

TOWN OF ARLINGTON
LEGAL DEPARTMENT

DOUGLAS W. HEIM
TOWN COUNSEL



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September __, 2018

By Electronic and First Class Mail

Christopher S. Aronson
Senior Counsel
National Grid
40 Sylvan Road
Waltham, MA 02451

Re: Withholding New Permits

Dear Senior Counsel Aronson,

This Office is in receipt of your letter dated September 4, 2018, in which you allege that the Town Manager's decision to withhold issuance of *new, non-emergency permits for gas construction* permits until National Grid's gas workers return to work inspecting, repairing, and installing gas lines:

1. Endangers the lives of Arlington Residents;
2. Constitutes a violation of State Ethics laws;
3. Is arbitrary and improperly motivated under the State Ethics laws; and
4. Is Outside of the Manager's discretion in any event.

In short, such broad accusations are unfounded, threatening, misapprehend the procedural history and basis of the Town's position, and more importantly, do little to provide the Town of Arlington reason for reconsideration or amendment of its present, hopefully temporary policy. Indeed, contrary to such accusations, the safety and well-being of Arlington residents was and remains the primary concern and basis of the Town's position, which was discussed and voted upon by its elected Select Board and is being faithfully executed by the Manager.

By way of background, the Town of Arlington, like many other communities has been plagued by gas leaks from National Grid pipelines. In the past several years Town staff and the Select Board have received myriad complaints, formal and informal, about gas leaks and consequential damage to Arlington's environment, resident consumers, and health and safety, including, but not limited to:

- An October 19, 2015 presentation from the Massachusetts Sierra Club (annexed hereto as attachment "A") noting the environmental and human health concerns regarding 148 unrepaired gas leaks in Arlington, the oldest of which was first reported in 1996 and still remained.¹ The Sierra Club urged the Board to support House Bill 2870 is an "An Act Relative to Protecting Consumers of Gas and Electricity," with which you are no doubt familiar. The Select Board voted in support of same, as well as H 2871, "An Act Relative to Gas Leak Repairs During Road Projects."
- A September 11, 2017 presentation by "Mothers Out Front," urging support for House Bill 2683/Senate Bill 1845 (again, "An Act Relative to Protecting Consumers of Gas and Electricity from Paying for Unaccounted Gas), which included a June 4, 2016 Boston Globe article "Missing Gas Leaks Raising Questions" by David Abel. Within those materials (annexed hereto as Attachment "B," it was noted foremost that Arlington is one of the communities with a high number of unrepaired gas leaks²; and further, that across the State, a significant number of gas leaks vanished from databases without being clearly rectified).
- Documented chronic loss of public shade trees due to gas leaks, confirmed by 2018 "Gas Sentry" testing by the Town's Tree Warden, resulting in more than \$43,000 in damages.³

In fact, according to HEET, while there were 234 repaired gas leaks in Arlington in 2017, there were also nearly as many unrepaired leaks – 204,⁴ one of the highest amounts among towns in the Commonwealth, and likely one of the highest per capita and per square mile among all municipalities.⁵ While unsatisfied with the present state of gas leaks, the Town and its Select Board are cognizant of the challenge facing National Grid in maintaining and repairing aging infrastructure, and as such, have attempted to maintain a balance between understanding the need to support National Grid's work and services on one hand, and advocating for better protection

¹ Citing Home Energy Efficiency Team ("HEET") reports and data.

² Again citing Home Energy Efficiency Team ("HEET") reports and data.

³ This matter was the subject of a July 26, 2018 Column in the Arlington Advocate, "Gas Leaks Causing Tree Deaths in the Center," by Anne Wright and Brucie Moulton, which also cited the Town of Brookline's 2010 lawsuit against National Grid for over \$1 million in tree losses, believed to be settled for approximately \$139,000 earlier this year.

⁴ <https://heetma.org/gas-leaks/gas-leak-maps/>

of Arlington residents and our natural resources on the other. Indeed, the Select Board, the Manager, the Department of Public Works, and Inspectional Services have remained patient and accommodating of National Grid's needs – approving grants of location, permits for new gas lines, and urging public understanding, even as the Town has stressed its serious concerns about pervasive leaks.

With such a context in mind, when resident representatives of the United Steel Workers Local 12003 District 4 Boston Gas Workers Union (hereinafter "Gas Workers") addressed the Select Board on July 16, 2018, the Board's primary concern was and remains the safe installation, maintenance, and inspection of gas pipelines throughout Arlington, which manifestly present enormous challenges to National Grid even when its labor force for performing and supervising such work is on the job. In other words, if National Grid cannot resolve hundreds of active leaks in Arlington in the ordinary course of business, the Gas Workers' representations about the dangers of employing contract workers to perform their duties were compelling.⁶ Nonetheless, the Board took no action that night, but instead put the matter over for a full discussion and consideration of a resolution on July 26, 2018, at an open, posted meeting of the Board.

Having received no counter-argument or contrary set of facts from National Grid or anyone else, the Board passed the attached resolution based upon the aforementioned history and the resident Gas Workers' presentation of the risks associated straining the capacity of contract workers to perform the Gas Workers' function without the benefit of the same training and experience in their stead (a copy of the resolution is annexed hereto as Attachment "C").

The resolution *does not* prohibit emergency repairs or apply to projects which were already under way. Rather, it is limited to "new, non-emergency gas construction projects;" expressly asserting the Board's concern regarding line inspections and monitoring by appropriately trained workers. Consistent with that position, the Town is unaware of any pending or withheld permits necessary to protect public safety. Hence, your broad accusation that the Town, rather than the present labor dispute between National Grid and Gas Workers, presents a "clear and real threat to public health and safety" is unavailing.

Similarly, your reliance upon c. 164 sec. 70 to support the position that the Board has no discretion to deny a utility's request for permits is unpersuasive. Sec. 70 provides in relevant part:

A gas company may, with the written consent of the aldermen or the selectmen, dig up and open the ground in any of the streets, lanes and highways of a town, so far as necessary to accomplish the objects of said corporation; but such consent shall not affect the right or remedy to recover damages for an injury caused to persons or property by the acts of such corporation...

⁶ Such a position was bolstered by July 19, 2016 correspondence received from Gas Leak Allies, which provided a scorecard of gas leaks in Arlington noting a 57 percent increase in gas leaks from 2016 to 2017 (*See* Gas Leak Allies scorecard annexed hereto as attachment "D").

(emphasis added). The statute on its face requires "written consent" of the selectmen, which does not imply that said selectmen have no discretion to deny such written consent. Moreover, as you suggested in your letter, c. 164 sec. 75 provides:

The aldermen or selectmen may regulate, restrict and control all acts and doings of a corporation subject to this chapter which may in any manner affect the health, safety, convenience or property of the inhabitants of their towns.

