

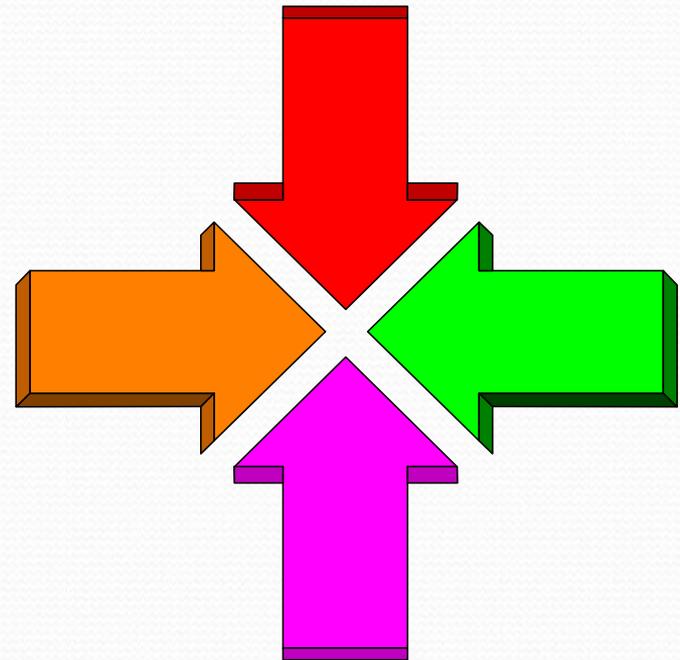
Leak Migration and Classification

PA PUC

Pipeline Safety Meeting

THE FOUR DIMENSIONS OF GAS LEAK CLASSIFICATION

- **DISPERSION**
- **LOCATION**
- **PROPORTION**
- **EVALUATION**



DISPERSION

- WHERE IS THE GAS?
- This is the most important criteria in evaluating an underground leak.
- The perimeter of the leak must be determined.
- When this perimeter extends to a building wall, the investigation should continue inside.

LOCATION

- The leak area as it compares with the surrounding environment.
- First determine the spread / dispersion of the gas.
- Next looking at the environment which is in the vicinity of the leak area.
- I.e....., Downtown verses Country

PROPORTION

- The amount of gas as shown on the Combustible Gas Indicator.
- It is not the quantity of gas, but the location of the gas that is critical in the classification process.
- I.e..., Comparing a reading of 3% gas at a foundation wall to 80% gas in a field.

EVALUATION

- The operator and his / her judgment.
- Weighing the dispersion area, location and the amount of gas to determine relative hazard of the leak.
- There may be discussion as to whether a leak is a Grade 2 or 3, but everyone should recognize a Grade 1 leak.

FACTORS WHICH CAN INFLUENCE GAS MIGRATION

- Soil Type
- Depth of Pipe
- Line Pressure
- Size of Leak
- Age of Leak
- ❖ Soil Moisture
- ❖ Surface Cover
- ❖ Slope
- ❖ Voids/Conduits
- ❖ Weather
- ❖ Barometric Pressure

Grade 1

A leak that represents an existing or probable hazard to persons or property, and requires immediate repair or continuous action until the conditions are no longer hazardous.

See §192.703(c).

Grade 2

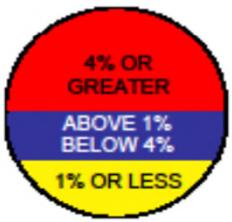
A leak that is recognized as being non-hazardous at the time of detection, but justifies scheduled repair based on probable future hazard.

