Form 50.964 Rev. 1.0

Approved 03/23/2016

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Image 9 - CMNT Fire Drill Exercise Form