In sum, the Select Board is earnestly and deeply concerned about National Grid's installation of new gas lines without inspection by trained, experienced workers, especially within the context of a Town rife with ever increasing number of gas leaks. Because the resolution does not impact your ability to fix emergency leaks (presumably what all parties would agree Grade 3 leaks constitute), the regulation and control over National Grid exercised by the Select Board is clearly the requirement to have sufficiently trained and experienced workers installing new, non-emergency gas lines as authorized by sec. 75.⁷

Finally, the Board offers no apologies for hearing the concerns of its residents employed by National Grid relative to their work security and health benefits in conjunction with larger safety issues. The Town trusts that both National Grid and the Gas Workers will advocate their needs for a fair and equitable contract between themselves, but its elected officials will not abide the suggestion that its resolution constitutes an improper use of the Board's position. Unless National Grid intends to withdraw its suggestion that the Board's members or the Manager are in violation no less than five provisions of the State's Conflict of Interest law in such a conclusory fashion, this Office will draft a formal opinion for submission to the State Ethics Commission and advise the Department of Public Utilities and our legislative delegation of the result.

If National Grid would like the Town to reconsider its position, it would be far more helpful to hear National Grid's plan to address the safety concerns articulated by the Board, address the broader issue of pervasive gas leaks, and provide some assurance that sufficient resources are available for new construction projects without the benefit of its Gas Workers in such a broader context. The Board's next scheduled meeting is _____. I invite you or other representatives of National Grid to attend.

⁷ With respect to National Grid's reliance upon *Cheney v. Barker*, 198 Mass. 356 (1908), subsequent case law makes clear that a board of selectmen may deny a permit for the types of reasons set forth in sec. 75. National Grid may well disagree with the Board's conclusions, but compelling evidence was presented to provide sufficient bases for the Board's actions, which unlike the board in *Cheney*, were rooted in public health and safety concerns, not a contention that c. 164 itself was unconstitutional or that financial compensation and affirmative public benefit could be required by said board.

In the meantime, please contact the undersigned at your convenience should you have any questions and advise me as to whether or not National Grid will continue to charge Arlington Town Officials with serious breaches of the conflict of interest laws.

Sincerely yours,

Douglas W. Heim, Esq.
Arlington Town Counsel

cc: Adam Chapdelaine, Town Manager

Arlington Select Board

DRAFT

ATTACHMENT "A"

Massachusetts Gas Leaks Legislation

OCTOBER 6, 2015

DAVID ZEEK

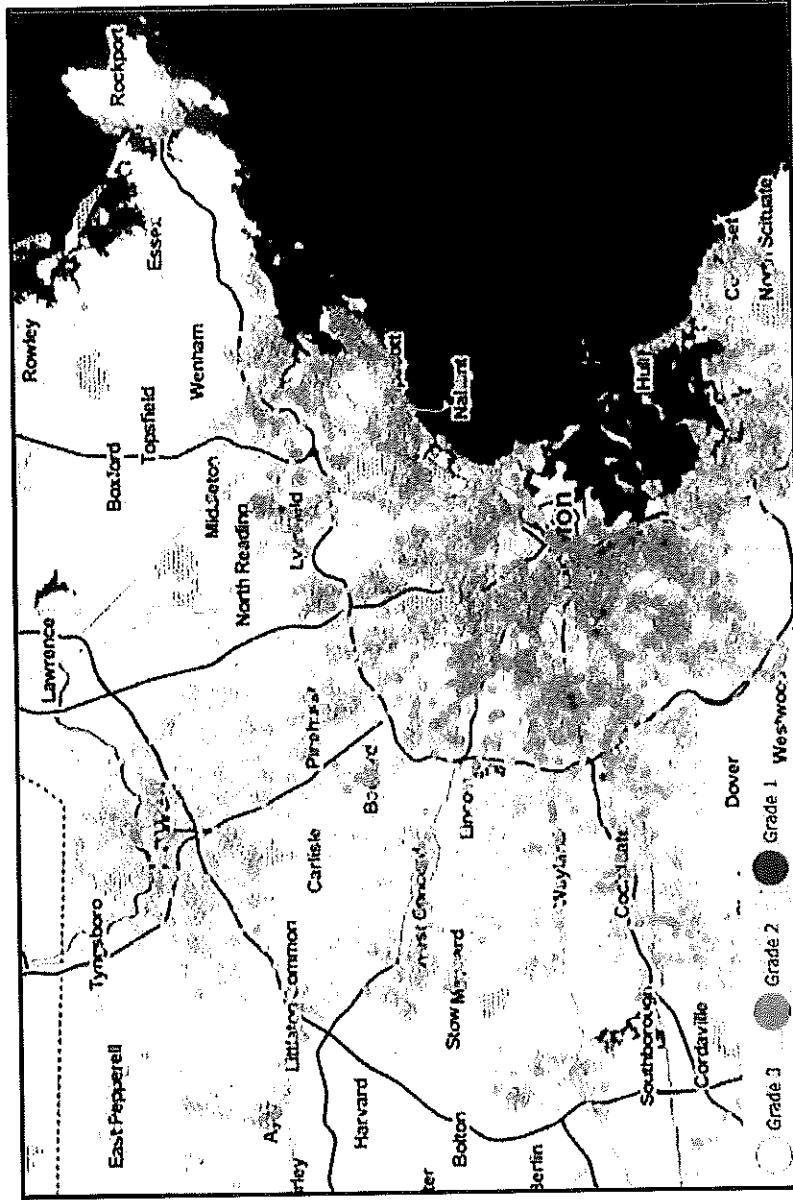
SIERRA CLUB, MASSACHUSETTS CHAPTER

Natural Gas Leaks: A Waste and a Threat

Massachusetts has one of the nation's oldest natural gas pipeline systems.