Grade 3

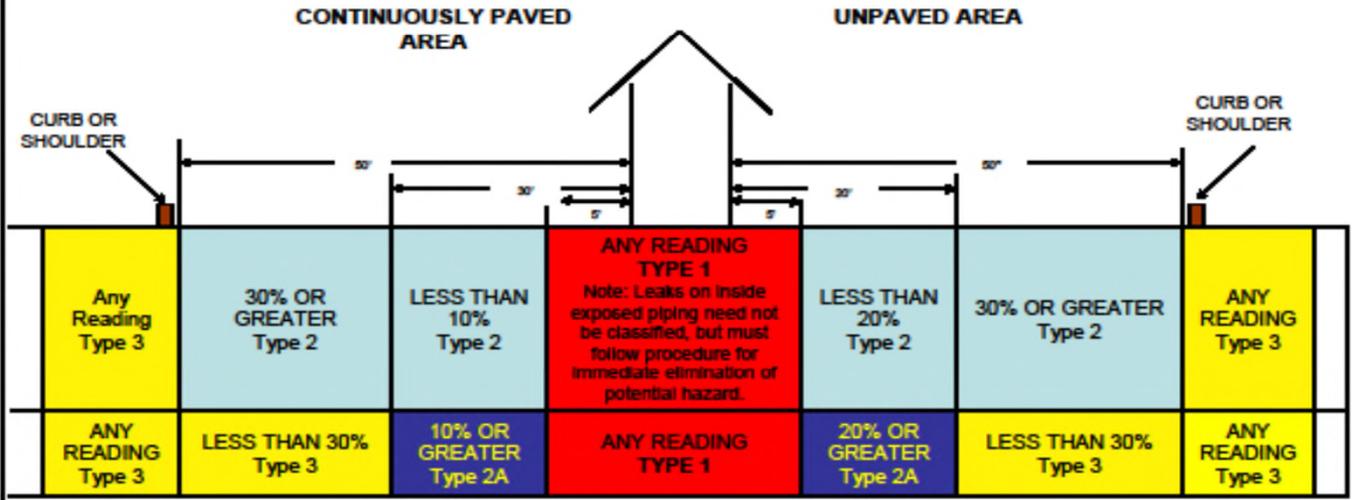
A leak that is nonhazardous at the time of detection and can be reasonably expected to remain non-hazardous.

GRAPHICAL PRESENTATION OF THE CLASSIFICATIONS OF HAZARDS WHICH RESULT FROM GAS LEAKAGE & REQUIRED ACTIONS IN ACCORDANCE WITH 16 NYCRR PART 255.805-817

MANHOLES, VAULTS OR CATCH BASINS



Readings are percent gas-in-air with structure in normal condition. Type 2 leak shall be rechecked at least every 2 weeks and repaired within 6 months.



CLASSIFICATION	ADDITIONAL CLASSIFICATIONS	REQUIRED ACTION	NOTE
TYPE 1	ANY LEAK JUDGED TO BE POTENTIALLY HAZARDOUS AT THE SCENE BY THE OPERATING PERSONNEL, THIRD PARTY DAMAGE CAUSING LEAKAGE, GAS ENTERING TUNNELS OR BUILDINGS	IMMEDIATE EFFORT TO PROTECT LIFE AND PROPERTY; CONTINUOUS EFFORT TO REMOVE HAZARD; DAILY SURVEILLANCE UNTIL SOURCE OF LEAK HAS BEEN CORRECTED	TYPE 1, 2A OR 2 REPAIR REQUIRES FOLLOW-UP INSPECTION AT LEAST 14 DAYS AFTER, BUT WITHIN 30 DAYS UNLESS REPLACED OR INSERTED
TYPE 2A	TYPE 2 OR 3 LEAKS THAT COULD MIGRATE UNDER FROST OR OTHER CONDITIONS IN THE JUDGEMENT OF OPERATING PERSONNEL AT THE SCENE	REPAIR WITHIN 6 MONTHS, SURVEILLANCE AT LEAST EVERY 2 WEEKS	
TYPE 2	TYPE 3 LEAK THAT COULD MIGRATE UNDER FROST OR OTHER CONDITIONS IN THE JUDGEMENT OF OPERATING PERSONNEL AT THE SCENE	REPAIR WITHIN 1 YEAR, SURVEILLANCE AT LEAST EVERY 2 MONTHS	
TYPE 3	ANY LEAK NOT CLASSIFIED AS TYPE 1, 2A OR 2	RECHECK AT NEXT SURVEY OR WITHIN ONE YEAR, (WHICH EVER IS LESS)	
Type 4	No Leak		

ALL READINGS ARE IN PERCENT GAS-IN-AIR AND ARE READINGS AS DEFINED IN PART 255.3 (a) (27)

GPTC Appendix G-11 and G-11A

- Recent Updates
 - Adding Precautionary Statements on Barhoeling
 - Added Section on Temporary Mitigative Repairs (5.7)
 - Updating Table 2 on Instrumentation