Purpose: Establish standard response and course of action for reported exterior natural gas line rupture.

Natural Gas

- Natural gas in its *natural state* is colorless, tasteless, and odorless.
    - Mercaptan is added to give natural gas a unique odor (rotten eggs)
- Natural gas is composed of approximately 85-95 percent methane gas.
- Natural gas is non-toxic, but it may displace oxygen and can result in asphyxiation in confined spaces.
- Natural gas has a specific gravity of 0.6
    - When contained:
        - Natural gas will rise to the upper levels of a structure
    - When not contained:
        - Natural gas will dissipate into the environment
- Natural Gas has an LEL of 5%.
- Natural Gas has an UEL of 15%.

Policy: All reports of natural gas and LPG exterior line rupture shall receive a "first alarm assignment" per **SOG #3651** ***Response to Incidents***.

Procedure:

- Notify National Grid Gas
- When possible approach scene with caution from an upwind/uphill direction.
- Note atmospheric conditions
    - Temperature and wind condition will likely effect vapor dispersion
- Personnel shall don full PPE including SCBA for all reported exterior gas line ruptures.
- Initial apparatus staged:
    - 200 feet from the affected area (when possible)
    - Out of danger (when possible)
        - Avoid collapse zone(s)

        - Avoid parking over manhole covers and storm grates
- Additional apparatus shall stage *more than* 200 feet from the affected area
- Investigate the source of the release from safe distance:
    - Utilize gas detection equipment (4 Gas METER)
    - Listen for possible roaring/hissing/whistling sound
- Maintain a perimeter around the affected area:
    - Re-route traffic if necessary
    - Consider deploying CAUTION tape or utilizing apparatus to mark the perimeter of the incident.
- Eliminate sources of ignition when possible
- Only use extrinsically safe radios and flashlights.

Operations

- Do not approach a leaking gas main.
- Have a charged hand line with a fog nozzle ready to use in the event of a fire.
    - This is a best practice that will increase your operational capability and safety on the incident scene. *(The general rule is to never put out a gas fire. You may use a fog spray to direct vapors away from or cool combustible exposures and assist with rescue operations. A fog spray may also be utilized to extinguish fires not originating from the gas pipe. Do not use solid or straight stream nozzles on a gas leak.)*
- Continually monitor the atmosphere using multiple 4-gas meters to identify the general area of the leak and migration of natural gas.
- Utilize 4-gas meters to check other areas that may be impacted by the rupture.
    - This may include basements of nearly structures
        - Although natural gas will rise and disperse when not confined, leaks from gas infrastructure can easily and quickly migrate into enclosed spaces***. (See SOG # 3561 Natural Gas & Propane Release - Inside of Structure)***

Special Considerations

NEVER:

- Extinguish burning gas(es)
- Operate underground valve(s)
- Open closed gas line(s)
- Enter manhole or underground vault (i.e. sewer, utility vault(s))

Operating with National Grid - Unified Command Structure

National Grid representative(s) will serve crucial role in mitigating exterior natural gas line rupture(s)

- National Grid representative's efforts and recommendations should be fully supported and integrated within NKFD Command Structure
- National Grid representatives shall:
  - Be directed to the IC upon arrival
  - Provide guidance and input to the IC
  - Work with IC within the incident command framework
    - National Grid representatives can be classified as non-governmental organization within the ICS (i.e. unified command structure)
  - Secure gas to the compromised gas infrastructure and work to eliminate ignition sources in proximity to the leak.
- In the event nearby structures may have been infiltrated with gas as a result of an exterior leak/rupture
  - National Grid representatives may be utilized in conjunction with NKFD personnel for the following:
    - Metering and/or gas detection in affected structure(s)
    - Shut off gas service to affected structure(s)

- Provide public information to media or other public announcements in the event of an evacuation order or other public health/safety concern.

Evacuation(s)

In the event that an evacuation is necessary:

- Utilize the DOT Emergency Response Guidebook (#115)
  - Small Leaks - Evacuate 330 feet in all directions
  - Larger leaks - ½ mile in all directions
- Work with National Grid Representative to determine the most appropriate evacuation given the situation.
- In the event an evacuation order is determined appropriate the IC must work with both National Grid representative(s) and our public safety partners (NKPD, RISP) and possible mutual aid companies in conducting this labor-intensive event.

Post Incident Considerations (Confirmed Release):

- Turn scene over to National Grid to effectuate the re-establishment of natural gas to any affected structures.