- Over 25,000 leaks
- 8-12 billion cubic feet of lost gas
- Costs Massachusetts ratepayers \$8.8M annually (Per Employee.net)

REV-

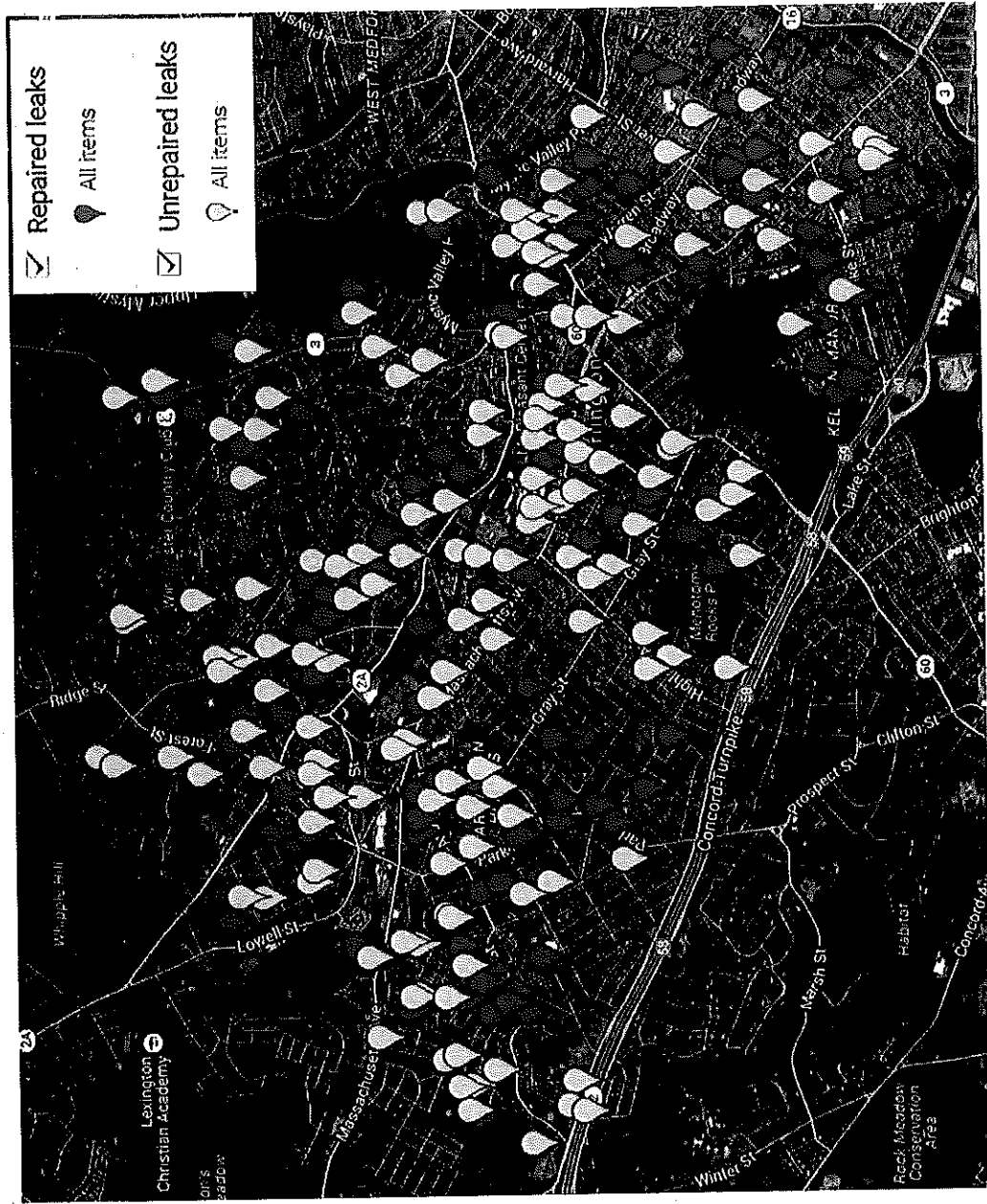


Leaks threaten safety, health, and the environment.
Leaks waste a valuable resource. And we pay for it!

Arlington Has 154 Unrepaired Gas Leaks

The oldest is from 1986.

REV:-



From <http://www.heetma.org/squeaky-leak/natural-gas-leaks-maps/>

What's Wrong with Gas Leaks?

Unaccounted For Gas exceeds 8 billion cubic feet per year – possibly as high as 19 billion

That lost gas is worth, on average, between \$50M and \$128M per year

Gas utilities are not required to repair Grade 3 (non-threatening) gas leaks – ever!

Gas utilities can completely recover the cost of that lost gas through charges to customers.

Natural gas (methane) is a global warming gas 84 times as bad as carbon dioxide for 20 years.

Natural gas kills plants and creates ozone which affects human health and allergies.

UFG Is Unaccounted For Gas	Lower Bound		Upper Bound	
	UFG Volume (cubic feet)	Estimated Cost of UFG	UFG Volume (cubic feet)	Estimated Cost of UFG
2000-2011	99,294,819,000	\$640,252,916	227,154,754,000	\$1,536,298,783
Annual Average	8,274,568,250	\$53,354,410	18,929,562,833	\$128,024,899

"America Pays for Gas Leaks," Table 3, Page 7. This report was prepared for Sen. Ed Markey by the House Natural Resources Committee Democratic staff.

Table 8.21. GHG and GTP with and without inclusion of climate-carbon feedbacks (ccfb) in response to emissions of the indicated main CO₂ gases (climate carbon feedbacks in response to the reference gas CO₂ are always included).

GHG	Lifetime (years)	GWP ₁₀₀		GTP ₁₀₀	
		No ccb	With ccb	No ccb	With ccb
CH ₄	12.4 ^a	34	84	67	11
HFC-134a	12.4	3710	1300	3050	205
CFC-11	45.0	3790	1350	3170	210
N ₂ O	121.0 ^b	6540	4650	5850	2340
CF ₄	50,000.0	7000	5550	7080	3450
		343	265	277	252
		368	298	284	267
		4800	6230	5270	3840
		4900	7350	5400	3950

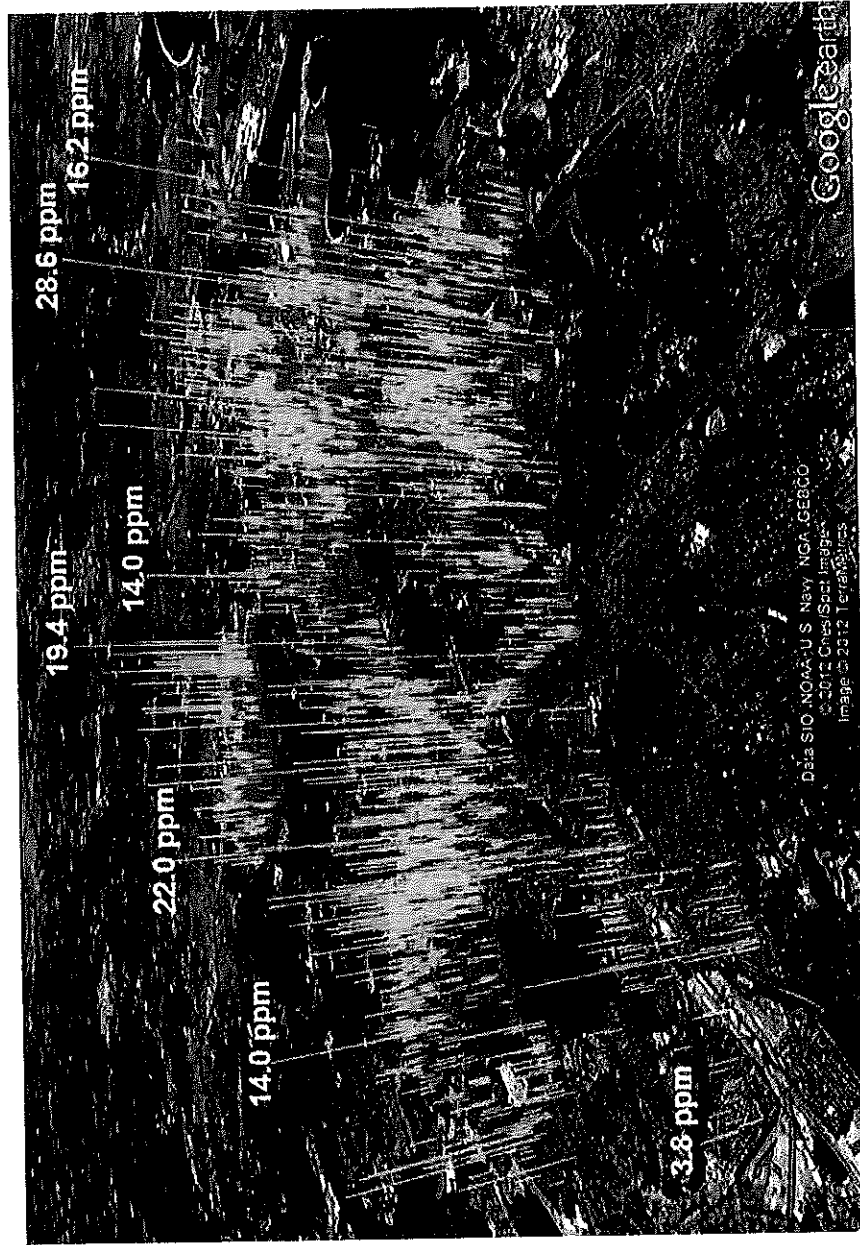
Notes:
Uncertainties related to the climate-carbon feedbacks are large, comparable in magnitude to the strength of the feedback for a single gas.
a. Potentiation factor is used in the calculation of methane.
b. These values do not include CO₂ from methane oxidation. Values for final methane are higher by 1 and 2 for the 20 and 100 year horizons, respectively (Table 8.21.1).
IPCC Climate Change Report, "Climate Change 2013: The Physical Science Basis"

Some leaks have existed for decades! It is time for Massachusetts to fix this problem.

Methane Emissions over Boston

Using sophisticated instruments,
researchers at Boston University
detected thousands of methane leaks
in the City of Boston. ©Nathan Phillips

Rev.-



Two Gas Leaks Bills in the Massachusetts Legislature Address This Problem

Two bills assigned to the Joint Committee on Telecommunications, Utilities and Energy ensure that gas consumers no longer pay for gas leaked from neglected, obsolete and decrepit pipes

H.2870, An Act Relative to Protecting Consumers of Gas and Electricity from Paying for Leaked and Unaccounted for Gas

- Precludes utility companies from charging customers for the cost of lost and unaccounted for gas, protecting consumers from expenses that they have no ability to control or reduce
- Precludes utility companies from charging customers to reduce or remedy the losses, i.e., fix the leaky pipes
- Consumers means homeowners, businesses, companies using gas in manufacturing, municipalities, state, and federal government
- Presented by Rep. Lori Ehrlich and Sen. James Eldridge with 49 additional petitioners

H.2871, An Act Relative to Gas Leak Repairs During Road Projects

- Requires all gas leaks under a road to be repaired when it is opened up for a construction project. This is a sensible, cost saving, efficient way to ensure more leaks are repaired.
- Expands coverage of safety leaks bill passed last year
- Presented by Rep. Lori Ehrlich with 47 additional petitioners

Municipal Support for Gas Leaks Legislation

Your community can voice its
support for these bills.

Seven municipalities have
already passed resolutions
supporting one or both gas
leaks bills

Boston
Cambridge
Framingham
Newton
Northampton
Salem
Waltham

REV:-



City of Waltham, Massachusetts

Resolution

Concerning Lost and Unaccounted For Gas

June 8, 2015

WHEREAS, "Unaccounted For Gas" (UFG) or "Lost And Unaccounted For Gas" (LAUF) represents the difference between the total gas from all sources and the total gas accounted for at sales, interchange, and use and includes leakage or loss by other means, discrepancies in measuring or maintaining, variations of temperature or pressure and other variance, and

WHEREAS, The cost of UFG is typically passed down from providers to consumers, and

WHEREAS, Leaking gas in the ground is harmful to vegetation and can kill valuable shade trees by depriving roots of oxygen, and

WHEREAS, Massachusetts House Bill (H.2870), "An Act relative to protecting consumers of gas and electricity from paying for leaked and UFG", seeks to protect all gas and electricity customers from paying for UFG, by prohibiting providers from including the cost of UFG, as well as the cost of reducing or retarding loss, in the rate base, and

WHEREAS, H.2870 will provide economic incentives to gas providers to mitigate loss, pushing development of improved technologies and practices, as well as to reduce leak-topping gases released during transportation, distribution and storage, which have an impact on global warming;

THEREFORE, BE IT RESOLVED... That the Waltham City Council supports H.2870, and

BE IT FURTHER RESOLVED... That the Waltham City Clerk forward an engrossed copy of this resolution to the elected Waltham delegation in the House and Senate as well as House Speaker Robert A. DeLeo and Senate President Stanley C. Rosenberg on behalf of the entire Waltham City Council;

Read and adopted _____

Attest: Rosario C. Maloney, City Clerk

Respectfully submitted:

Councillor George A. Darcy III

Councillor Stephen F. Bourke

Example Language

Backup

Grades of Gas Leaks

Massachusetts Law (2014) Chapter 149 AN ACT RELATIVE TO NATURAL GAS LEAKS changes to: Chapter 164, MANUFACTURE AND SALE OF GAS AND ELECTRICITY, Section 144.

- (a) There shall be uniform natural gas leaks classification for all gas companies.
- (b)
 - (1) Gas companies shall assess a grade to all reported natural gas leaks based on the system provided in this section.
 - (2) A Grade 1 leak shall be a leak that represents an existing or probable hazard to persons or property. **Grade 1 leaks require repair as immediately as possible and continuous action until the conditions are no longer hazardous.** The gas company shall immediately schedule a completion of repairs and the condition shall be kept under continuous surveillance until the hazard or source of the leak is eliminated. Whenever appropriate and feasible, a gas company shall notify the fire department and chief law enforcement officer in each city or town where a Grade 1 leak is identified.
 - (3) A Grade 2 leak shall be a leak that is recognized as non-hazardous to persons or property at the time of detection, but justifies scheduled repair based on probable future hazard. **The gas company shall repair Grade 2 leaks or replace the main within 12 months from the date the leak was classified.** All Grade 2 leaks shall be reevaluated by a gas company at least once every 6 months until eliminated; provided, however, that the frequency of reevaluation shall be determined by the location and magnitude of the leakage condition.
 - (4) A Grade 3 leak shall be a leak that is recognized as non-hazardous to persons or property at the time of detection and can be reasonably expected to remain non-hazardous. The gas company shall reevaluate Grade 3 leaks during the next scheduled survey, or within 12 months from the date last evaluated, whichever occurs first, until the leak is eliminated or the main is replaced. A municipal or state public safety official may request a reevaluation of a Grade 3 leak prior to the next scheduled survey, or sooner than 12 months of the date last evaluated, if the official reasonably believes that the Grade 3 leak poses a threat to public safety.

<https://malegislature.gov/Laws/SessionLaws/Acts/2014/Chapter149>

Gas Leaks in the News

The public is just now becoming aware of the cost, waste, and personal and environmental hazard of gas leaks as they have become a significant current topic in the news. See:

Boston Globe, Aug. 20, "Leaks widespread in state's gas lines"

<http://www.bostonglobe.com/metro/2015/08/20/new-law-casts-light-state-natural-gas-leaks/qJJPCiRZITc5ai0JeHNOqO/story.html>

WBUR, Aug. 21, Radio story on gas leaks,

<http://radioboston.wbur.org/2015/08/21/leaky-gas-lines>

WCVB television news, Aug. 21, "Hidden danger, cost of gas leaks in Massachusetts"

<http://www.wcvb.com/news/hidden-danger-cost-of-gas-leaks-in-massachusetts/34852528>

Resources

Resource	Source	Link or Reference
Report on Lost and Unaccounted for Gas Into Thin Air	DPU CLF	http://www.mass.gov/eea/docs/dpu/gas/icf-lauf-report.pdf http://www.clf.org/static/natural-gas-leaks/WhitePaper_Final_lowres.pdf
America Pays for Gas Leaks	Sen. Ed Markey	http://www.markey.senate.gov/documents/markey_lost_gas_report.pdf
David Abel "Leaks in Boston area gas pipes exceed estimates"	Boston Globe	http://www.bostonglobe.com/metro/2015/01/22/natural-gas-leaks-boston-area-are-far-more-extensive-than-thought/5BykQrmaGR2XltxpHqLM/story.html
"Methane emissions from natural gas infrastructure and use in the urban region of Boston, Massachusetts"	Proceedings of the National Academy of Sciences of the United States of America	http://www.pnas.org/content/112/7/1941.full?sid=544e506b-2c46-4e28-b620-1dc30c6rea62
An Act relative to protecting consumers of gas and electricity from paying for leaked and unaccounted for gas	Massachusetts House	https://malegislature.gov/Bills/189/House/H2870
An Act Relative to Gas Leak Repairs During Road Projects	Massachusetts House	https://malegislature.gov/Bills/189/House/H2871
Understanding the Impact of Natural Gas Leaks on Public Safety, the Environment and Your Wallet	CLF	http://clf.org/map/

ATTACHMENT "B"

**MATERIAL SUPPORTING PRESENTATION BY ANNE WRIGHT
OF MOTHERS OUT FRONT ARLINGTON TEAM
RE: CONSUMER PROTECTION AGAINST PAYING FOR
COST OF GAS LEAKS**

September 11, 2017

Arlington Board of Selectmen

[TOWN]
IN [BODY applicable: CITY COUNCIL, SELECTMEN ...]

Seal

RESOLUTION IN SUPPORT
MASSACHUSETTS HOUSE BILL 2683/SENATE BILL 1845
An Act Relative to Protecting Consumers of Gas and Electricity from paying for Leaked and Unaccounted for Gas

- WHEREAS:** Massachusetts House Bill 2683/Senate Bill 1845 is an "An Act Relative to Protecting Consumers of Gas and Electricity from paying for Leaked and Unaccounted for Gas (UFG)" that seeks to protect all gas and electricity customers, whether businesses, manufacturers, homeowners and municipalities or other gas users, from paying for UFG by prohibiting providers from including the cost of UFG, as well as the costs of reducing or remedying loss, in the rate base; and
- WHEREAS:** According to H. 2683/S.1845, "Unaccounted for gas or UFG is the difference between the total gas available from all sources that is acquired by a system type and the total gas accounted for as sales, net interchange or company use"; and
- WHEREAS:** H.2683/S.1845 covers leakage or loss by leakage or loss due to discrepancies from measuring or monitoring inaccuracies, variations of temperature or pressure, or both, and other circumstances; and
- WHEREAS:** H.2683/S.1845 will provide economic incentive to gas providers to develop improved technologies and practices for transportation, distribution and storage; and
- WHEREAS:** The cost of UFG is typically passed on from providers of natural gas to users or consumers of gas; and
- WHEREAS:** Leaking gas in the ground is harmful to vegetation and can kill valuable shade trees by depriving roots of oxygen; and
- WHEREAS:** Methane is a precursor to ozone formation that can decrease lung function and aggravate asthma; and

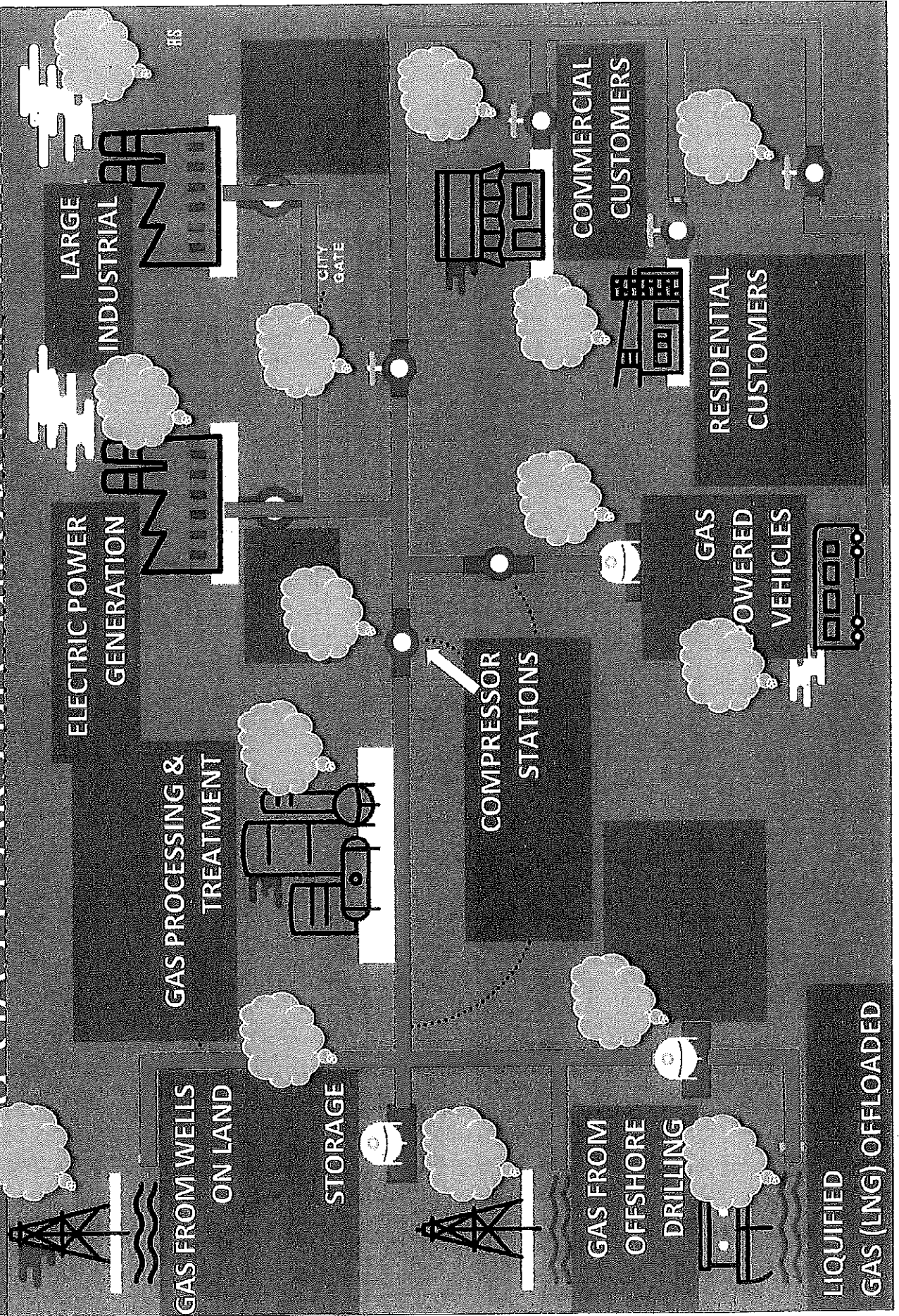
THEREFORE BE IT

RESOLVED: That the [BODY] strongly supports House Bill 2683/Senate Bill 1845 and urges the Massachusetts Legislature to take action to support this measure to protect consumers and the environment.

RESOLVED: That the [BODY] forward an engrossed copy of this resolution to the elected [TOWN] delegation in the House and the Senate as well as House Speaker Robert A. DeLeo and Senate president Stanley C. Rosenberg and to the Governor on behalf of the [BODY].

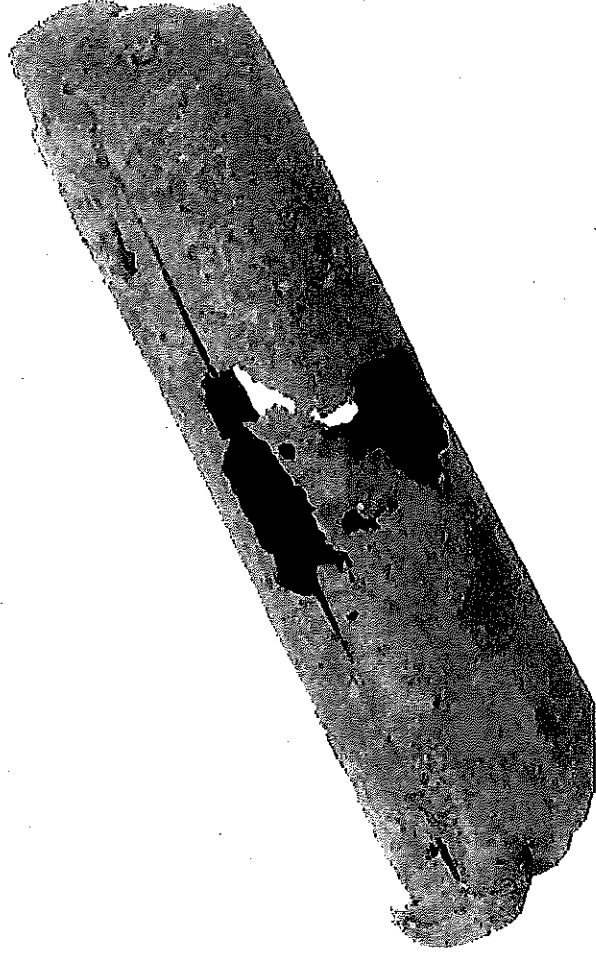
Filed in [BODY]: [DATE]

And GAS IFAKS are all over the man!

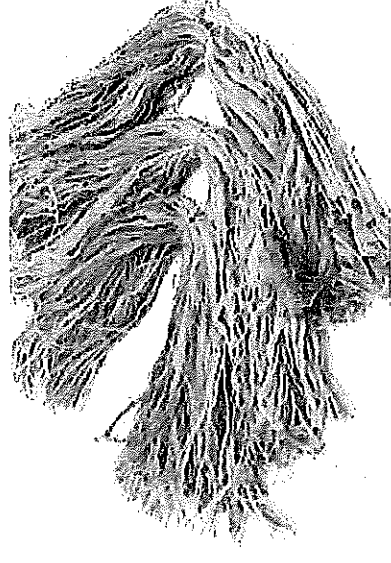


GREATER BOSTON IS LEAKING GAS

Century-old gas pipes under the streets have corroded and leak.



Jute, the original pipe joint sealant, has long since fallen apart



A 2015 Harvard study found...Methane levels in the Boston urban area are 3x WORSE than previously estimated by regulators. 2.7% of the gas brought to Boston never makes it to customers.

GAS LEAKS ARE PAID FOR BY YOU!



Residential Gas Service

Gas Bill Comparison

	Current Month	Last Month
Gas Charges	\$10.23	\$10.14
Total Gas Use (therms)	2	2
Delivery Charges (per therm) <i>Cost to deliver gas to your home.</i>	\$4.83	\$4.83
Delivery Total	\$9.65	\$9.65
Supply Charges (per therm) <i>Cost to purchase gas on your behalf.</i>	29.0¢	24.5¢
Supplier Total	\$0.58	\$0.49

**Gas leaks cost
Boston area
ratepayers
\$90 million per
year.**

- Harvard study, 2015

Missing gas leaks raising questions



DAVID L. RYAN/GLOBE STAFF

National Grid employee Lane Guidry connected the chute to the gas pipe.

By **David Abel** | GLOBE STAFF JUNE 04, 2016

Thousands of natural gas leaks reported by the state's utility companies disappeared from the records they later submitted to the state, according to an independent analysis by a Cambridge group that says their study shows the leaks have likely not been repaired.

Nearly 5,700 potentially explosive, environmentally damaging leaks — nearly 30 percent of all leaks that went unrepaired in 2014 — vanished from the utilities'

Comments
to a study of data the companies disclosed in March, the most recent public information.

"This suggests that the utilities aren't doing a good job tracking leaks," said Audrey Schulman, president of the Home Energy Efficiency Team, or HEET, a Cambridge nonprofit that analyzed the data. "If they don't have them on their books, they're not monitoring them, and if they're left unmonitored, leaks get worse."

Utility companies are spending billions of dollars to replace leaky gas pipelines across the state, and repair leaks as quickly as possible, company officials say. The leaks, which are responsible for a significant portion of the state's greenhouse gases, are often caused by corroding cast-iron pipes or construction accidents.

The utilities cited various reasons for how leaks could have disappeared from their records without being repaired. Some leaks may no longer be emitting gas, while others may have migrated to punctures elsewhere in the pipes, they said. Some may have been temporarily plugged by snowbanks or concealed by weather that makes them hard to detect.

Graphic: Unrepaired natural gas leaks in Mass.

The state's utility companies reported nearly 20,000 unrepaired natural gas leaks in 2014.

National Grid, the region's largest provider of natural gas, reported 11,343 unrepaired leaks at the end of 2014 to the state Department of Public Utilities, but just 8,349 at the beginning of 2015.

It was unclear how 26 percent of unrepaired leaks could have disappeared overnight.

"It is important to note that leaks are not static and we do not monitor each leak

near the spot of a previously fixed leak, she said.

"Where gas readings are found may not necessarily be the exact site of the leak," she said.

In addition, some leaks could have been taken care of by replacing gas mains, and as a result were never marked as repaired. Others may have been duplicates. There could have also been "a clerical issue, in which missing or repaired leaks had not been removed from previous years," Williamson said.

Utilities are legally required to immediately repair leaks that pose a risk of explosion. A state law passed in 2014 requires utilities to repair minor leaks on streets that are under construction, near a school zone, or around trees that appear to be dying. The utilities used to allow those leaks to persist indefinitely because they didn't see them as imminent threats.

Under the 2014 law, utilities must disclose the location of every leak, the date they were reported, and when they were repaired. That provision allowed Schulman to map all the leaks in the state.

Schulman said she studied the locations of the unrepaired leaks and determined that three-quarters of them are almost certainly not duplicates, nor the result of repairs to larger mains.

Her group also conducted a random survey in eight municipalities from Boston to Acton of 55 unrepaired leaks that disappeared last year, and found that more than half were still active.

"Leaks don't self-heal or peter out," Schulman said. "They come from holes in ancient metal corroded pipes sitting for decades in damp soil. They are only going to get steadily worse over time."

Officials at Eversource, which supplies gas to nearly 300,000 customers in Massachusetts, said they're fixing leaks nearly every day and are spending \$53 million this year to replace 35 miles of leak-prone gas mains. The company plans to accelerate repairs over the next few years.

Delays in the internal reporting of leaks may account for some of the discrepancy, the company said.

"This is a dynamic list that changes," said Mike Durand, a spokesman for Eversource. "We recheck Class 3 leaks [those considered unlikely to explode] every year. If we recheck it, and it's not there, it's off the list."

Sheila Doiron, a spokeswoman for Columbia Gas in Westborough, which provides gas to 310,000 customers in Massachusetts, attributed some of the missing leaks to changing weather conditions. Gas can be easier to detect on humid days, she noted, and harder when it's windy.

"Many of the very small, or nonhazardous leaks, can be faint, merely meeting the criteria," she said. "If we go back the following year, and that leak can no longer be detected through monitoring devices, then that leak doesn't exist anymore."

The discrepancy has made it difficult to determine how many leaks remain unrepaired. According to the utilities, the number of unrepaired leaks fell 19 percent from the end of 2014 to the end of 2015. But counting from the first day of 2015, the number of leaks rose by more than 21 percent.

"It makes me wonder if the infrastructure is just crumbling faster than they can repair it," Schulman said.

Nathan Phillips, a professor of environmental sciences at Boston University who has surveyed gas leaks around the state, said he finds the number of missing leaks disturbing.

Comments
“It illustrates how little we know about the number of leaks in the state, and how much of the gas is lost and unaccounted for,” he said. “This discovery makes us less sure about how much progress we’re making.”

Unrepaired natural gas leaks across Massachusetts

The state’s utility companies reported nearly 20,000 unrepaired natural gas leaks in 2014. Nearly 5,700 leaks disappeared from their books in 2015 without being repaired, according to an analysis of the most recent data that the companies have released.

Number of unrepaired natural gas leaks that disappeared

0 to 5 6 to 29 30 to 49 50 to 99 100 to 400



SOURCE: HEET, a Cambridge group that advocates for energy efficiency

PATRICK GARVIN/GLOBE STAFF

David Abel can be reached at dabel@globe.com. Follow him on Twitter @davabel.

Get Today's Headlines from the Globe in your inbox:

Enter your email address

SIGN UP

ATTACHMENT "C"

OFFICE OF THE SELECT BOARD

DANIEL J. DUNN, CHAIR
DIANE M. MAHON, VICE CHAIR
KEVIN F. GREELEY
JOSEPH A. CURRO, JR.
JOHN V. HURD



730 MASSACHUSETTS AVENUE
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781-316-3029 FAX

TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

PROCLAMATION

WHEREAS: National Grid serves many residential and commercial natural gas customers within the Town of Arlington; and

WHEREAS: The United Steelworkers Local 12003 District 4 Boston Gas Workers Union represents the men and women who operate on gas lines and projects within the Town of Arlington; and

WHEREAS: Many members of the United Steelworkers Local 12003 District 4 Boston Gas Workers Union live and work in the Town of Arlington; and

WHEREAS: The safety and wellbeing of National Grid gas customers and the general public is contingent upon high quality and well-trained employees performing services and line inspections on gas projects; and


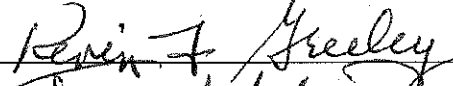
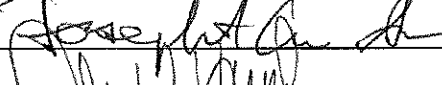
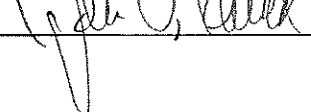
WHEREAS: A prolonged lockout of National Grid gas workers raises safety concerns for the general public and strains service to National Grid gas customers; and

NOW, THEREFORE, BE IT RESOLVED, that the Select Board of the Town of Arlington urges National Grid to end the lockout of its gas workers so that gas line inspections, services, and repairs may continue to be performed by qualified and properly trained employees; and

BE IT FURTHER RESOLVED, that the Town of Arlington provide heightened scrutiny and safety inspections and monitoring on all National Grid work being done during the lockout of National Grid's workers and that no new, non-emergency permits for gas construction projects shall be issued by the Select Board; and

BE IT FURTHER RESOLVED, that we the Select Board of the Town of Arlington urges National Grid to agree to a fair and equitable contract that provides for competitive wages and benefits commensurate with the technical skills and qualifications possessed by the members of the United Steelworkers Local 12003 District 4 Boston Gas Workers Union.

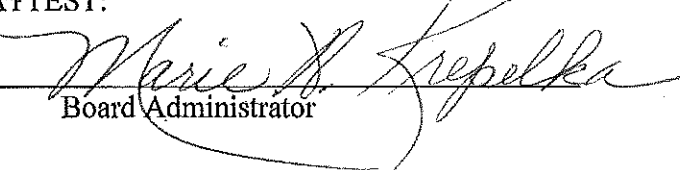
Offered on this Day of Thursday, July 26, 2018.

	SELECT BOARD
<u>Miane M. Mahon</u>	OF THE
	TOWN
	OF
	ARLINGTON

A true record.

ATTEST:

By:


Board Administrator

ATTACHMENT "D"

G. Lee Humphrey
169 Commonwealth Avenue
Boston, MA 02116
diamaleehumphrey@yahoo.com

Ad. Lee
Cores. Lee.
8/13/18

Mr. Daniel J. Dunn, Chair, Board of Selectmen
Town Hall
730 Massachusetts Avenue
Arlington, MA 02476

July 19, 2018

Dear Mr. Dunn:

For several years, many of us have been involved in the effort to eliminate the thousands of gas leaks in Massachusetts. Despite our combined efforts, the overall number of gas leaks continues to increase.

As you may know, the leaked gas is primarily methane, a heat-trapping gas more than 80 times as powerful as CO₂. In addition to its alarming rate of warming our planet and altering our climate, this gas is potentially explosive, is a health hazard for people with respiratory problems and kills trees by suffocating their roots.

The Gas Leaks Allies - a coalition of over 20 nonprofits and researchers - are alerting cities and towns about the situation and encouraging municipalities to work with their utilities to reduce the leaks.

Regarding Arlington I have enclosed a scorecard that shows the gas leak activity for 2015, 2016 and 2017. As you may see, it shows the number of leaks at the beginning of each year, the new leaks, the repaired leaks, and the number of leaks at the end of the year, all displayed by grade of leak.¹

Each year in Arlington, the number of open gas leaks increased. And that's only part of the story. In 2017, the number of leaks on January 1 was less than the number on December 31, the previous day. Each year, utilities drop leaks from their reports. This situation occurs in each utility, not just in National Grid, Arlington's utility. We have asked, but have never received a reasonable explanation of what happened to the missing leaks. In the scorecard, the missing leaks are called, "Missing Leaks New Year's Eve."

If the missing New Year's Eve leaks in 2016 had not been expunged, the number of open leaks at the end of 2017 would have been 280 leaks, instead of the 234 leaks as reported. (Note that in 2015, the missing leaks went the other way by a small amount.) The increase in open gas leaks over the three years would have been 133 leaks and many of these are large volume leaks.

With this data in hand, we urge you and your fellow selectmen to call on National Grid to start reducing the leaks, especially the large volume leaks, instead of letting them increase. We are ready to help you protect the health and safety of the citizens of Arlington. Please let us know what we can do to assist you.²

Thank you,

G. Lee Humphrey
G. Lee Humphrey

¹ There are 3 grades of gas leaks. A Grade 1 leak may cause an explosion and must be repaired as soon as possible. A Grade 2 leak is evaluated every 6 months until it is repaired. A Grade 3 leak must be checked every year but doesn't have to be repaired. The oldest gas leak in Arlington is 21 years old.

² You can learn more about the first year of missing leaks at <http://lostleaks.csail.mit.edu/>
Read Boston Globe's coverage of the 2016 missing leaks at <https://www.bostonglobe.com/metro/2016/06/03/cambridge-group-analysis-raises-questions-utilities-monitoring-gas-leaks/FuvLwOUNYEIcqoQYtUK1EI/story.html>

ARLINGTON

2015, 2016 & 2017 Gas Leak Scorecard using data reported by National Grid to DPU

2017 Leaks	Leak grade	Grade 1	Grade 2	Grade 3	Total	% Increase
Leaks prior to 2017		0	15	134	149	
New leaks found		123	68	99	290	
Leaks repaired		123	76	6	205	
Ending number of leaks		0	7	227	234	57%

Estimated annual cost of lost gas: (Ending leaks x \$3600 per leak) **\$842,400**

2016 Leaks	Leak grade	Grade 1	Grade 2	Grade 3	Total	% Increase
Leaks prior to 2016		0	2	178	180	
New leaks found		60	35	26	121	
Leaks repaired		60	30	13	103	
Ending number of leaks		0	7	191	198	10%

Estimated annual cost of lost gas: (Ending leaks x \$3600 per leak) **\$712,800**

2015 Leaks	Leak grade	Grade 1	Grade 2	Grade 3	Total	% Increase
Leaks prior to 2015		0	8	139	147	
New leaks found		93	45	41	179	
Leaks repaired		93	52	4	149	
Ending number of leaks		0	1	176	177	20%

Estimated annual cost of lost gas: (Ending leaks x \$3600 per leak) **\$637,200**

Sources: 2016, 2017 & 2018 utility reports of gas leaks to DPU, Harvard/BU study in 2015
Proceedings of NAS, BU Professor Nathan Phillips.

Missing Leaks New Year's Eve - 2016

		% Missing
Ending leaks reported last day of 2016	198	
Beginning leaks reported first day of 2017	149	
Overnight missing leaks	49	25%

Missing Leaks New Year's Eve - 2015

		% Missing
Ending leaks reported last day of 2015	177	
Beginning leaks reported first day of 2016	180	
Overnight missing leaks	-3	-2%

Note: No explanation of missing leaks has been provided by National Grid and may have multiple causes. Missing leaks are included here as they are unaccounted for and may significantly impact progress addressing leaks or lack thereof.